LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 14

2020

Bate Stamp Numbers
00972651 – 00974347

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976–2020

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

VOLUME 14

2020

A. Title: (cont'd) Report – Final 2019 Remedial Action Operation Report, Landfill 12 (LHAAP-12), Longhorn Army Ammunition Plant, Karnack, Texas, July 2020
Author(s): Department of the Army
Recipient: U.S. Environmental Protection Agency and Texas Commission on Environmental Quality
Date: July 24, 2020
Date Stamp: 00972651 – 00972807

B. Title: Transmittal Letter – Draft Remedial Action Completion Report, LHAAP-04 Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas, July 2020
Author(s): Department of the Army
Recipient: Environmental Protection Agency
Date: July 29, 2020
Bate Stamp: 00972808 – 00972808

C. Title: Transmittal Letter – Draft Remedial Action Completion Report, LHAAP-04 Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas, July 2020
Author(s): Department of the Army
Recipient: Texas Commission on Environmental Quality
Date: July 29, 2020
Bate Stamp: 00972809 – 00972809

D. Title: Minutes – Final Monthly Managers' Meeting (MMM), Longhorn Army Ammunition Plant (LHAAP), July 15, 2020
Author(s): Department of the Army
Recipient: All Parties
Date: July 29, 2020
Bate Stamp: 00972810 – 00972825

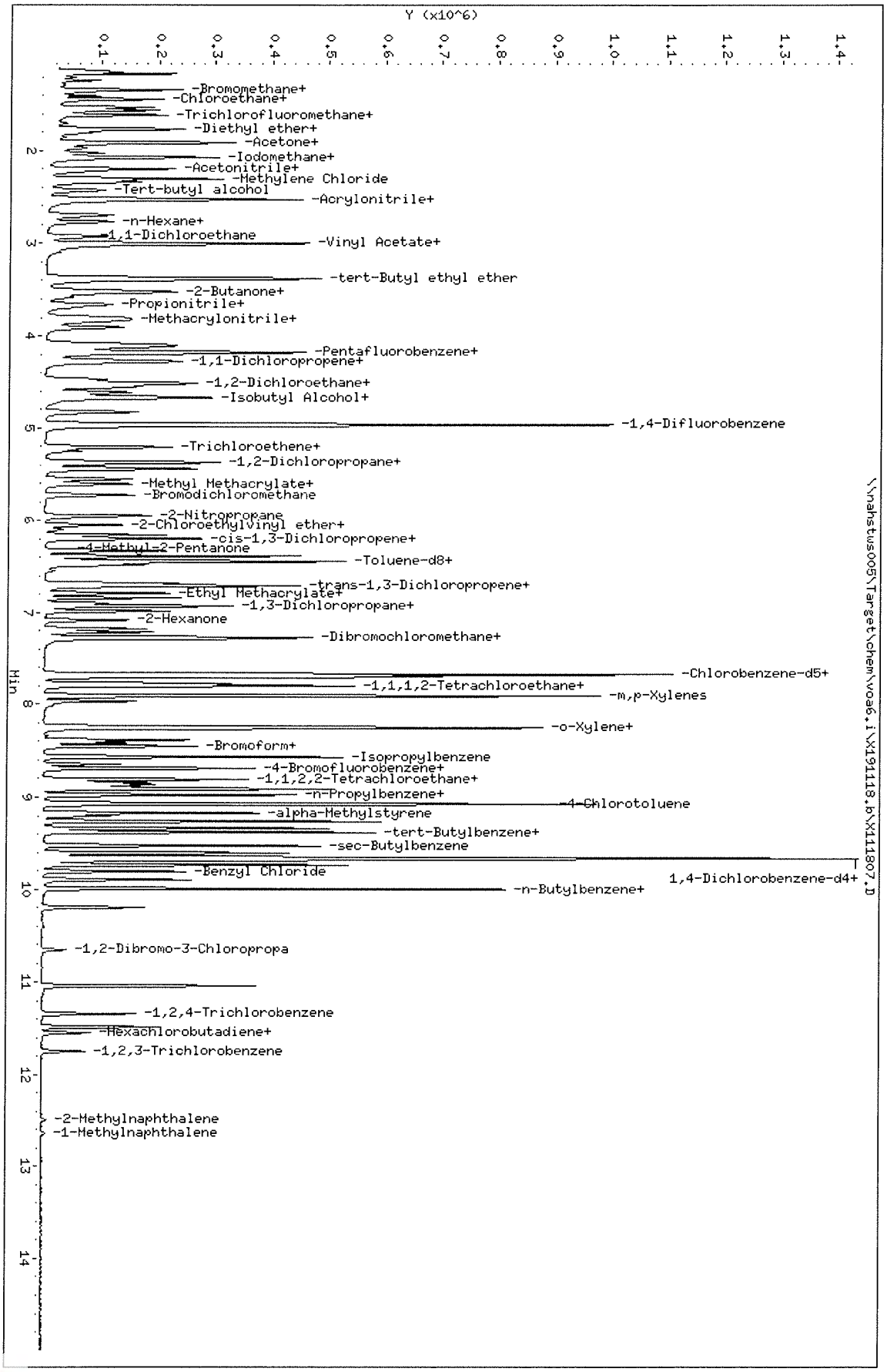
E. Title: Report – Quarterly Evaluation Report, 2nd Quarter (April–June) 2020 Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): Bhate Environmental Associates, Inc.
Recipient: U.S. Army Corps of Engineers – Tulsa District
Date: August 27, 2020
Bate Stamp: 00972826 – 00974347

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111807.D Page 2
Report Date: 06-Dec-2019 19:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
88	1,2-Dichlorobenzene	146	9.998	9.998	(1.035)	144121	20.0000	19.47
33	1,2-Dichloroethane	62	4.562	4.562	(0.918)	88277	20.0000	19.72
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	64004	20.0000	19.00
75	1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	247054	20.0000	19.45
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	157428	20.0000	19.68
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	105400	20.0000	19.28
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.002)	158049	20.0000	19.44
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	100376	20.0000	18.46
24	2-Butanone	43	3.580	3.580	(0.856)	48098	40.0000	38.07
76	2-Chlorotoluene	91	8.974	8.974	(0.929)	193547	20.0000	19.28
52	2-Hexanone	43	7.083	7.083	(0.923)	78795	40.0000	37.24
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	231980	20.0000	19.07
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	257377	20.0000	18.86
45	4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	115695	40.0000	38.33
10	Acetone	43	1.976	1.976	(0.473)	43200	40.0000	38.23
37	Benzene	78	4.512	4.512	(0.908)	250181	20.0000	19.39
74	Bromobenzene	156	8.809	8.809	(0.912)	97394	20.0000	20.09
29	Bromochloromethane	128	3.795	3.795	(0.908)	41933	20.0000	18.80
39	Bromodichloromethane	83	5.729	5.729	(1.153)	89170	20.0000	19.11
66	Bromoform	173	8.415	8.415	(1.097)	56416	20.0000	19.02
6	Bromomethane	94	1.338	1.338	(0.320)	93456	20.0000	21.54
19	Carbon Disulfide	76	2.069	2.069	(0.495)	362755	40.0000	38.21
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	90839	20.0000	18.23 (M)
59	Chlorobenzene	112	7.699	7.699	(1.004)	192384	20.0000	19.13
7	Chloroethane	64	1.403	1.403	(0.336)	46616	20.0000	17.98
28	Chloroform	83	3.910	3.910	(0.935)	121141	20.0000	18.16
3	Chloromethane	50	1.073	1.073	(0.257)	85402	20.0000	19.21
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	74754	20.0000	19.14
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	107408	20.0000	19.53
55	Dibromochloromethane	129	7.176	7.176	(0.936)	76215	20.0000	19.48
44	Dibromomethane	93	5.557	5.557	(1.118)	46676	20.0000	19.58
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	63810	20.0000	17.59
61	Ethylbenzene	106	7.799	7.799	(1.017)	101554	20.0000	19.54
91	Hexachlorobutadiene	225	11.481	11.481	(1.188)	37789	20.0000	19.03
67	Isopropylbenzene	105	8.566	8.566	(1.117)	293670	20.0000	19.08
62	m,p-Xylenes	106	7.907	7.907	(1.031)	243460	40.0000	38.83
17	Methylene Chloride	84	2.305	2.305	(0.551)	66846	20.0000	17.95
87	n-Butylbenzene	91	9.998	9.998	(1.035)	210608	20.0000	18.54
73	n-Propylbenzene	91	8.917	8.917	(0.923)	331965	20.0000	19.25
92	Naphthalene	128	11.546	11.546	(1.195)	57138	20.0000	18.96
63	o-Xylene	106	8.244	8.244	(1.075)	119876	20.0000	19.37
81	sec-Butylbenzene	105	9.526	9.526	(0.986)	278964	20.0000	18.62
64	Styrene	104	8.258	8.258	(1.077)	206802	20.0000	19.22
78	tert-Butylbenzene	119	9.339	9.339	(0.967)	208031	20.0000	19.13
56	Tetrachloroethene	164	6.933	6.933	(0.904)	68625	20.0000	18.96
50	Toluene	91	6.446	6.446	(0.840)	280019	20.0000	19.17
20	trans-1,2-Dichloroethene	96	2.535	2.535	(0.606)	63600	20.0000	18.77
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	100272	20.0000	20.00
38	Trichloroethene	130	5.206	5.206	(1.048)	77608	20.0000	19.68
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	116474	20.0000	18.23
5	Vinyl Chloride	62	1.138	1.138	(0.272)	74818	20.0000	17.83

QC Flag Legend

M - Compound response manually integrated.



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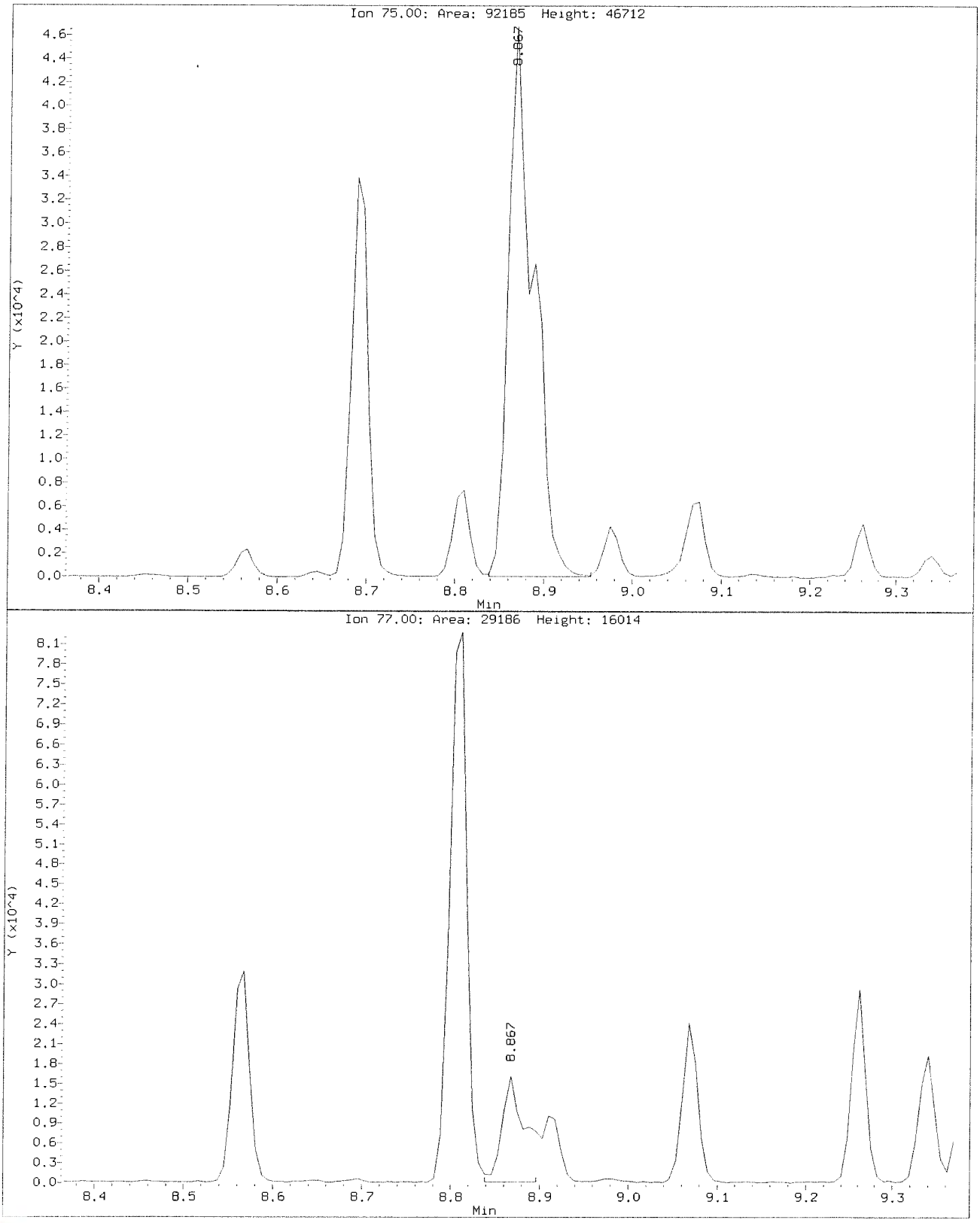
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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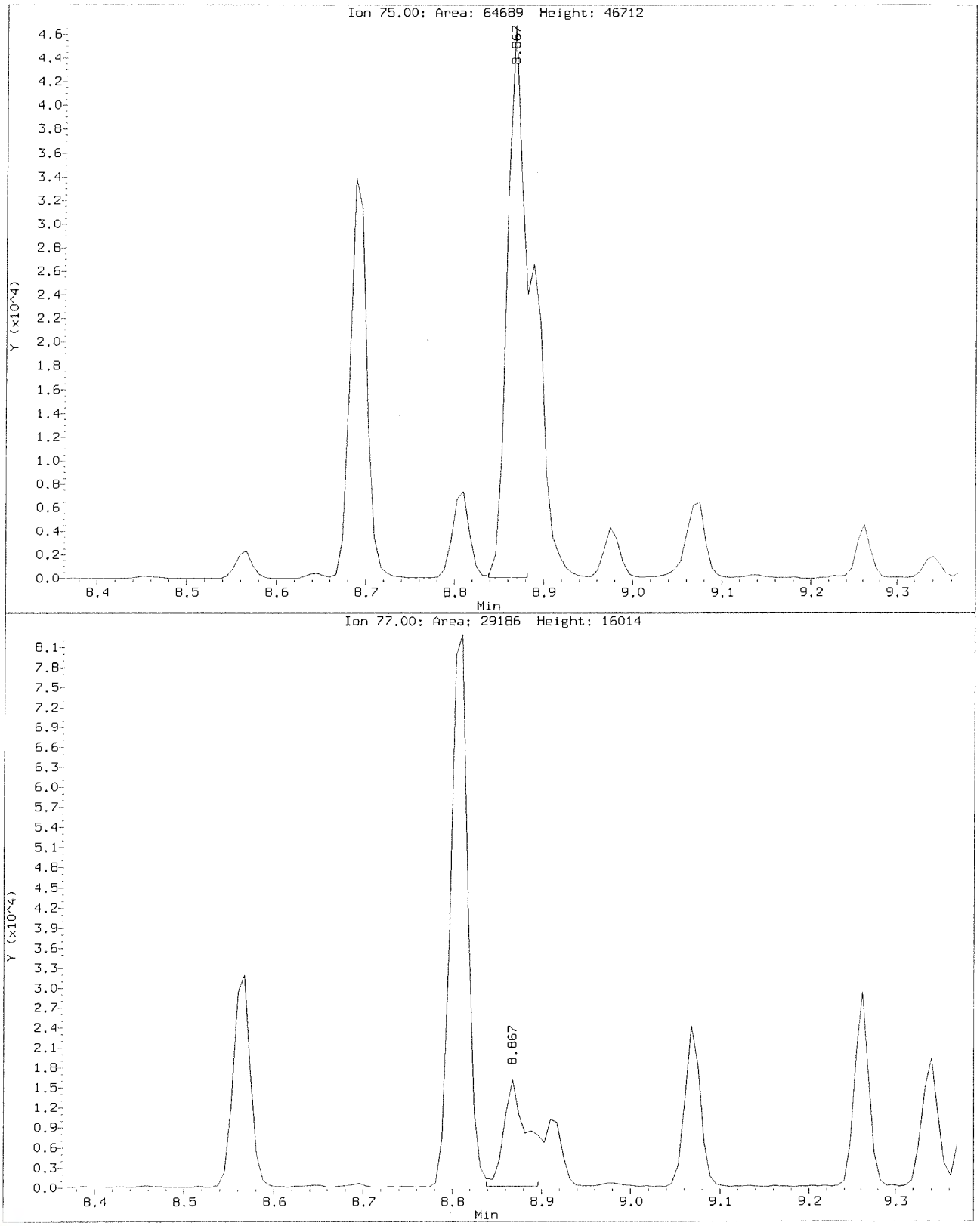

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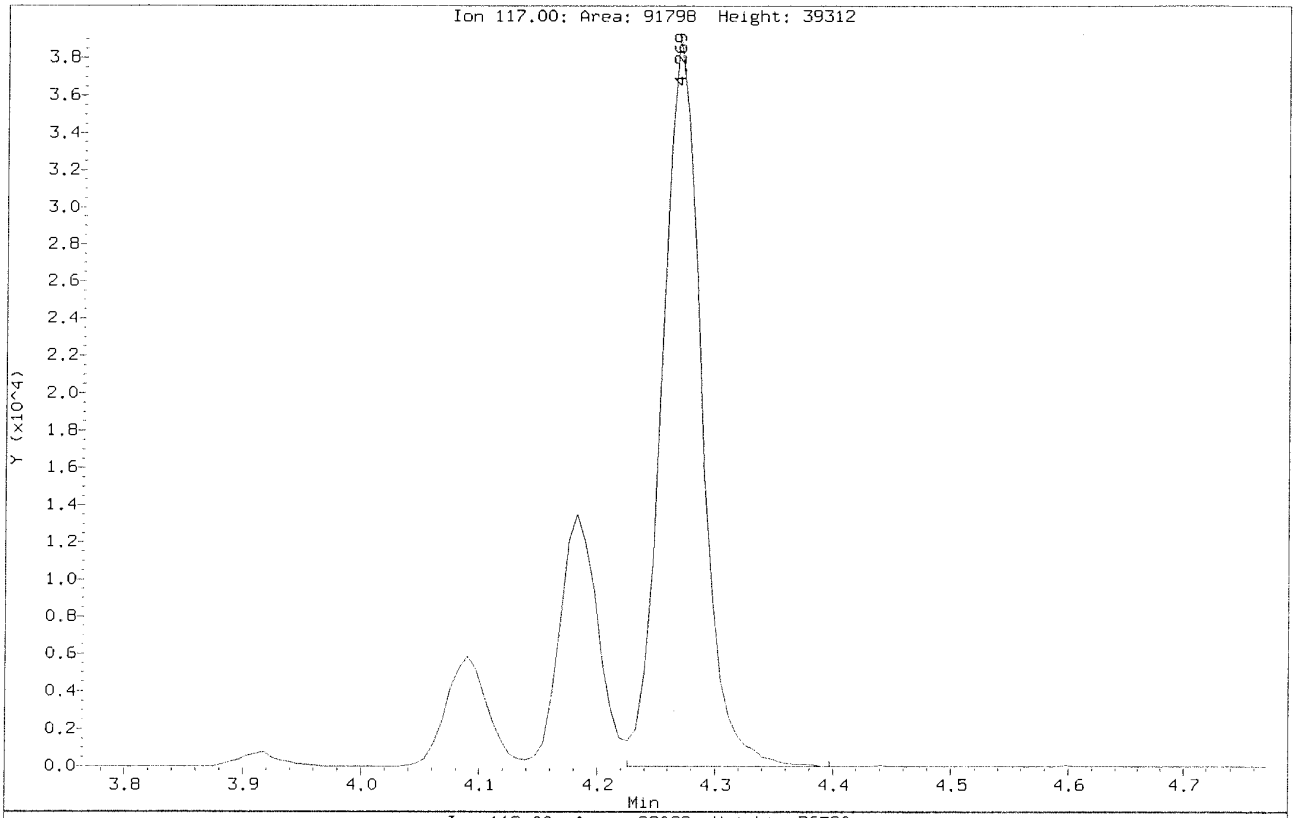
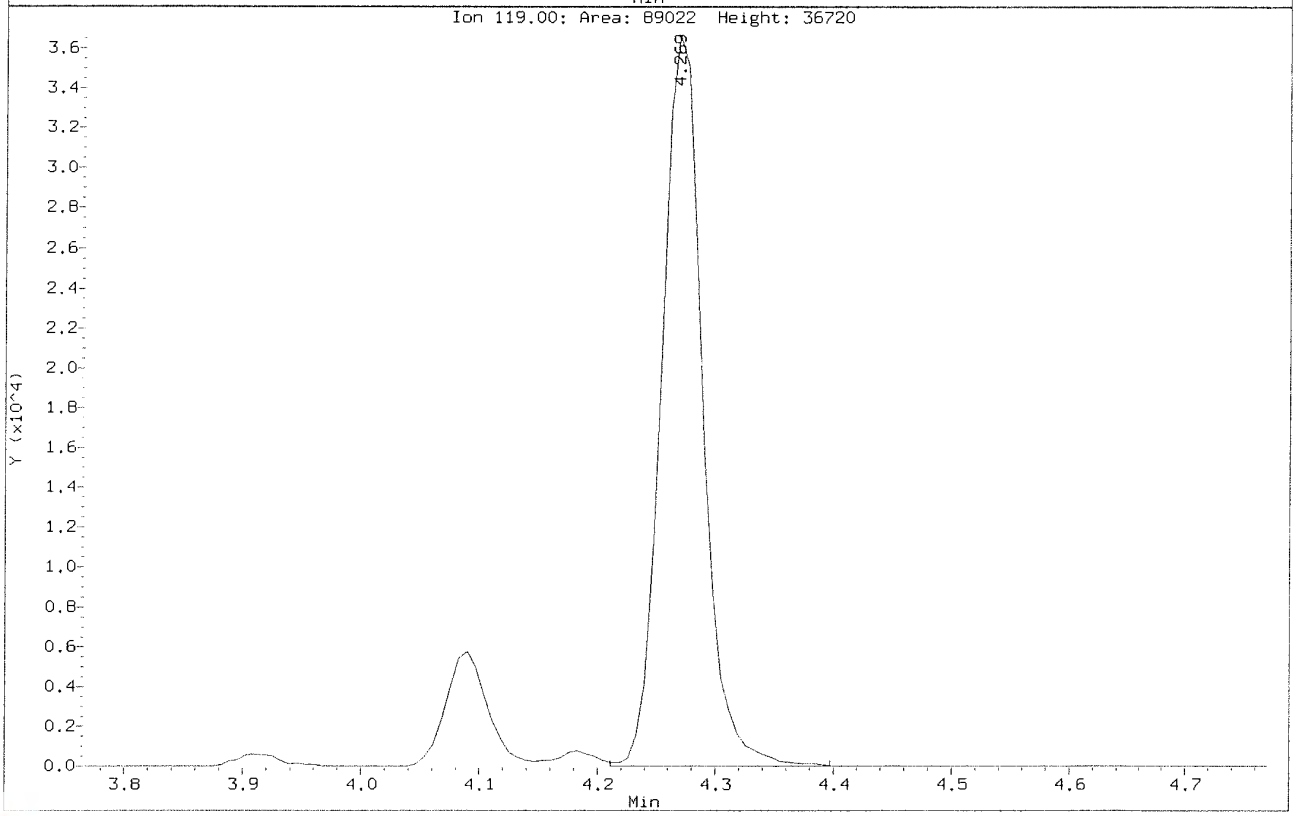
Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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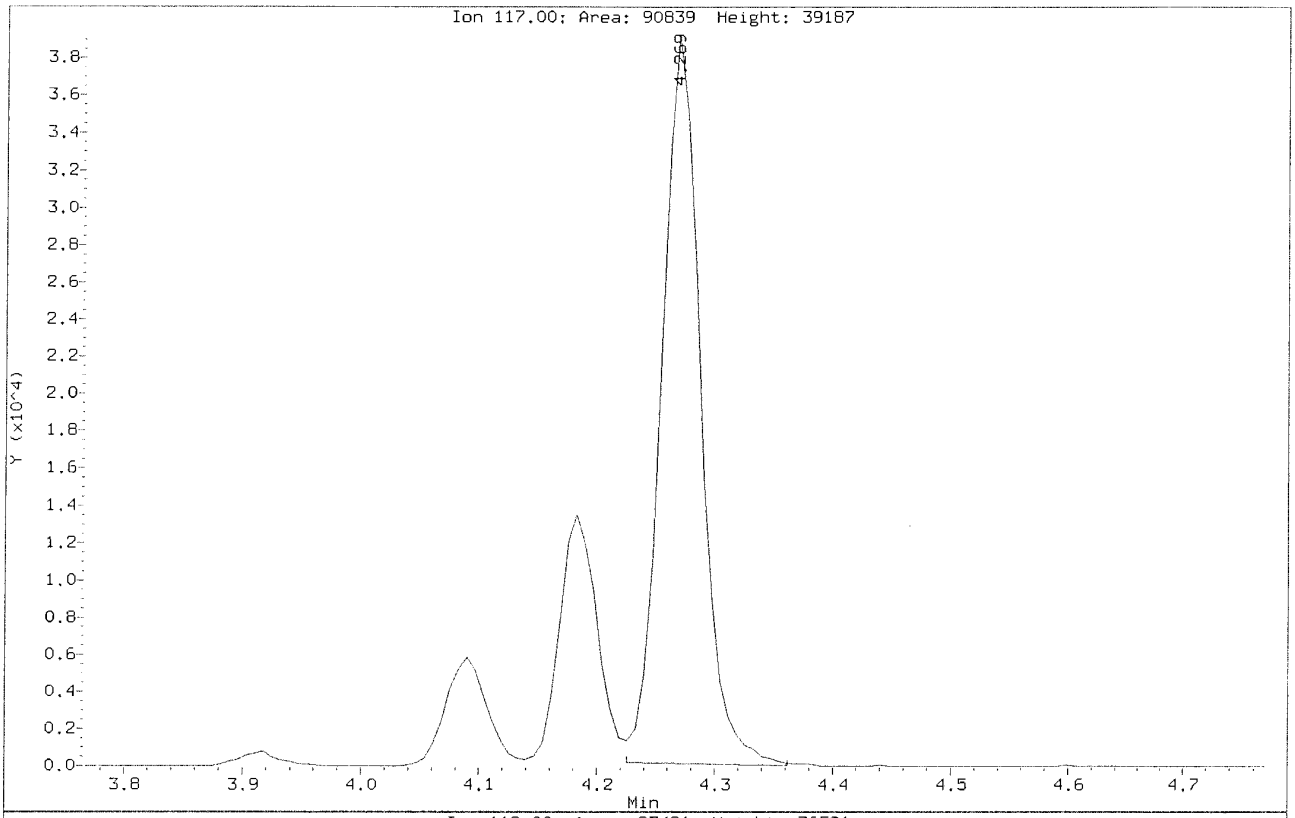
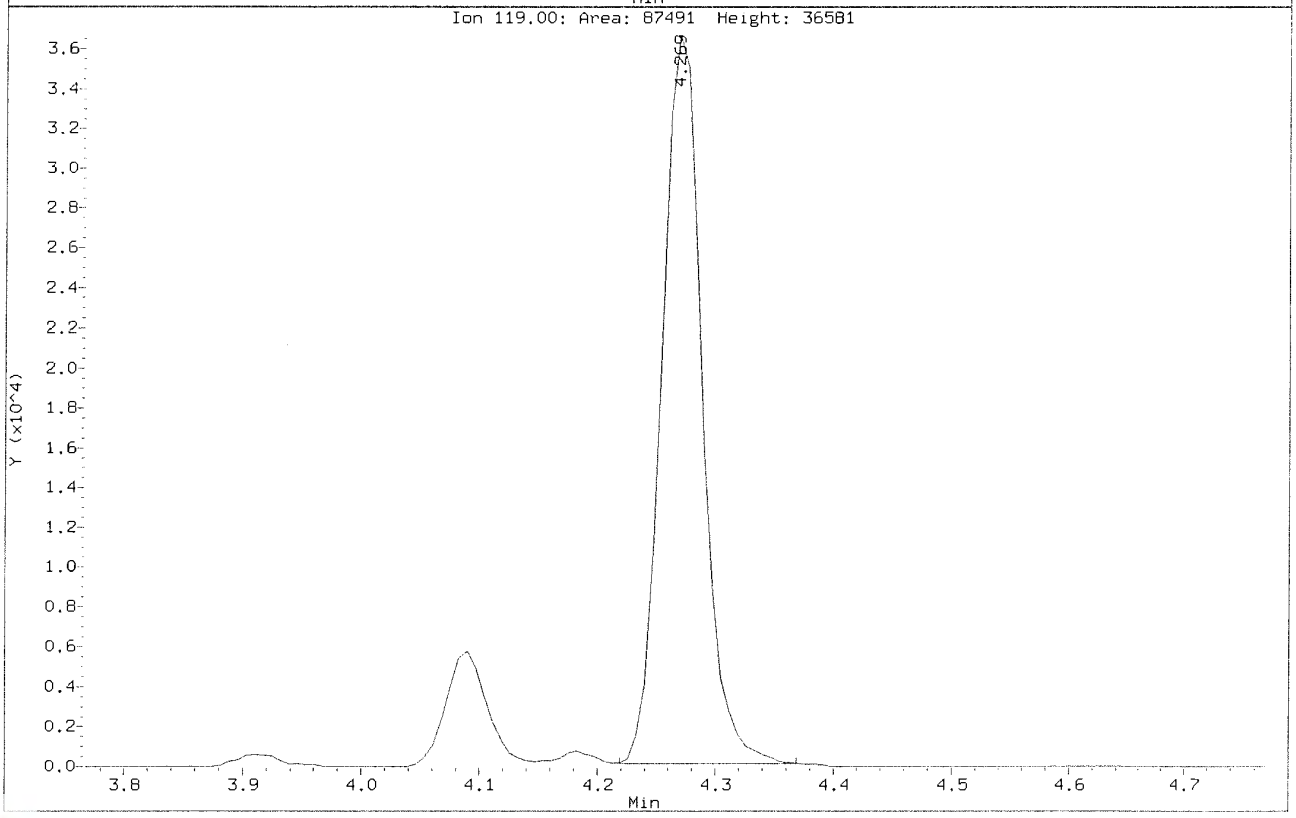
Compound: Carbon Tetrachloride
CAS Number: 56-23-5





ALS Laboratory Group

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Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

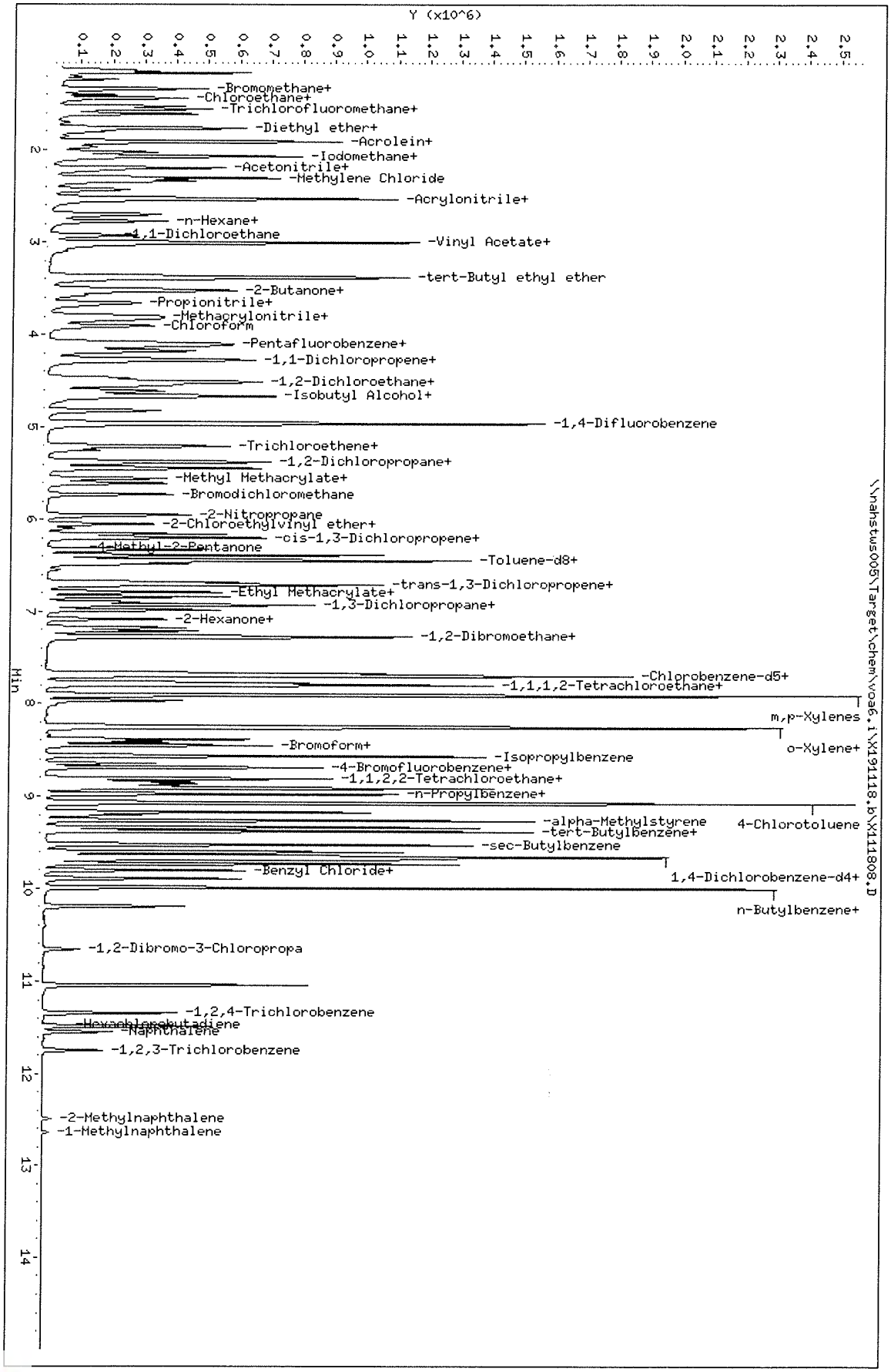
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	399282	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	548073	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	502523	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	273444	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	178006	50.0000	47.42
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	222328	50.0000	47.57
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	173990	50.0000	47.93
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	608955	50.0000	45.99
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	184913	50.0000	50.72
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	268813	50.0000	49.90
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	183844	50.0000	47.81
138 Freon TF	101	1.911	1.911	(0.457)	183115	50.0000	52.67
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	128481	50.0000	48.90
22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	283343	50.0000	48.77
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	171500	50.0000	50.68
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	220463	50.0000	49.86
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	52554	50.0000	51.69
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	157820	50.0000	48.44(M)
90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	115181	50.0000	50.00
79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	661580	50.0000	50.99
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	21800	50.0000	51.36
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	174730	50.0000	49.57

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111808.D Page 2
Report Date: 06-Dec-2019 19:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
88	1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	363670	50.0000	50.11
33	1,2-Dichloroethane	62	4.562	4.562	(0.918)	219760	50.0000	50.51
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	161607	50.0000	49.36
75	1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	647527	50.0000	52.01
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.993)	398343	50.0000	50.79
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	259218	50.0000	48.60
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	400593	50.0000	50.27
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	257082	50.0000	48.75
24	2-Butanone	43	3.573	3.573	(0.854)	116745	100.000	95.28
76	2-Chlorotoluene	91	8.974	8.974	(0.928)	506692	50.0000	51.50
52	2-Hexanone	43	7.090	7.090	(0.924)	193251	100.000	93.61
77	4-Chlorotoluene	91	9.075	9.075	(0.939)	603806	50.0000	50.63
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	703086	50.0000	52.54
45	4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	284508	100.000	96.62
10	Acetone	43	1.976	1.976	(0.473)	103091	100.000	99.72
37	Benzene	78	4.512	4.512	(0.908)	637799	50.0000	50.87
74	Bromobenzene	156	8.809	8.809	(0.911)	240153	50.0000	50.53
29	Bromochloromethane	128	3.795	3.795	(0.908)	105150	50.0000	48.61
39	Bromodichloromethane	83	5.729	5.729	(1.153)	226127	50.0000	49.85
66	Bromoform	173	8.416	8.416	(1.097)	143798	50.0000	48.09
6	Bromomethane	94	1.338	1.338	(0.320)	215480	50.0000	54.47
19	Carbon Disulfide	76	2.069	2.069	(0.495)	951783	100.000	103.39
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	247524	50.0000	51.11(M)
59	Chlorobenzene	112	7.699	7.699	(1.004)	485055	50.0000	49.44
7	Chloroethane	64	1.403	1.403	(0.336)	124291	50.0000	49.44
28	Chloroform	83	3.910	3.910	(0.935)	300015	50.0000	46.39
3	Chloromethane	50	1.073	1.073	(0.257)	215753	50.0000	49.75
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	187629	50.0000	49.55
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	273432	50.0000	51.15
55	Dibromochloromethane	129	7.176	7.176	(0.936)	191497	50.0000	50.17
44	Dibromomethane	93	5.557	5.557	(1.118)	115707	50.0000	49.94
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	186161	50.0000	51.14
61	Ethylbenzene	106	7.799	7.799	(1.017)	257283	50.0000	50.75
91	Hexachlorobutadiene	225	11.488	11.488	(1.188)	99881	50.0000	52.17
67	Isopropylbenzene	105	8.566	8.566	(1.117)	765390	50.0000	50.97
62	m,p-Xylenes	106	7.907	7.907	(1.031)	625932	100.000	102.32
17	Methylene Chloride	84	2.305	2.305	(0.551)	168044	50.0000	46.54
87	n-Butylbenzene	91	9.999	9.999	(1.034)	591076	50.0000	53.08
73	n-Propylbenzene	91	8.917	8.917	(0.922)	884464	50.0000	52.32
92	Naphthalene	128	11.546	11.546	(1.194)	142473	50.0000	48.22
63	o-Xylene	106	8.244	8.244	(1.075)	301622	50.0000	49.96
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	772064	50.0000	52.58
64	Styrene	104	8.258	8.258	(1.077)	530825	50.0000	50.56
78	tert-Butylbenzene	119	9.340	9.340	(0.966)	550071	50.0000	51.60
56	Tetrachloroethene	164	6.933	6.933	(0.904)	176674	50.0000	50.03
50	Toluene	91	6.446	6.446	(0.840)	709296	50.0000	49.77
20	trans-1,2-Dichloroethene	96	2.527	2.527	(0.604)	163591	50.0000	49.79
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	247921	50.0000	50.89
38	Trichloroethene	130	5.206	5.206	(1.048)	196625	50.0000	51.29
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	328789	50.0000	53.08
5	Vinyl Chloride	62	1.138	1.138	(0.272)	201503	50.0000	49.51

QC Flag Legend

M - Compound response manually integrated.



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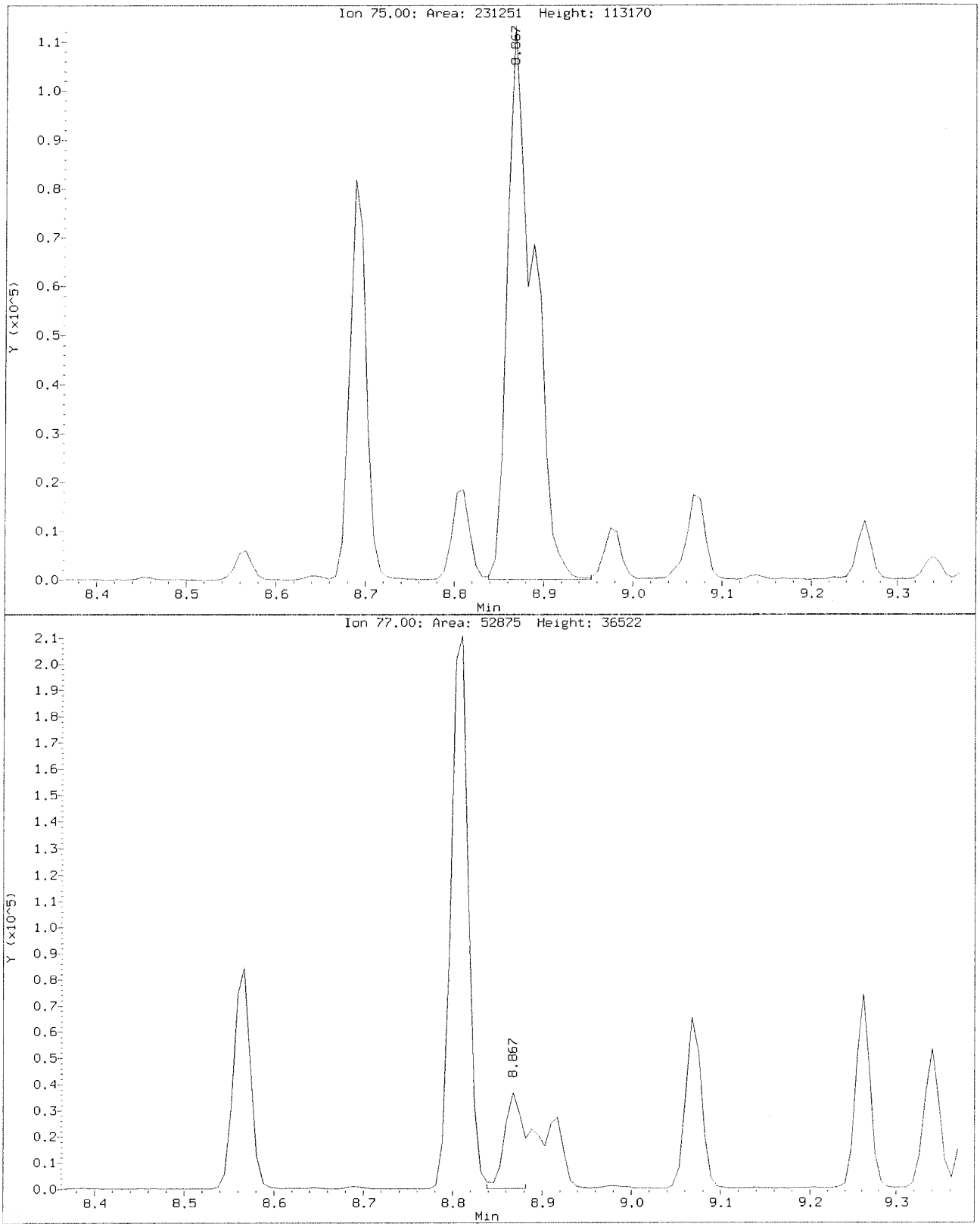
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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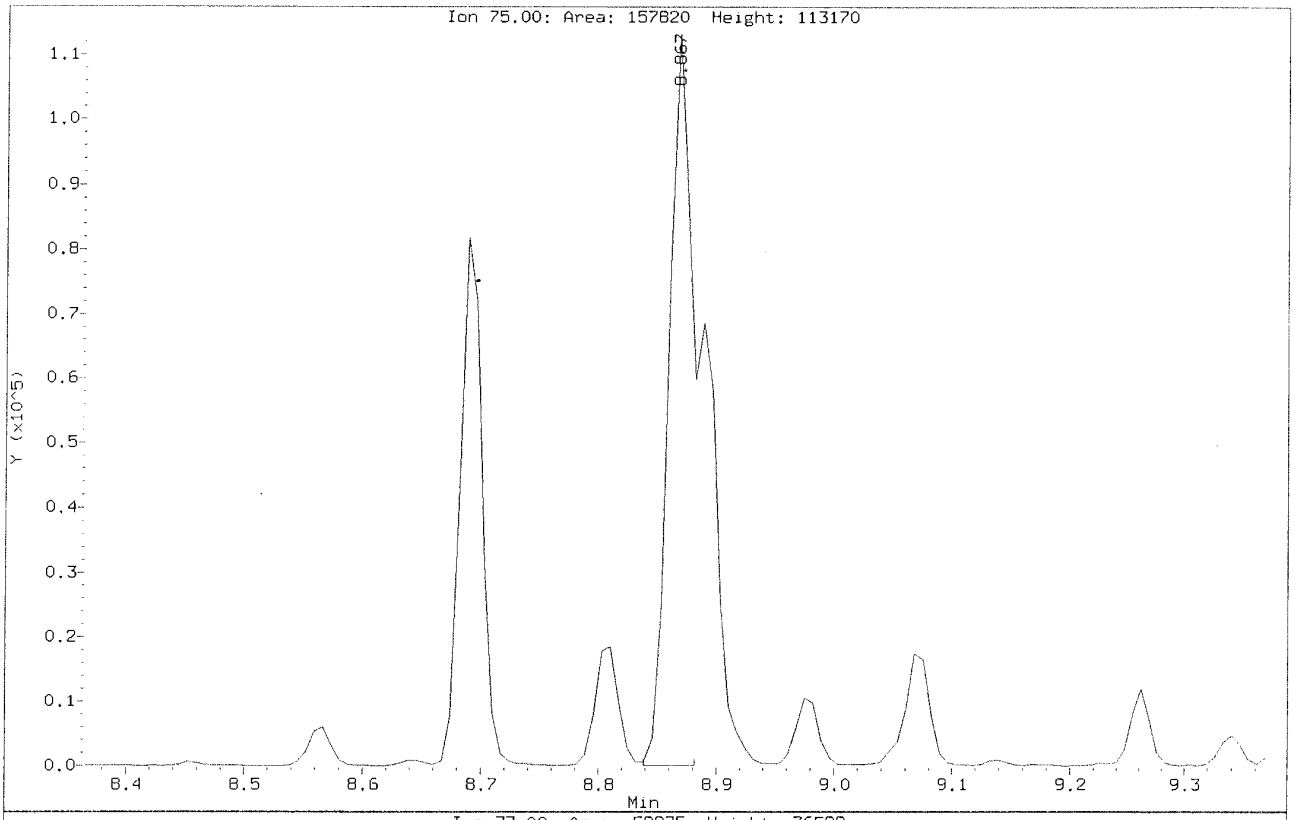
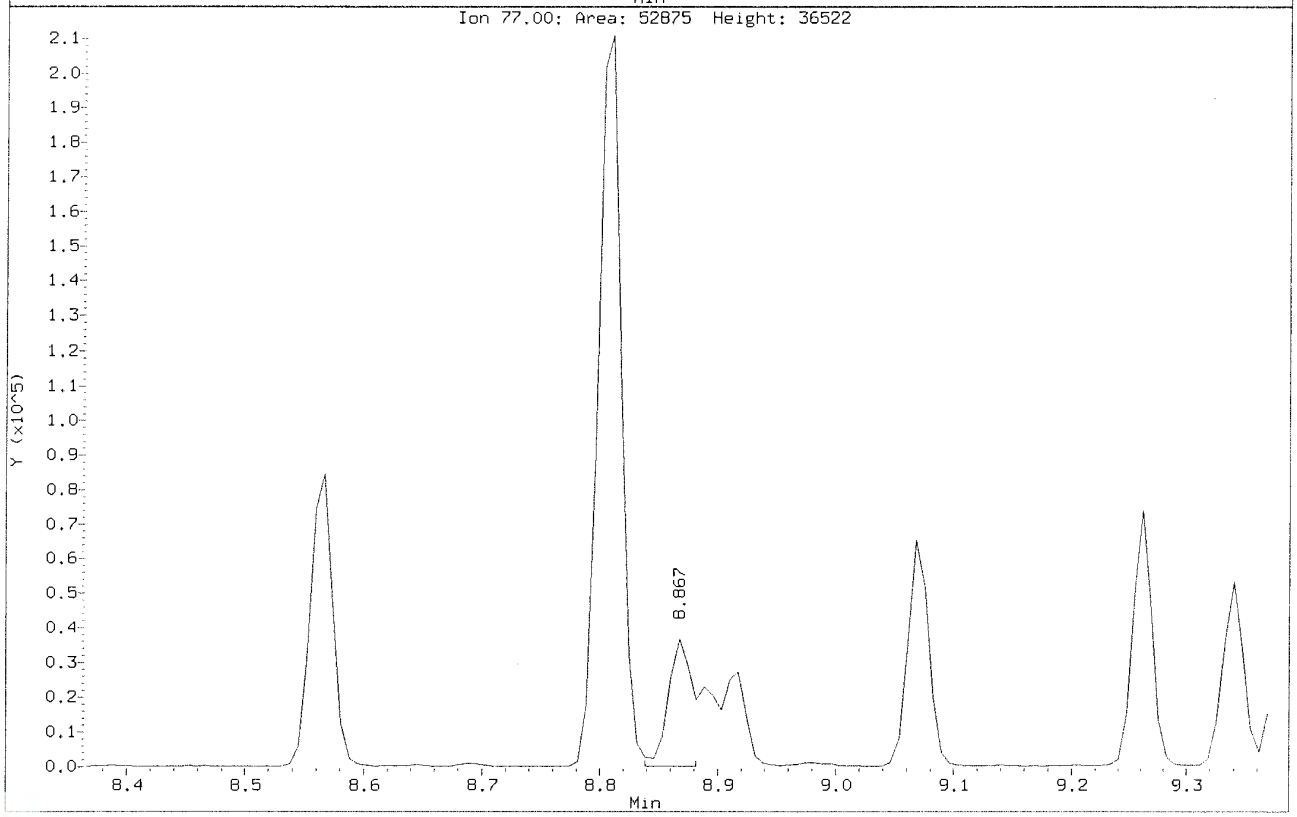
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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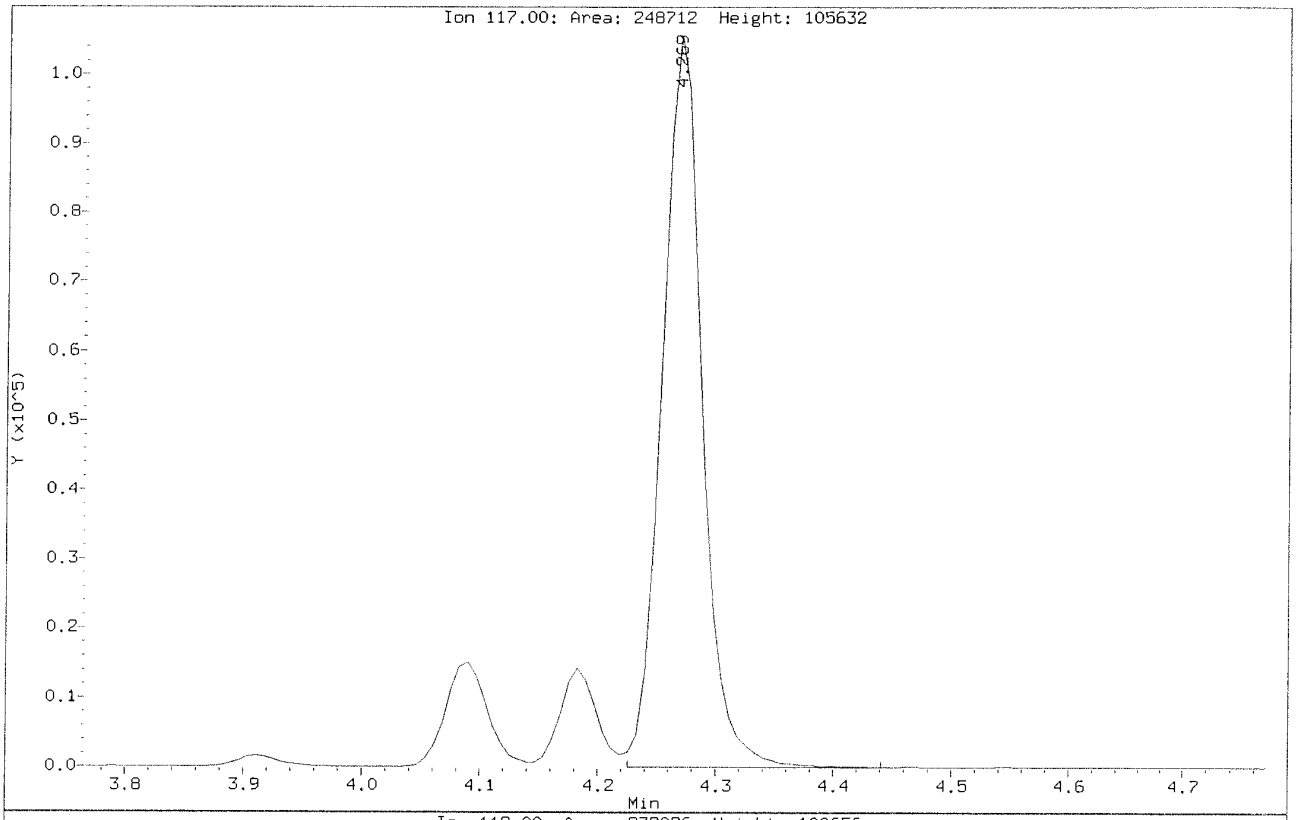
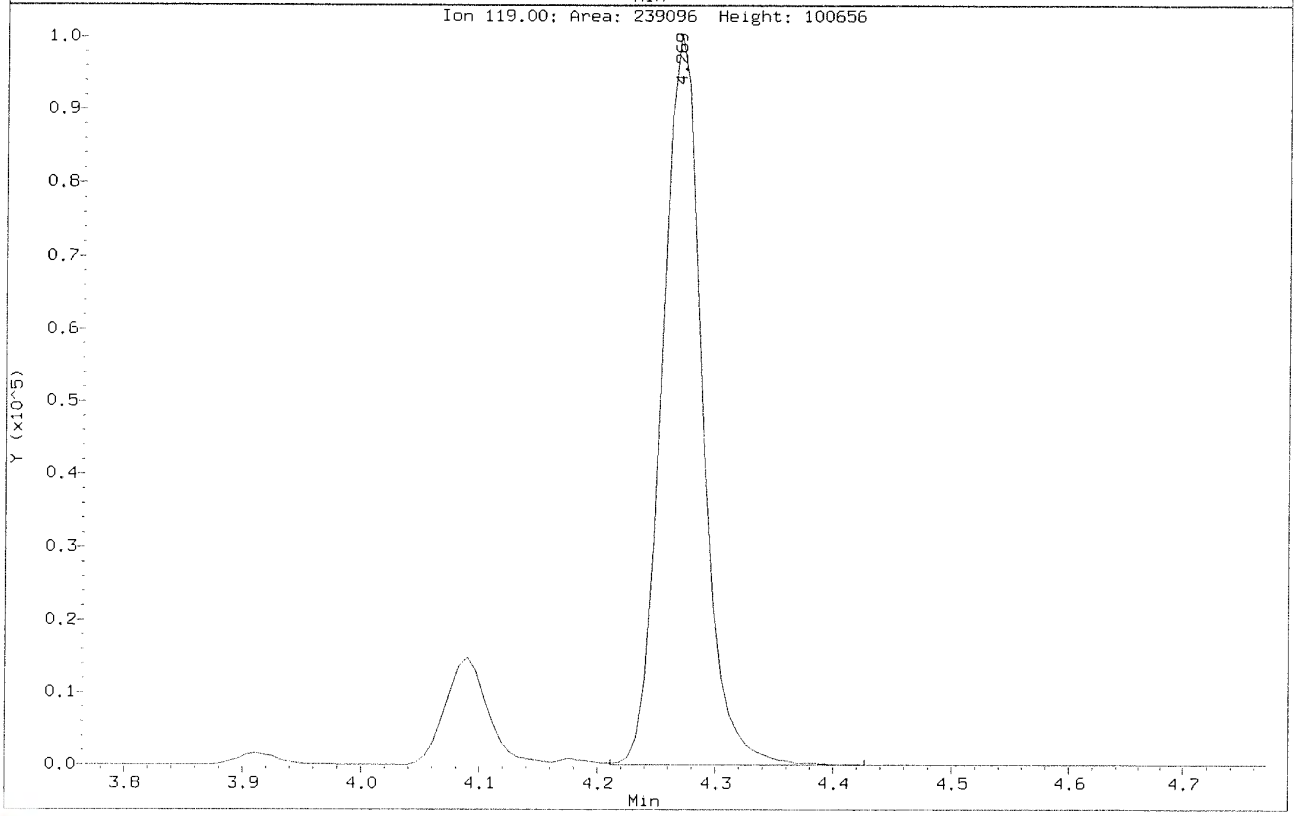
Injection Date: 18-NOV-2019 16:35
Instrument: voa6.i
Client Sample ID: VSTD050

Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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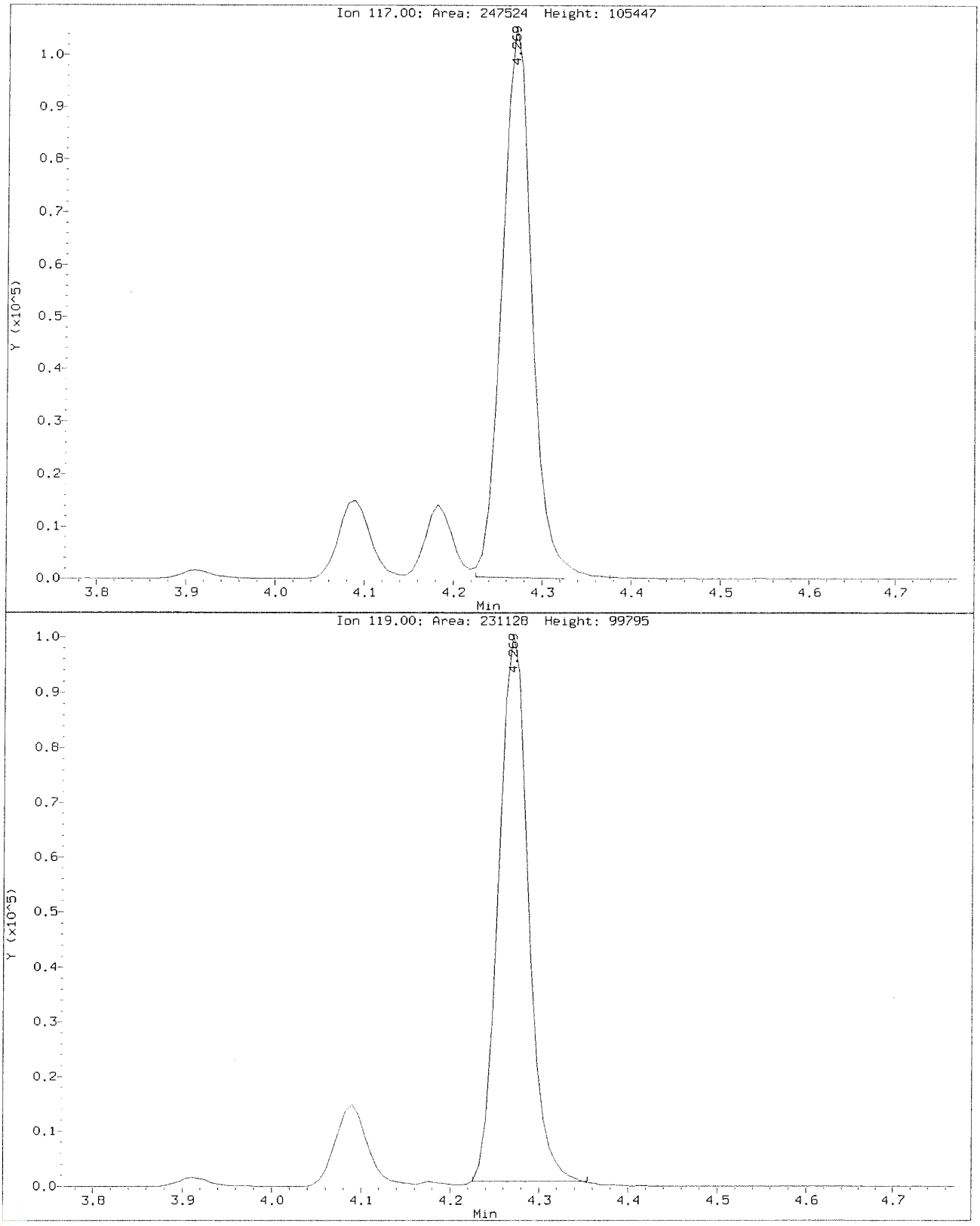
Injection Date: 18-NOV-2019 16:35
Instrument: voa6.i
Client Sample ID: VSTD050

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



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Data file : \\nahstws005\Target\chem\voa6.i\X191118.b\X111809.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 18-NOV-2019 16:59
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191118.b\8260W.m
Meth Date : 06-Dec-2019 19:56 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

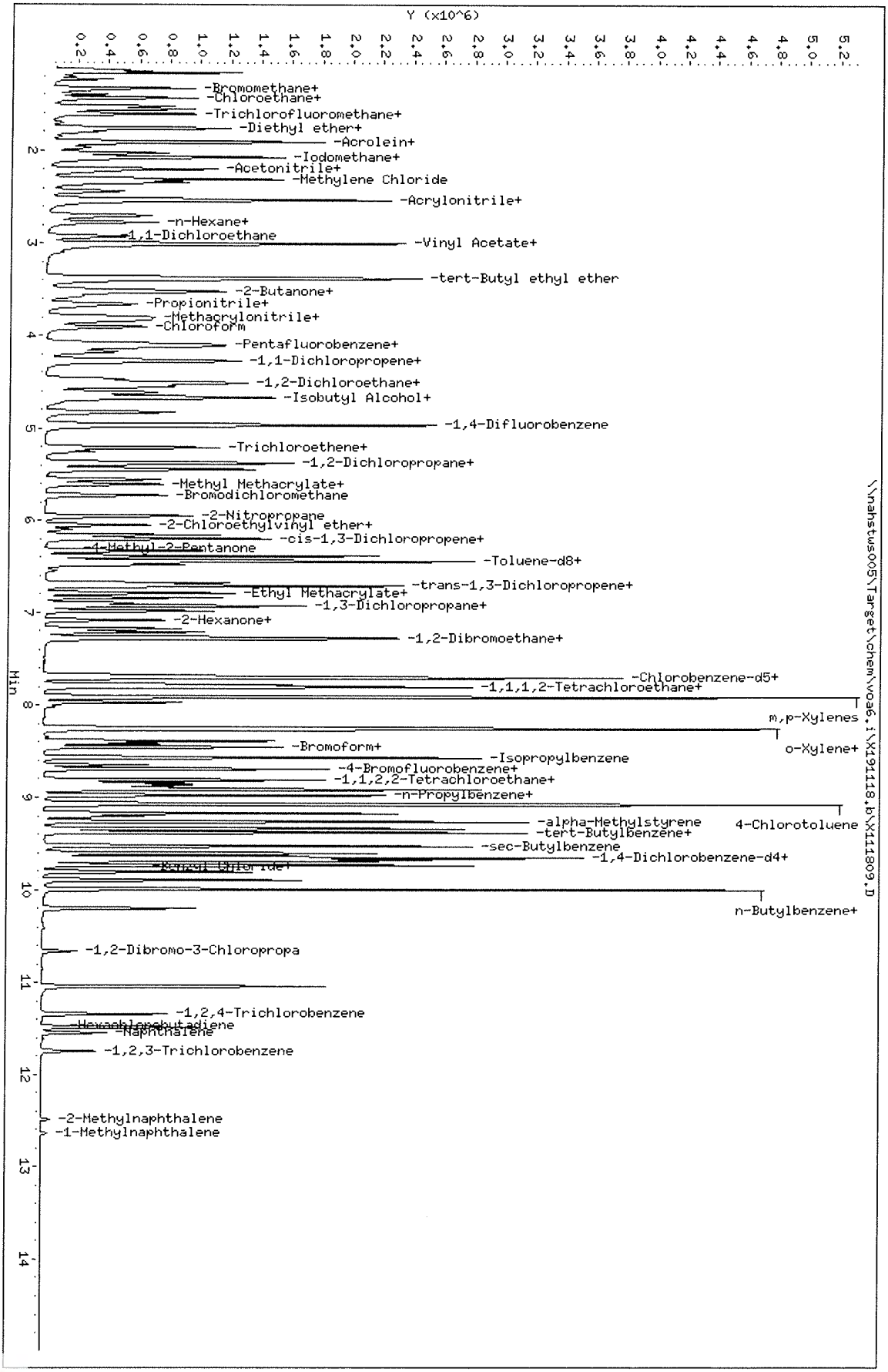
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	392699	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	554744	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	502006	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	278931	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	364646	100.000	97.98
$ 69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	465570	100.000	99.26
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	354918	100.000	99.03
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1251601	100.000	94.62
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	370675	100.000	101.77
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	531073	100.000	100.24
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	374065	100.000	95.36
138 Freon TF	101	1.911	1.911	(0.457)	363001	100.000	106.17
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	259169	100.000	98.76
22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	562516	100.000	98.44
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	336639	100.000	101.15
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	435155	100.000	97.24
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	102660	100.000	99.24
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	314678	100.000	94.68(M)
90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	224252	100.000	95.44
79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	1360930	100.000	102.82
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	42468	100.000	98.40
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	348356	100.000	98.94

						AMOUNTS	
	QUANT SIG					CAL-AMT	ON-COL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	740257	100.000	99.99
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	440676	100.000	100.06
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	322033	100.000	97.17
75 1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	1326043	100.000	104.41
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	793024	100.000	99.13
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	523367	100.000	98.23
84 1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	805891	100.000	99.14
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	505741	100.000	97.52
24 2-Butanone	43	3.580	3.580	(0.856)	231090	200.000	191.78
76 2-Chlorotoluene	91	8.974	8.974	(0.928)	1019206	100.000	101.56
52 2-Hexanone	43	7.090	7.090	(0.924)	404339	200.000	196.07
77 4-Chlorotoluene	91	9.074	9.074	(0.939)	1244013	100.000	102.27
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	1420650	100.000	104.09
45 4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	584699	200.000	198.78
10 Acetone	43	1.976	1.976	(0.473)	202207	200.000	202.71(A)
37 Benzene	78	4.519	4.519	(0.909)	1259183	100.000	99.22
74 Bromobenzene	156	8.809	8.809	(0.911)	477901	100.000	98.58
29 Bromochloromethane	128	3.795	3.795	(0.908)	204995	100.000	96.36
39 Bromodichloromethane	83	5.729	5.729	(1.153)	453036	100.000	98.68
66 Bromoform	173	8.415	8.415	(1.097)	293256	100.000	97.14
6 Bromomethane	94	1.331	1.331	(0.318)	396733	100.000	104.04
19 Carbon Disulfide	76	2.069	2.069	(0.495)	1866170	200.000	206.12(A)
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	490954	100.000	100.15(H)
59 Chlorobenzene	112	7.699	7.699	(1.004)	969904	100.000	98.96
7 Chloroethane	64	1.396	1.396	(0.334)	244234	100.000	98.78
28 Chloroform	83	3.910	3.910	(0.935)	592217	100.000	93.11
3 Chloromethane	50	1.073	1.073	(0.257)	420936	100.000	98.51
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	373378	100.000	100.25
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	548280	100.000	101.34
55 Dibromochloromethane	129	7.176	7.176	(0.936)	387071	100.000	101.53
44 Dibromomethane	93	5.557	5.557	(1.118)	228649	100.000	97.50
2 Dichlorodifluoromethane	85	0.973	0.973	(0.233)	359790	100.000	99.65
61 Ethylbenzene	106	7.799	7.799	(1.017)	511284	100.000	100.96
91 Hexachlorobutadiene	225	11.488	11.488	(1.188)	192455	100.000	99.01
67 Isopropylbenzene	105	8.566	8.566	(1.117)	1550450	100.000	103.37
62 m,p-Xylenes	106	7.907	7.907	(1.031)	1262031	200.000	206.53(A)
17 Methylene Chloride	84	2.305	2.305	(0.551)	333987	100.000	94.05
87 n-Butylbenzene	91	9.999	9.999	(1.034)	1214189	100.000	106.90
73 n-Propylbenzene	91	8.917	8.917	(0.922)	1771664	100.000	102.75
92 Naphthalene	128	11.546	11.546	(1.194)	281768	100.000	93.49
63 o-Xylene	106	8.244	8.244	(1.075)	610719	100.000	101.26
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	1561099	100.000	104.22
64 Styrene	104	8.258	8.258	(1.077)	1077784	100.000	102.77
78 tert-Butylbenzene	119	9.340	9.340	(0.966)	1121644	100.000	103.15
56 Tetrachloroethene	164	6.933	6.933	(0.904)	341567	100.000	96.83
50 Toluene	91	6.446	6.446	(0.840)	1413996	100.000	99.32
20 trans-1,2-Dichloroethene	96	2.527	2.527	(0.604)	324394	100.000	100.39
51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	504686	100.000	102.35
38 Trichloroethene	130	5.206	5.206	(1.048)	388311	100.000	100.09
8 Trichlorofluoromethane	101	1.560	1.560	(0.373)	647137	100.000	106.23
5 Vinyl Chloride	62	1.138	1.138	(0.272)	400884	100.000	100.16

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



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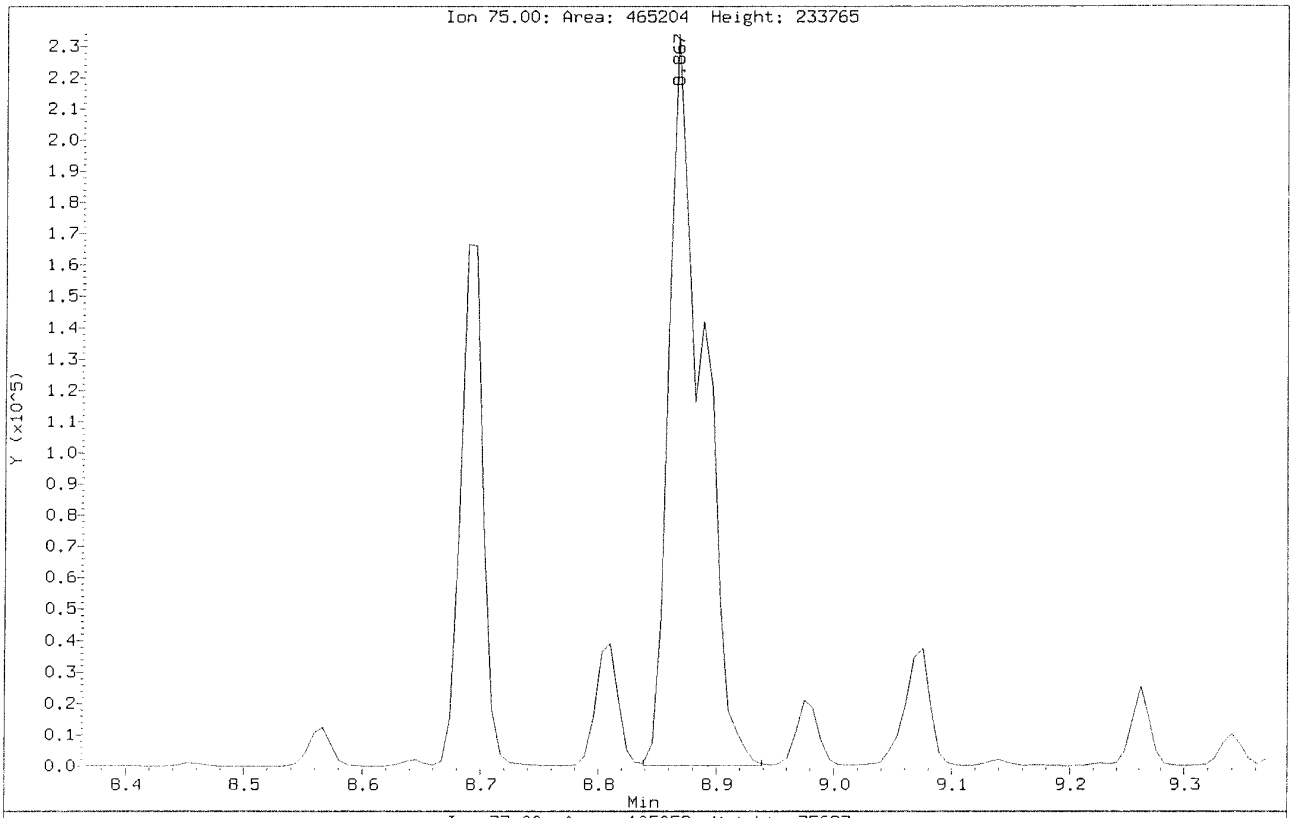
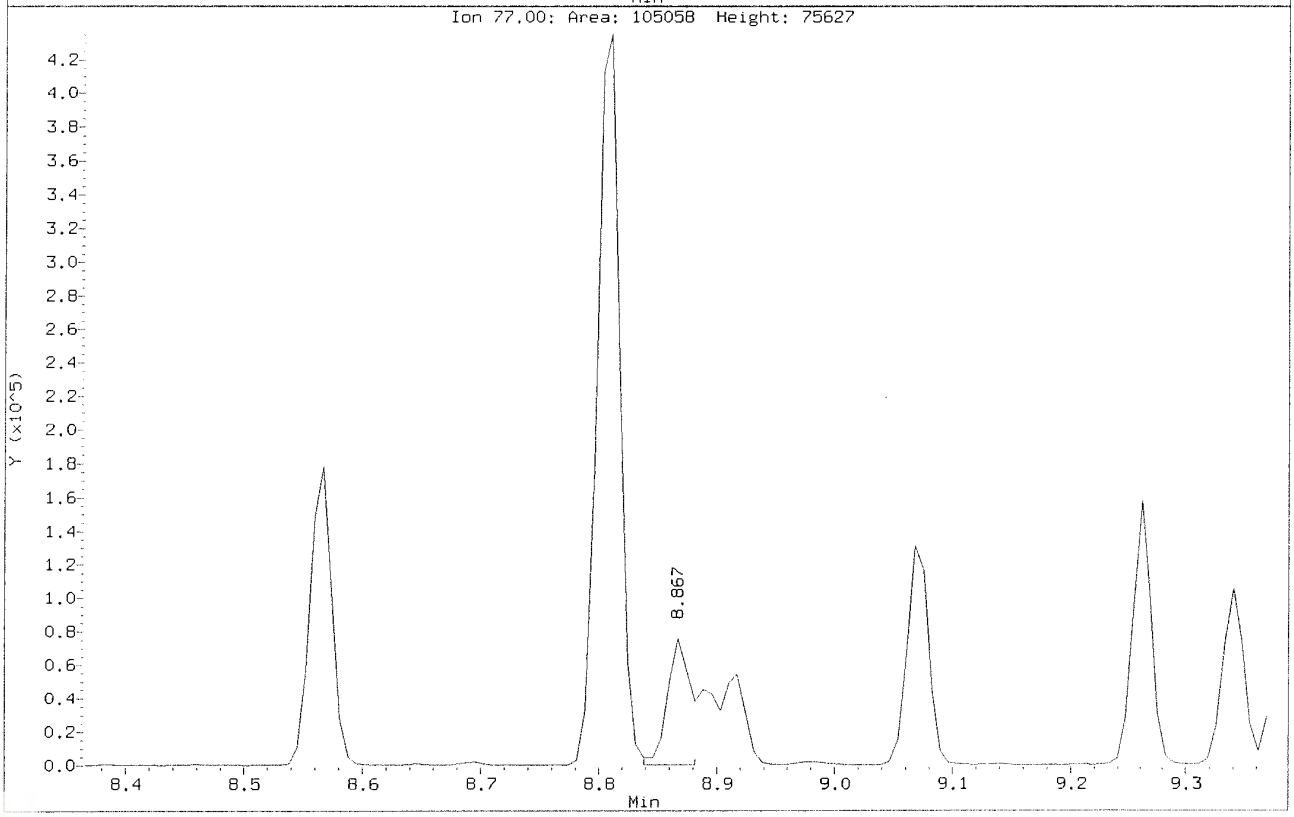
Date : 18-NOV-2019 16:59
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\BEFORE\X111809.D
Injection Date: 18-NOV-2019 16:59
Instrument: voa6.i
Client Sample ID: VSTD100

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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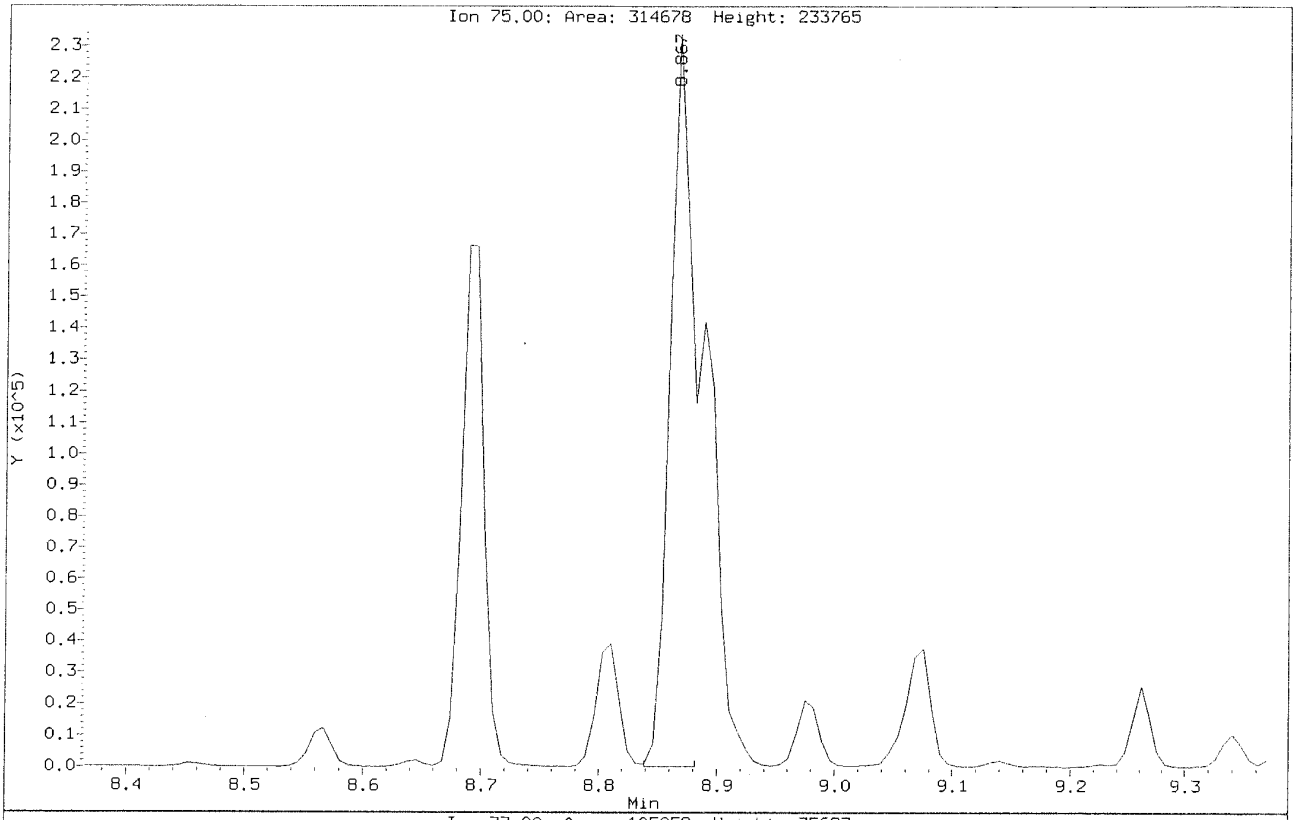
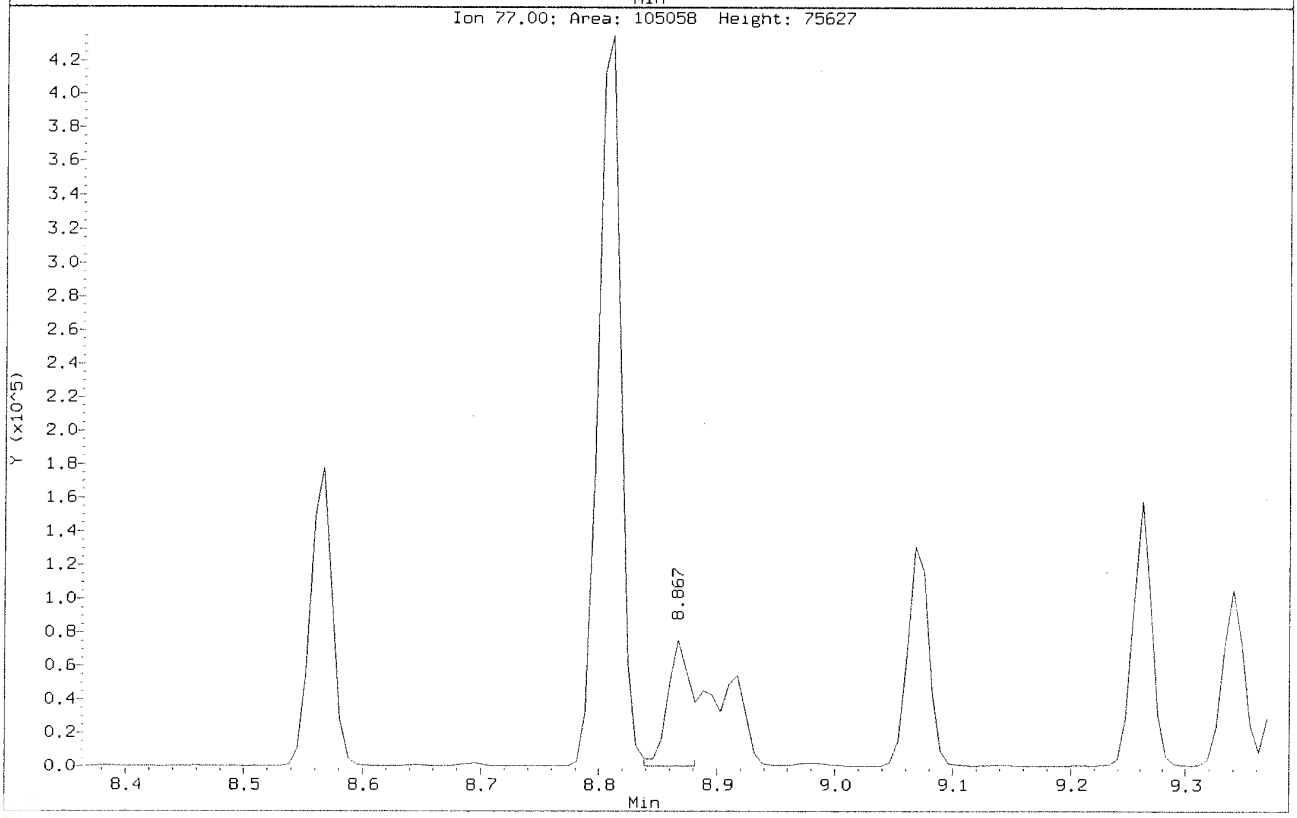
Instrument: voa6.i
Client Sample ID: VSTD100

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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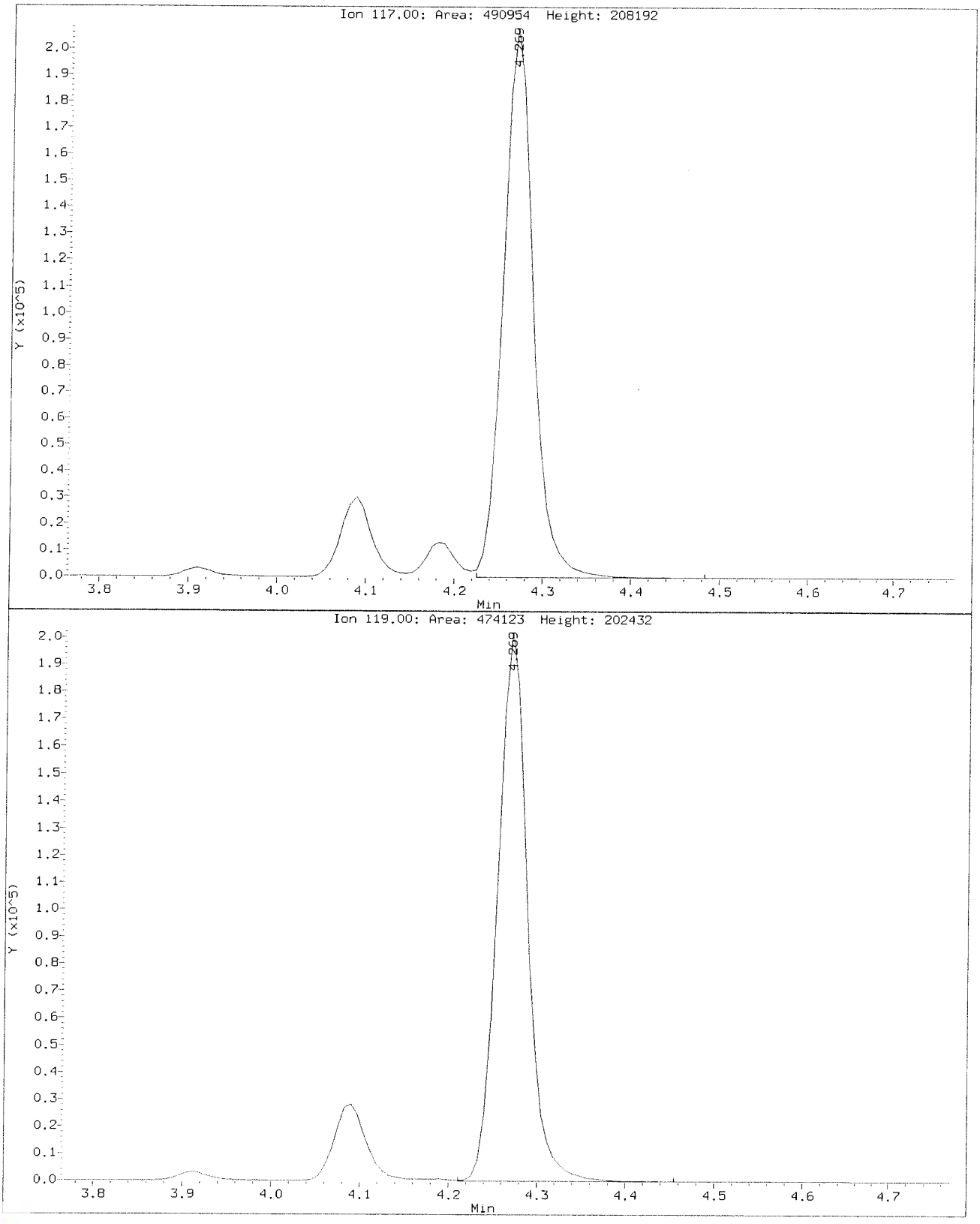
Injection Date: 18-NOV-2019 16:59
Instrument: voa6.i
Client Sample ID: VSTD100

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



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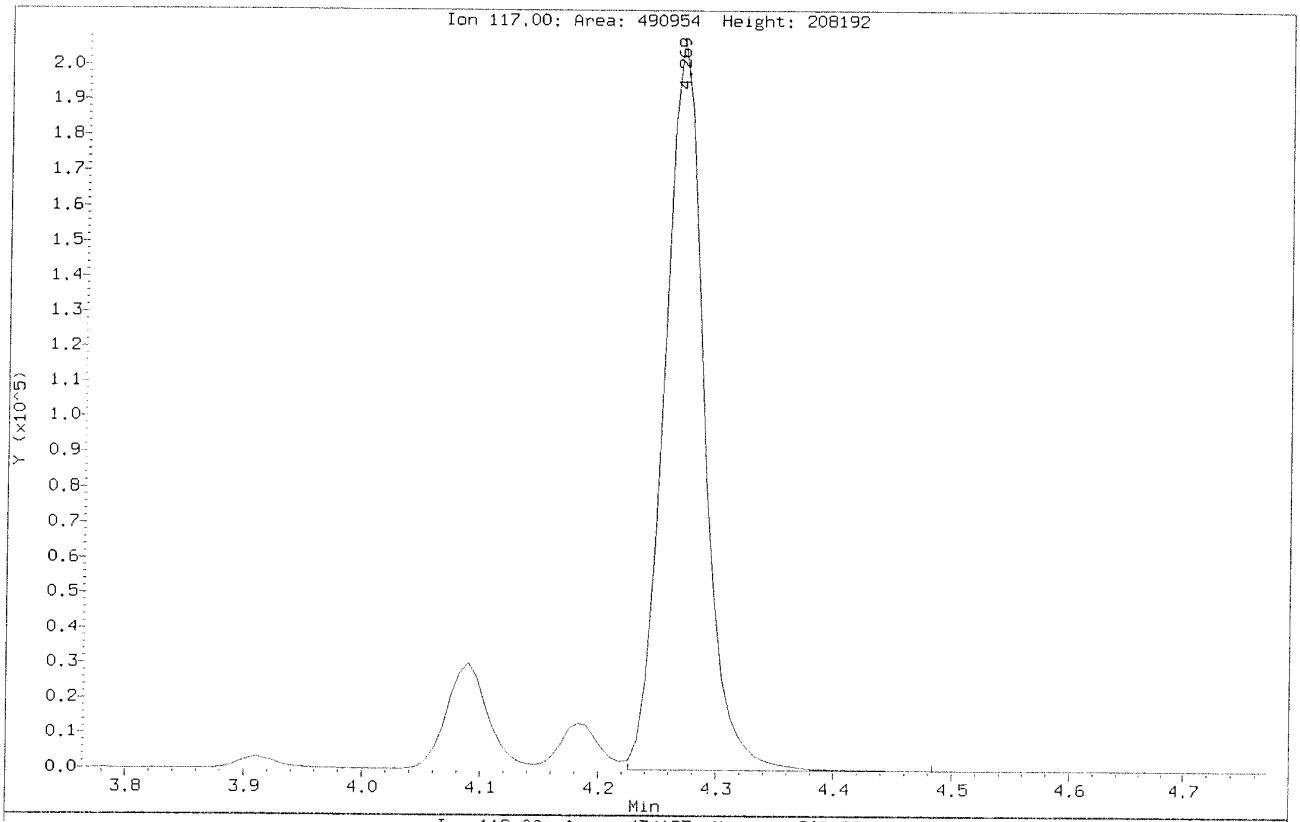
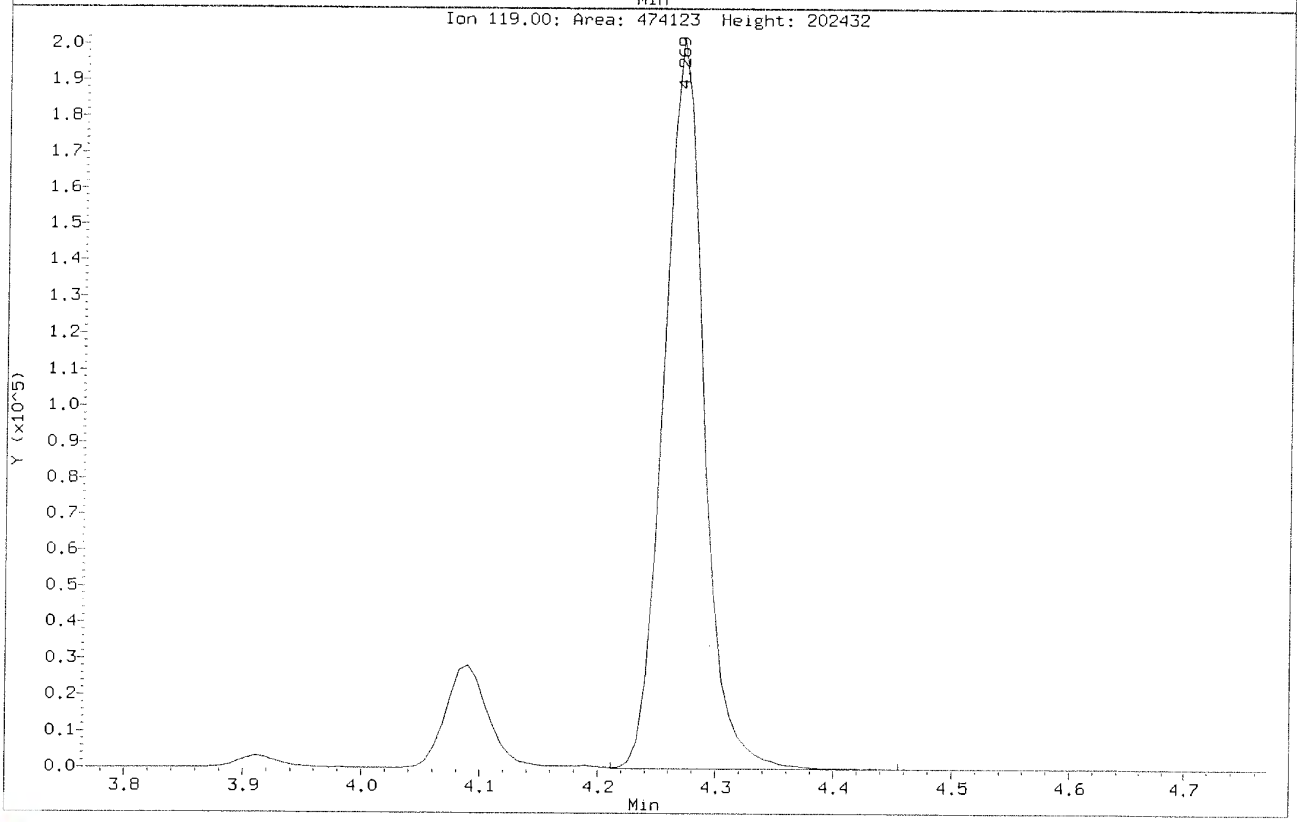
Injection Date: 18-NOV-2019 16:59
Instrument: voa6.i
Client Sample ID: VSTD100

Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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Data file : \\nahstws005\Target\chem\voa6.i\X191118.b\X111810.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 18-NOV-2019 17:22
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191118.b\8260W.m
Meth Date : 06-Dec-2019 19:56 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:59 Cal File: X111809.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

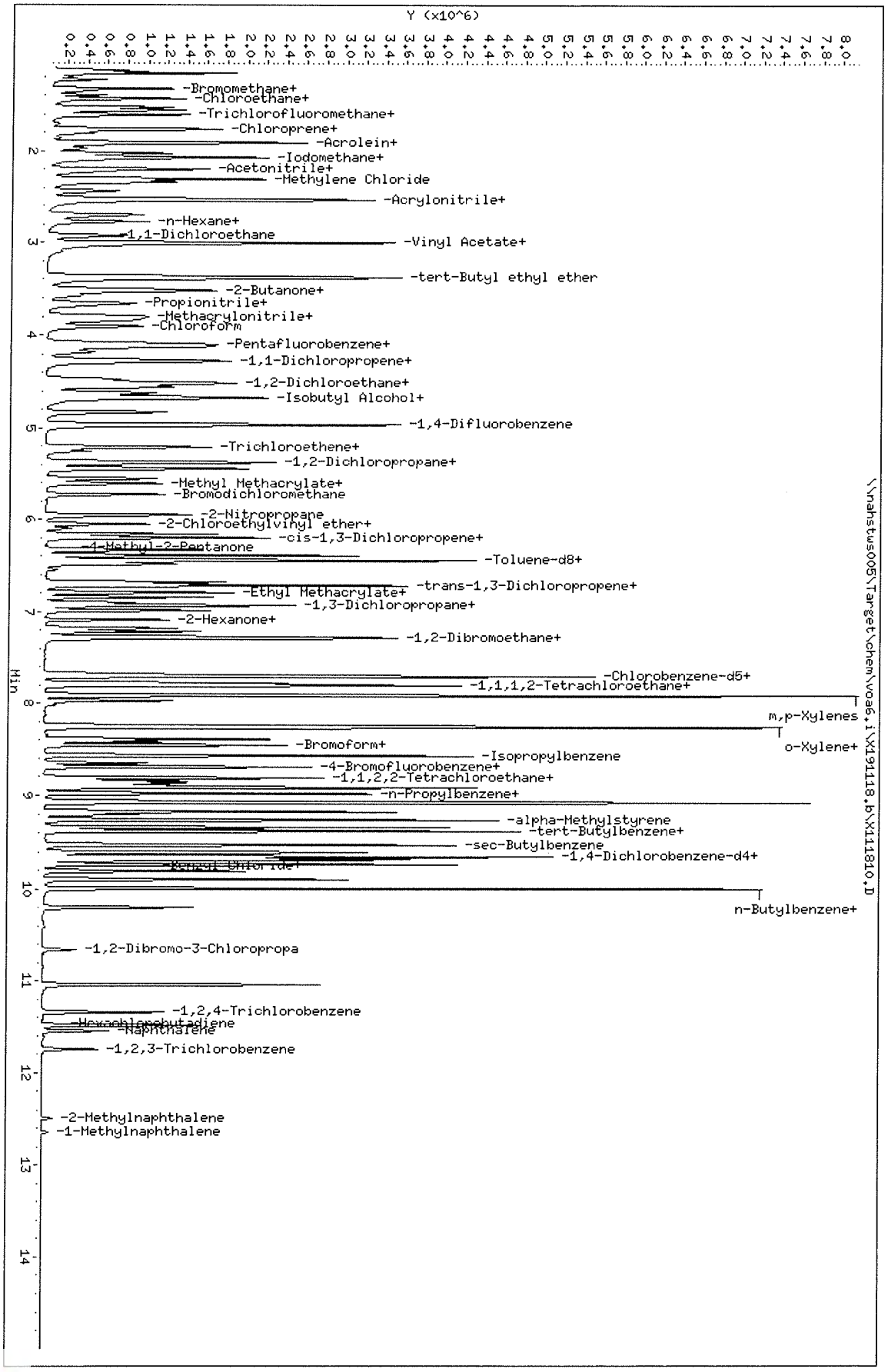
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	378157	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	542191	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	494760	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	282310	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	532181	150.000	148.11
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	688600	150.000	148.76
$	30 Dibromofluoromethane	113	4.104	4.104	(0.981)	514854	150.000	148.99
$	48 Toluene-d8	98	6.389	6.389	(0.833)	1815269	150.000	139.25
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	548257	150.000	152.74
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	768782	150.000	150.69
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	560927	150.000	141.29
	138 Freon TF	101	1.912	1.912	(0.457)	513260	150.000	155.89
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	380298	150.000	147.04
	22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	825788	150.000	150.08
	11 1,1-Dichloroethene	96	1.912	1.912	(0.457)	483391	150.000	150.83
	32 1,1-Dichloropropene	75	4.283	4.283	(0.862)	635821	150.000	145.37
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	156391	150.000	148.93
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	465353	150.000	138.34(M)
	90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	338737	150.000	142.44
	79 1,2,4-Trimethylbenzene	105	9.383	9.383	(0.970)	2030171	150.000	151.55
	89 1,2-Dibromo-3-Chloropropane	155	10.658	10.658	(1.102)	65470	150.000	150.06
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	518766	150.000	149.49

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111810.D Page 2
Report Date: 06-Dec-2019 19:56

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
88 1,2-Dichlorobenzene	146	9.999	9.999	(1.034)	1121580	150.000	149.69
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	645436	150.000	149.95
42 1,2-Dichloropropane	63	5.443	5.443	(1.095)	471959	150.000	145.71
75 1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	1980658	150.000	154.09
83 1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	1183710	150.000	146.20
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	763789	150.000	145.46
84 1,4-Dichlorobenzene	146	9.684	9.684	(1.001)	1195790	150.000	145.34
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	732900	150.000	146.75
24 2-Butanone	43	3.573	3.573	(0.854)	346972	300.000	299.02(A)
76 2-Chlorotoluene	91	8.982	8.982	(0.929)	1513395	150.000	149.00
52 2-Hexanone	43	7.090	7.090	(0.924)	606144	300.000	298.23(A)
77 4-Chlorotoluene	91	9.075	9.075	(0.939)	1867848	150.000	151.71
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	2100293	150.000	152.04
45 4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	884349	300.000	305.06(A)
10 Acetone	43	1.976	1.976	(0.473)	284604	300.000	298.06(A)
37 Benzene	78	4.512	4.512	(0.908)	1843665	150.000	148.64
74 Bromobenzene	156	8.810	8.810	(0.911)	709083	150.000	144.52
29 Bromochloromethane	128	3.795	3.795	(0.908)	294445	150.000	143.73
39 Bromodichloromethane	83	5.730	5.730	(1.153)	669356	150.000	149.18
66 Bromoform	173	8.416	8.416	(1.097)	447981	150.000	150.02
6 Bromomethane	94	1.331	1.331	(0.318)	529714	150.000	145.16
19 Carbon Disulfide	76	2.069	2.069	(0.495)	2705391	300.000	310.30(A)
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	707541	150.000	147.68(H)
59 Chlorobenzene	112	7.699	7.699	(1.004)	1445648	150.000	149.66
7 Chloroethane	64	1.396	1.396	(0.334)	351927	150.000	147.81
28 Chloroform	83	3.910	3.910	(0.935)	863467	150.000	140.99
3 Chloromethane	50	1.074	1.074	(0.257)	613254	150.000	148.94
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	542390	150.000	151.24
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	808388	150.000	152.88
55 Dibromochloromethane	129	7.176	7.176	(0.936)	573494	150.000	152.63
44 Dibromomethane	93	5.558	5.558	(1.118)	338759	150.000	147.80
2 Dichlorodifluoromethane	85	0.966	0.966	(0.231)	504807	150.000	144.79
61 Ethylbenzene	106	7.800	7.800	(1.017)	751250	150.000	150.52
91 Hexachlorobutadiene	225	11.489	11.489	(1.188)	279881	150.000	142.49
67 Isopropylbenzene	105	8.566	8.566	(1.117)	2283588	150.000	154.47
62 m,p-Xylenes	106	7.907	7.907	(1.031)	1861660	300.000	309.12(A)
17 Methylene Chloride	84	2.306	2.306	(0.551)	485622	150.000	142.02
87 n-Butylbenzene	91	9.999	9.999	(1.034)	1823176	150.000	158.59
73 n-Propylbenzene	91	8.917	8.917	(0.922)	2616190	150.000	149.92
92 Naphthalene	128	11.546	11.546	(1.194)	435593	150.000	142.81
63 o-Xylene	106	8.244	8.244	(1.075)	906786	150.000	152.56
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	2308597	150.000	152.28
64 Styrene	104	8.258	8.258	(1.077)	1622659	150.000	156.99
78 tert-Butylbenzene	119	9.340	9.340	(0.966)	1665732	150.000	151.35
56 Tetrachloroethene	164	6.933	6.933	(0.904)	493485	150.000	141.95
50 Toluene	91	6.446	6.446	(0.840)	2107838	150.000	150.23
20 trans-1,2-Dichloroethene	96	2.528	2.528	(0.604)	472385	150.000	151.82
51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	741568	150.000	153.87
38 Trichloroethene	130	5.207	5.207	(1.048)	566006	150.000	149.27
8 Trichlorofluoromethane	101	1.553	1.553	(0.372)	922117	150.000	157.19
5 Vinyl Chloride	62	1.138	1.138	(0.272)	578026	150.000	149.97

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



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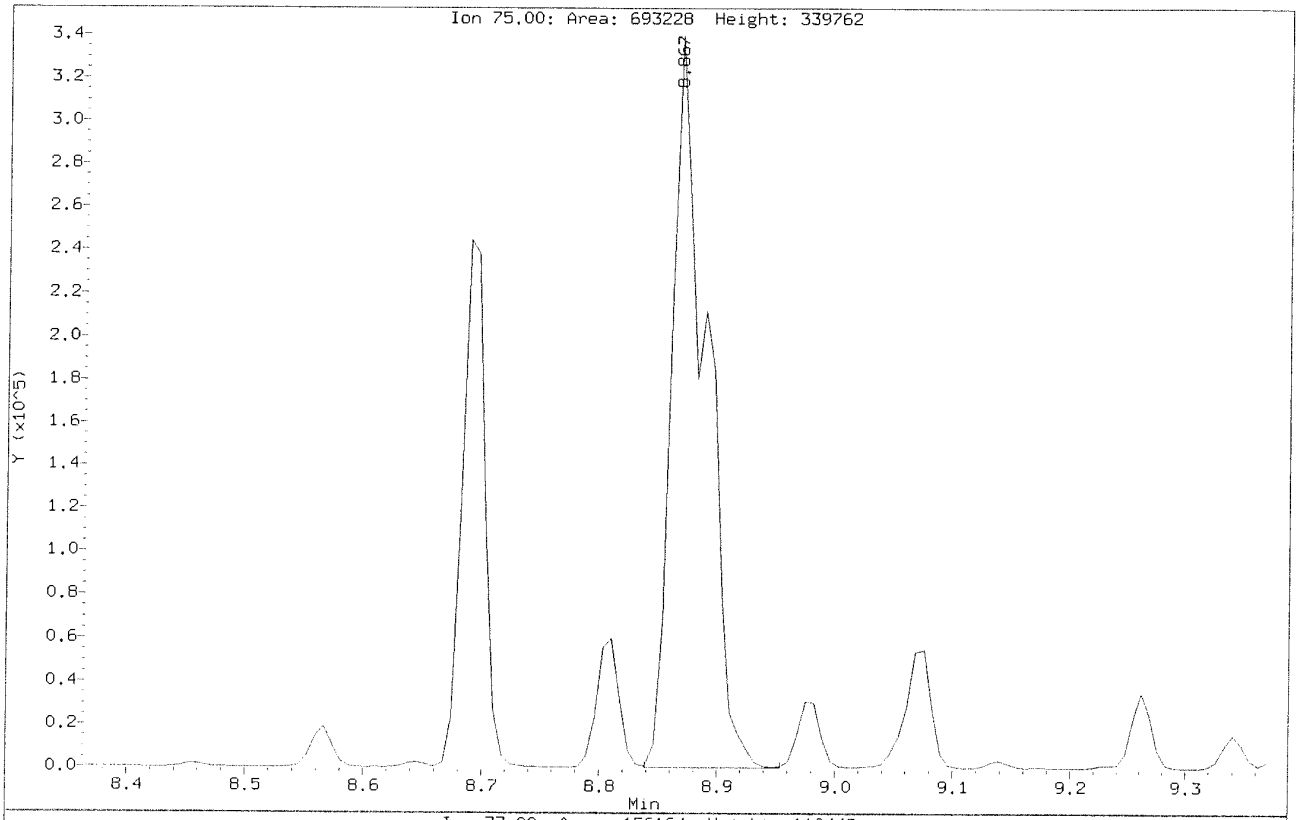
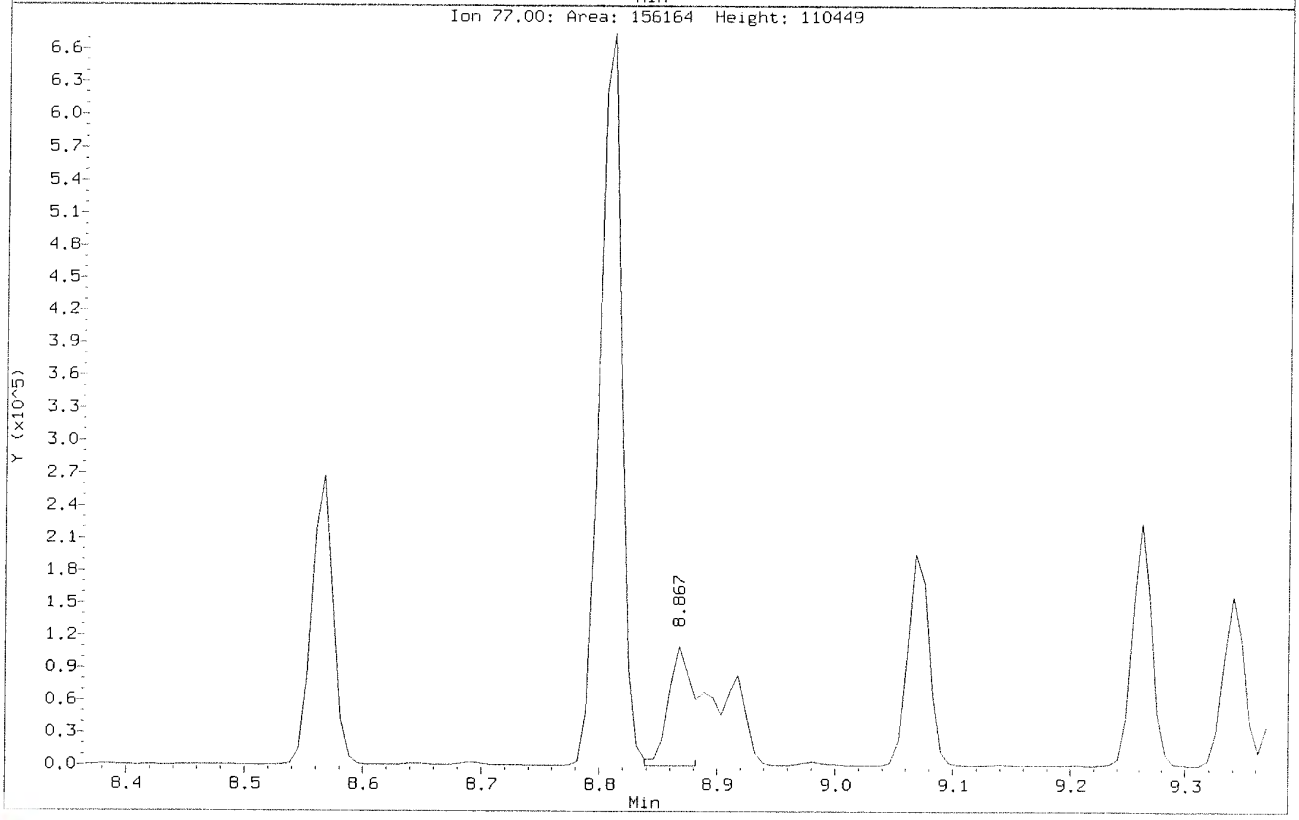
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\BEFORE\X111810.D
Injection Date: 18-NOV-2019 17:22
Instrument: voa6.i
Client Sample ID: V5TD150

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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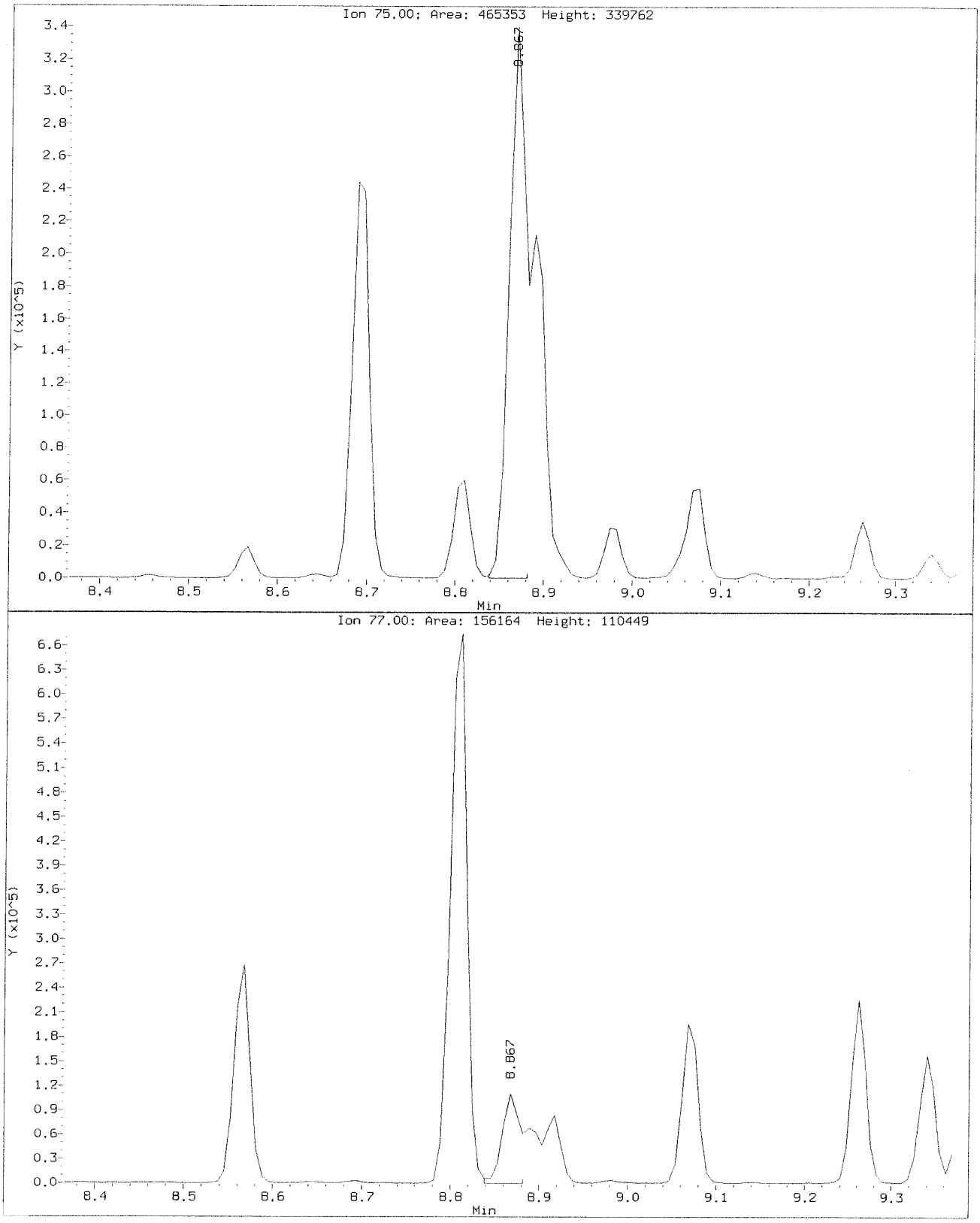
Instrument: voa6.i
Client Sample ID: VSTD150

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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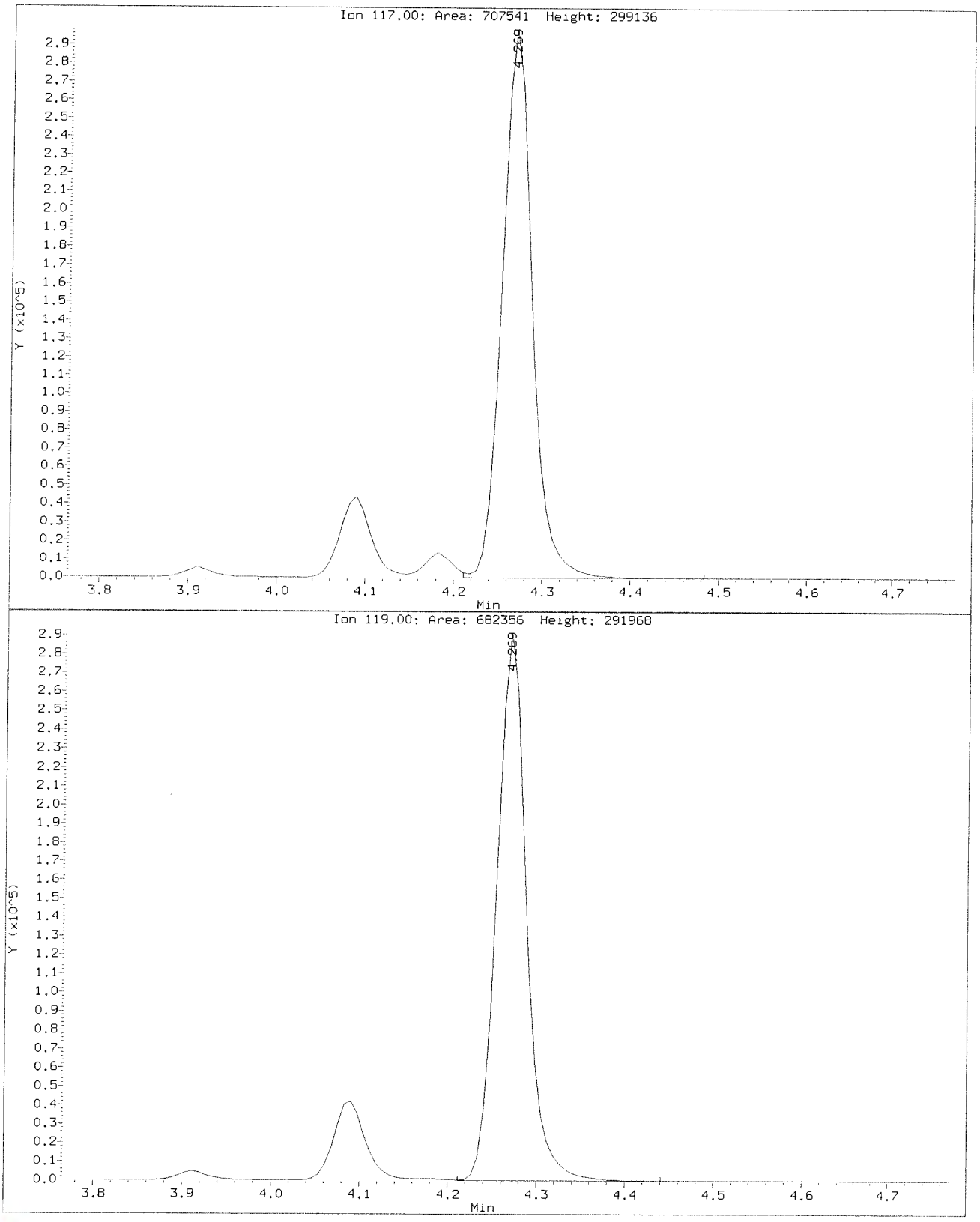
Injection Date: 18-NOV-2019 17:22
Instrument: voa6.i
Client Sample ID: VSTD150

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



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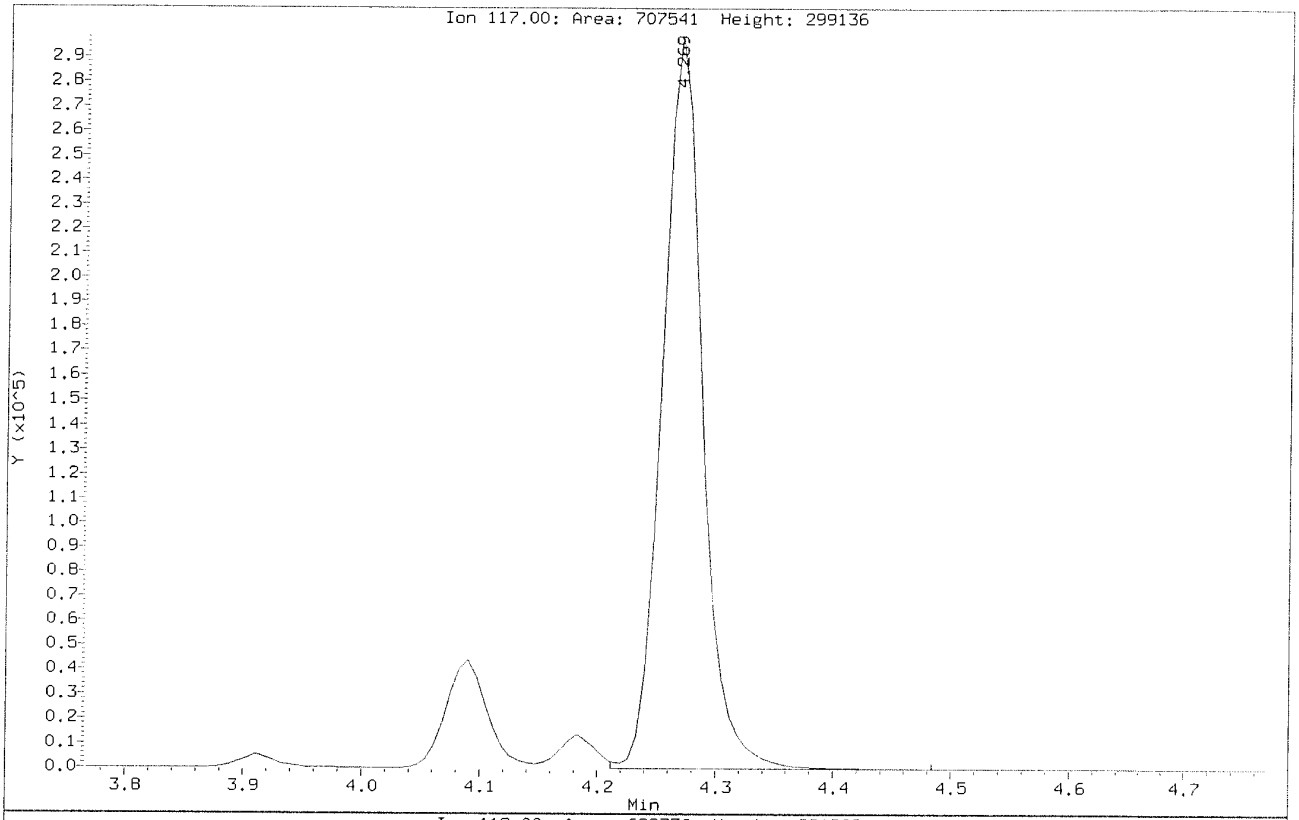
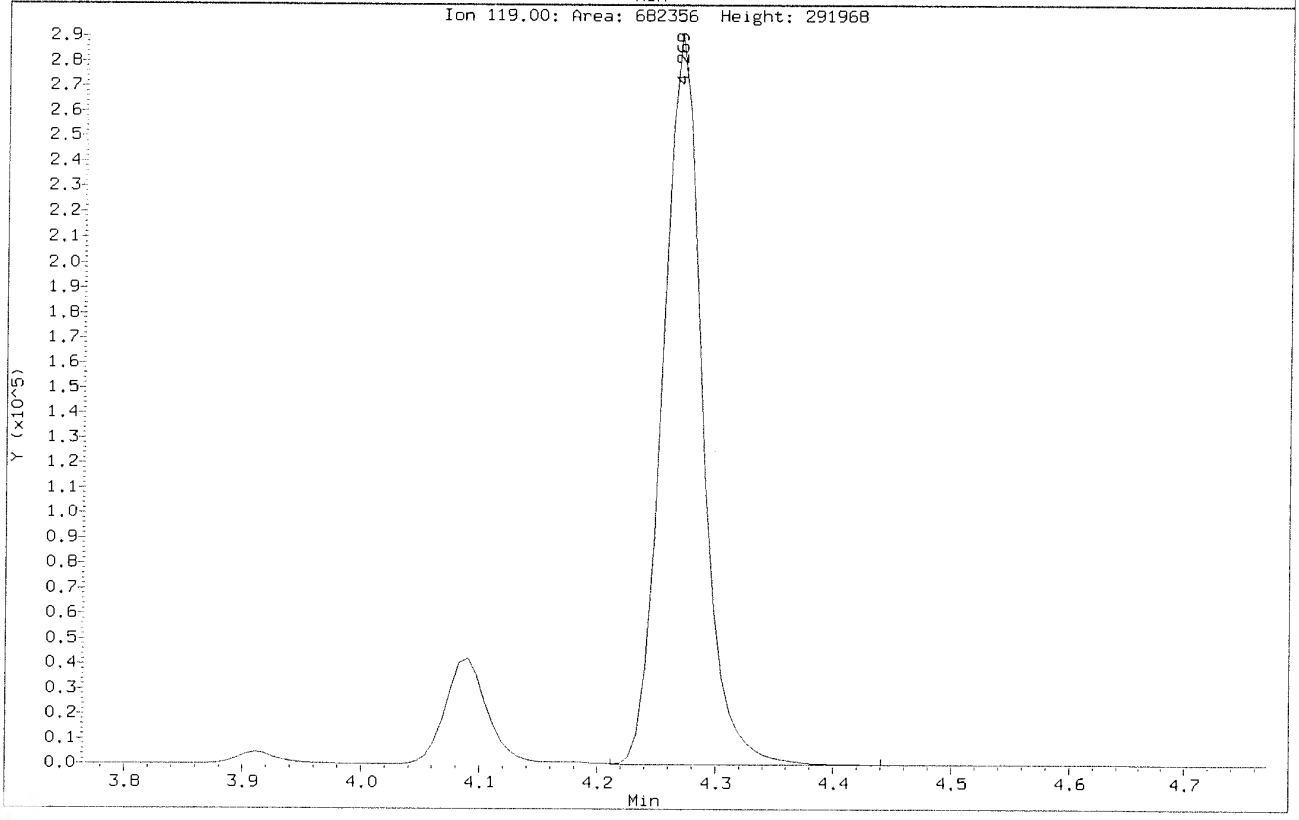
Instrument: voa6.i
Client Sample ID: VSTD150

Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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Data file : \\nahstws005\Target\chem\voa6.i\X191118.b\X111811.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 18-NOV-2019 17:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191118.b\8260W.m
Meth Date : 06-Dec-2019 19:56 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 17:22 Cal File: X111810.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

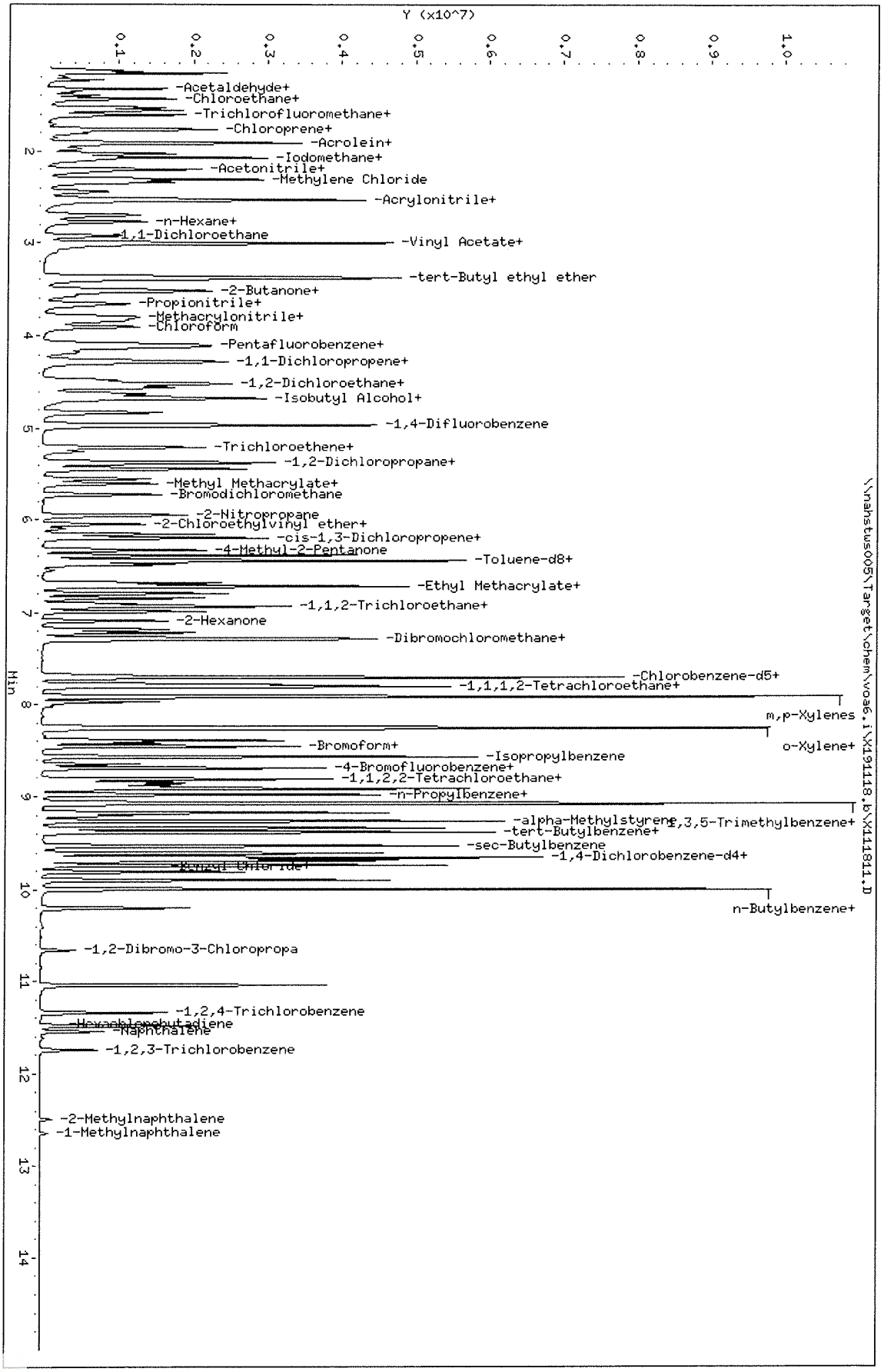
		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	369517	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	542684	50.0000	
*	47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	493817	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	280605	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	713282	200.000	202.89(A)
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	933083	200.000	201.81(A)
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	681300	200.000	201.64(A)
$	48 Toluene-d8	98	6.388	6.388	(0.833)	2431773	200.000	186.90
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	731912	200.000	204.29(A)
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	1030058	200.000	206.62(A)
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	742176	200.000	188.09
	138 Freon TF	101	1.911	1.911	(0.457)	696977	200.000	216.65(A)
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	511936	200.000	198.31
	22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	1089650	200.000	202.66(A)
	11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	641291	200.000	204.78(A)
	32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	849992	200.000	194.17
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	210414	200.000	200.64(A)
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	609450	200.000	182.28(M)
	90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	455609	200.000	192.75
	79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	2745695	200.000	206.21(A)
	89 1,2-Dibromo-3-Chloropropane	155	10.657	10.657	(1.102)	86827	200.000	200.34(A)
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	693307	200.000	200.18(A)

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111811.D Page 2
Report Date: 06-Dec-2019 19:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
88	1,2-Dichlorobenzene	146	9.998	9.998	(1.034)	1508205	200.000	202.51(A)
33	1,2-Dichloroethane	62	4.562	4.562	(0.918)	865099	200.000	200.81(A)
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	629023	200.000	194.03
75	1,3,5-Trimethylbenzene	105	9.074	9.074	(0.939)	2668415	200.000	208.86(A)
83	1,3-Dichlorobenzene	146	9.612	9.612	(0.994)	1590132	200.000	197.60
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	1018788	200.000	194.39
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	1621999	200.000	198.35
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	972273	200.000	199.24
24	2-Butanone	43	3.580	3.580	(0.856)	437867	400.000	386.18(A)
76	2-Chlorotoluene	91	8.981	8.981	(0.929)	2019887	200.000	200.07(A)
52	2-Hexanone	43	7.090	7.090	(0.924)	806375	400.000	397.51(A)
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	2525879	200.000	206.41(A)
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	2843849	200.000	207.12(A)
45	4-Methyl-2-Pentanone	43	6.331	6.331	(0.825)	1178590	400.000	407.33(A)
10	Acetone	43	1.976	1.976	(0.473)	372223	400.000	400.25(A)
37	Benzene	78	4.512	4.512	(0.908)	2449808	200.000	197.34
74	Bromobenzene	156	8.809	8.809	(0.911)	958177	200.000	196.47
29	Bromochloromethane	128	3.795	3.795	(0.908)	376537	200.000	188.10
39	Bromodichloromethane	83	5.729	5.729	(1.153)	893499	200.000	198.95
66	Bromoform	173	8.415	8.415	(1.097)	602595	200.000	201.83(A)
6	Bromomethane	94	1.331	1.331	(0.318)	631015	200.000	177.48(M)
19	Carbon Disulfide	76	2.069	2.069	(0.495)	3628864	400.000	425.96(A)
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	954439	200.000	199.03(H)
59	Chlorobenzene	112	7.699	7.699	(1.004)	1940751	200.000	201.30(A)
7	Chloroethane	64	1.396	1.396	(0.334)	459143	200.000	197.35
28	Chloroform	83	3.910	3.910	(0.935)	1152726	200.000	192.62
3	Chloromethane	50	1.073	1.073	(0.257)	811388	200.000	201.60(A)
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	721487	200.000	205.88(A)
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	1069987	200.000	202.17(A)
55	Dibromochloromethane	129	7.183	7.183	(0.937)	764698	200.000	203.91(A)
44	Dibromomethane	93	5.557	5.557	(1.118)	451528	200.000	196.82
2	Dichlorodifluoromethane	85	0.966	0.966	(0.231)	695305	200.000	203.74(A)
61	Ethylbenzene	106	7.807	7.807	(1.018)	1011964	200.000	203.15(A)
91	Hexachlorobutadiene	225	11.488	11.488	(1.188)	373475	200.000	191.48
67	Isopropylbenzene	105	8.566	8.566	(1.117)	3082382	200.000	208.91(A)
62	m,p-Xylenes	106	7.907	7.907	(1.031)	2525960	400.000	420.22(A)
17	Methylene Chloride	84	2.305	2.305	(0.551)	644942	200.000	193.02
87	n-Butylbenzene	91	9.998	9.998	(1.034)	2465783	200.000	215.80(A)
73	n-Propylbenzene	91	8.917	8.917	(0.922)	3540988	200.000	204.15(A)
92	Naphthalene	128	11.546	11.546	(1.194)	574298	200.000	189.43
63	o-Xylene	106	8.244	8.244	(1.075)	1231007	200.000	207.50(A)
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	3131997	200.000	207.86(A)
64	Styrene	104	8.265	8.265	(1.078)	2199171	200.000	213.18(A)
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	2240944	200.000	204.85(A)
56	Tetrachloroethene	164	6.933	6.933	(0.904)	660581	200.000	190.38
50	Toluene	91	6.453	6.453	(0.841)	2834294	200.000	202.39(A)
20	trans-1,2-Dichloroethene	96	2.527	2.527	(0.604)	630988	200.000	207.54(A)
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	1000892	200.000	207.50(A)
38	Trichloroethene	130	5.206	5.206	(1.048)	754871	200.000	198.90
8	Trichlorofluoromethane	101	1.553	1.553	(0.371)	1241567	200.000	216.59(A)
5	Vinyl Chloride	62	1.138	1.138	(0.272)	773023	200.000	205.26(A)

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



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Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

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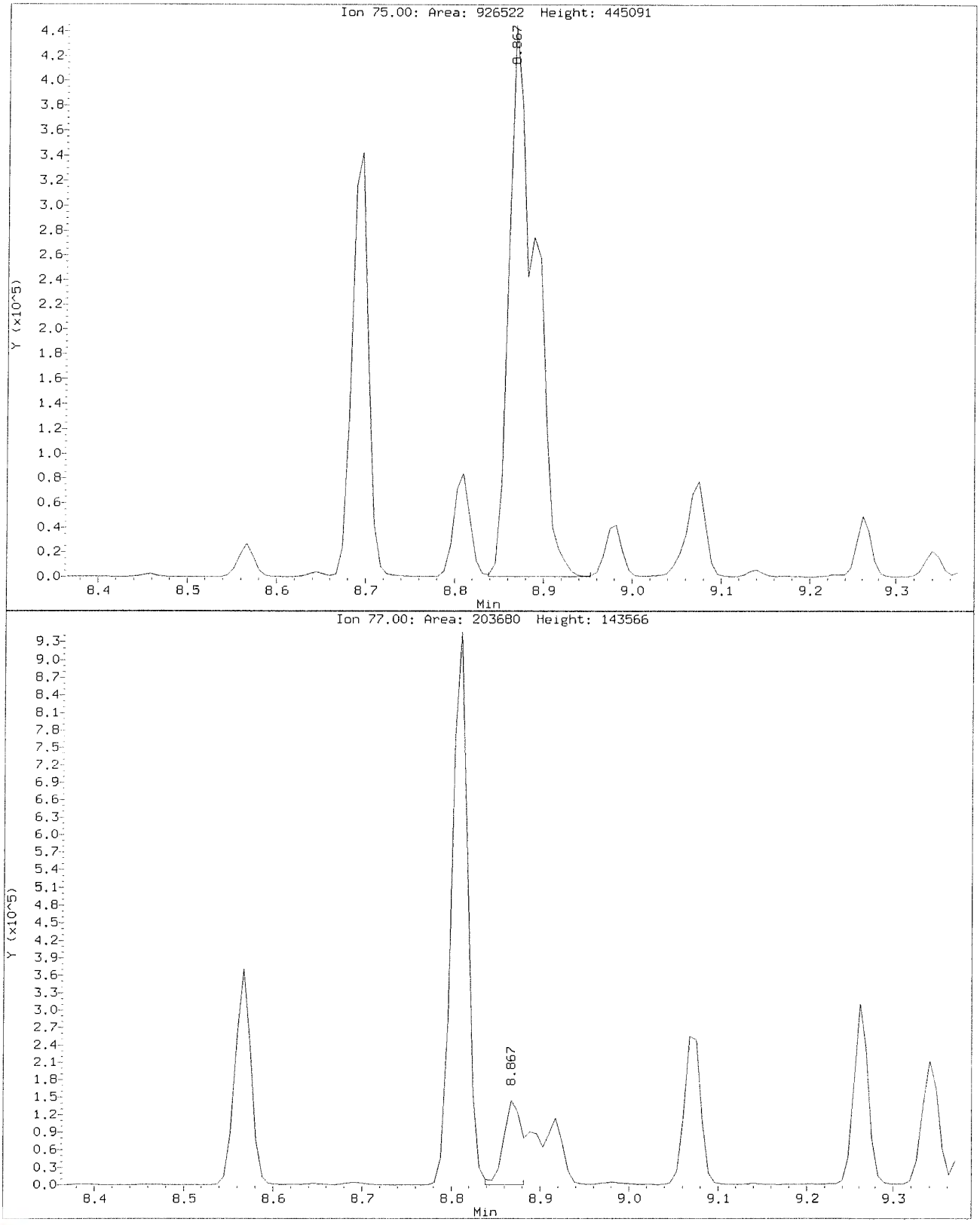
Injection Date: 18-NOV-2019 17:46
Instrument: voa6.i
Client Sample ID: VSTD200

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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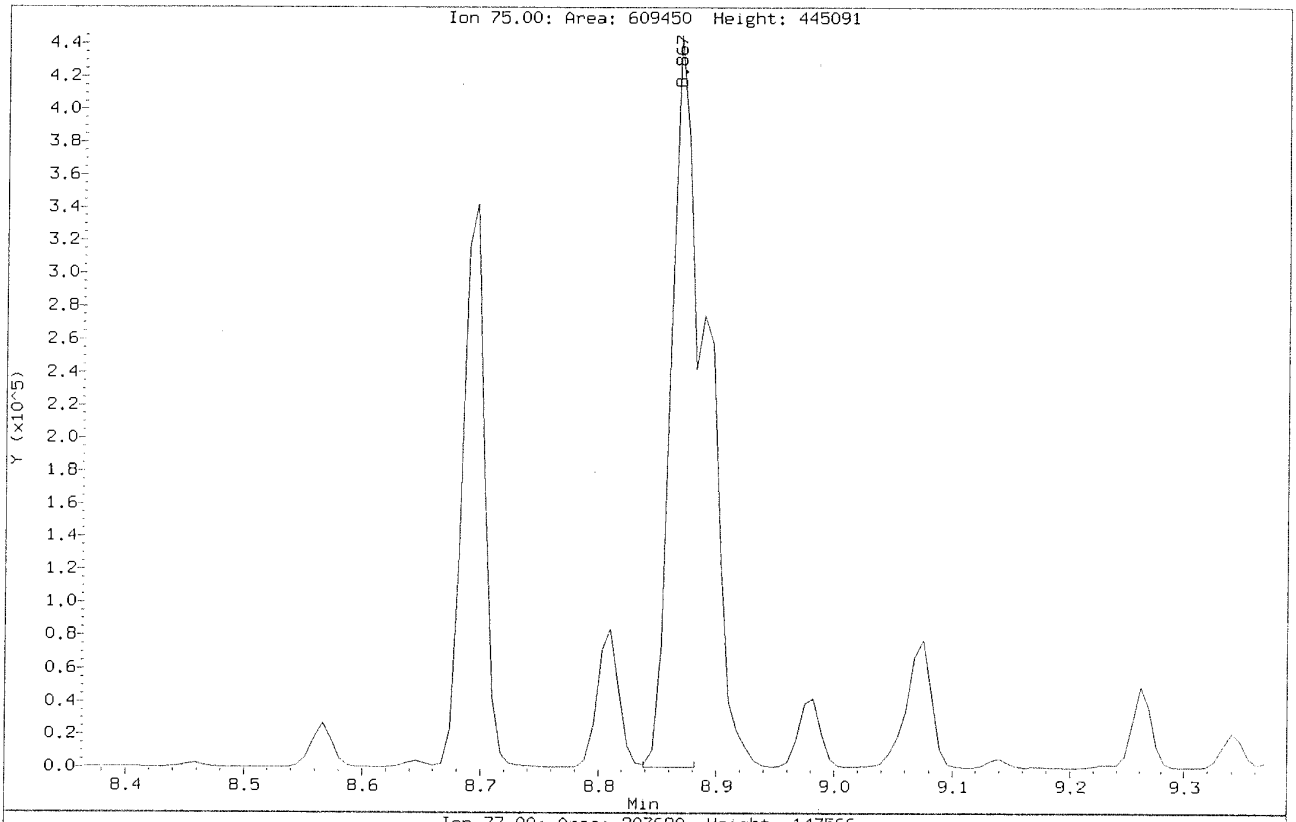
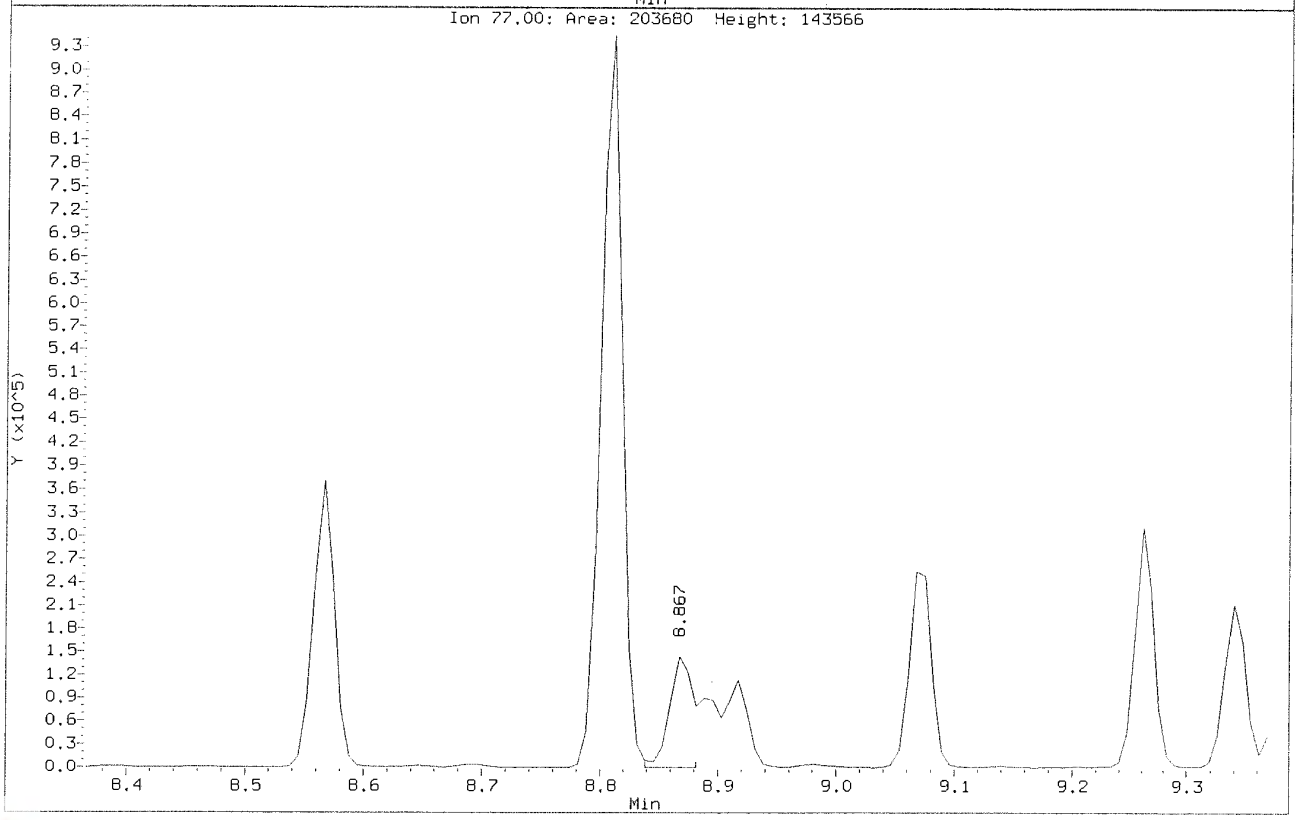
Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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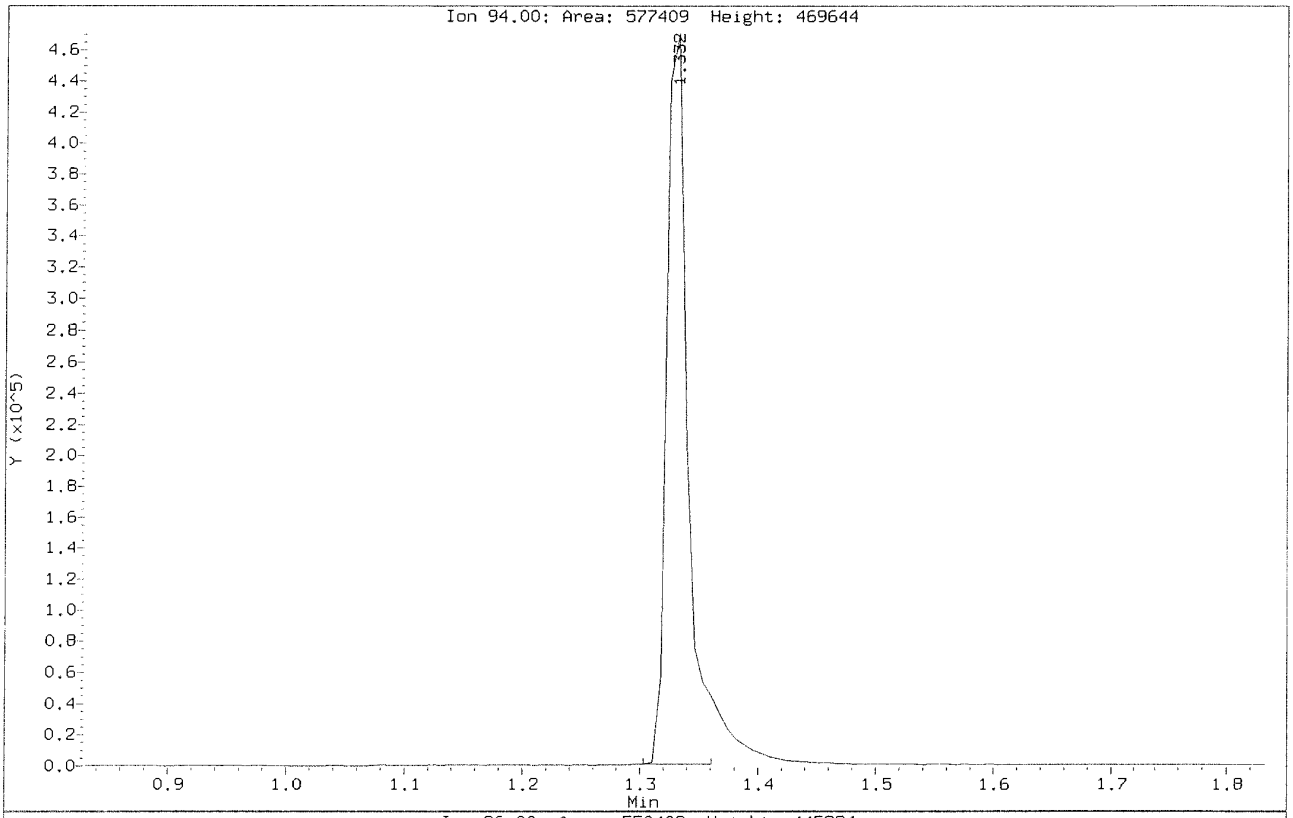
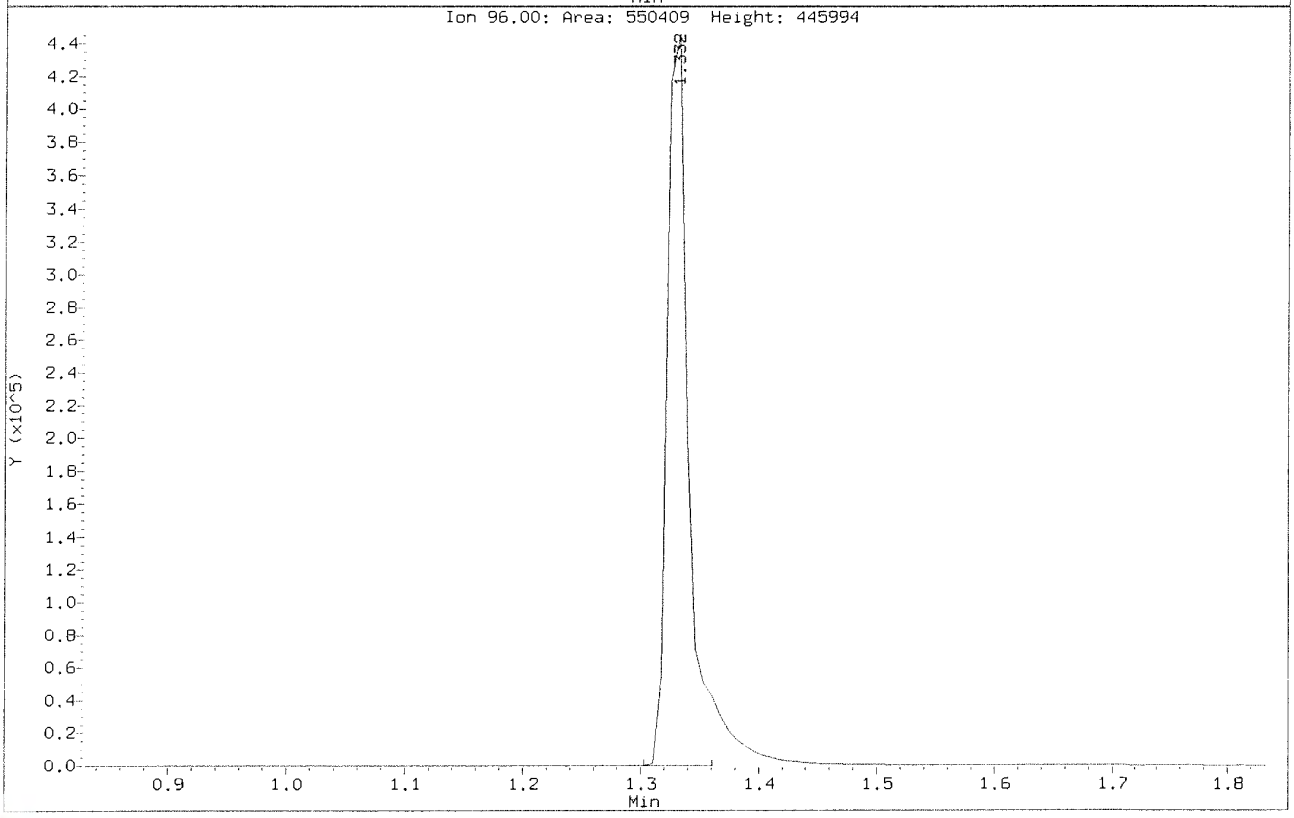
Instrument: voa6.i
Client Sample ID: VSTD200

Compound: Bromomethane
CAS Number: 74-83-9





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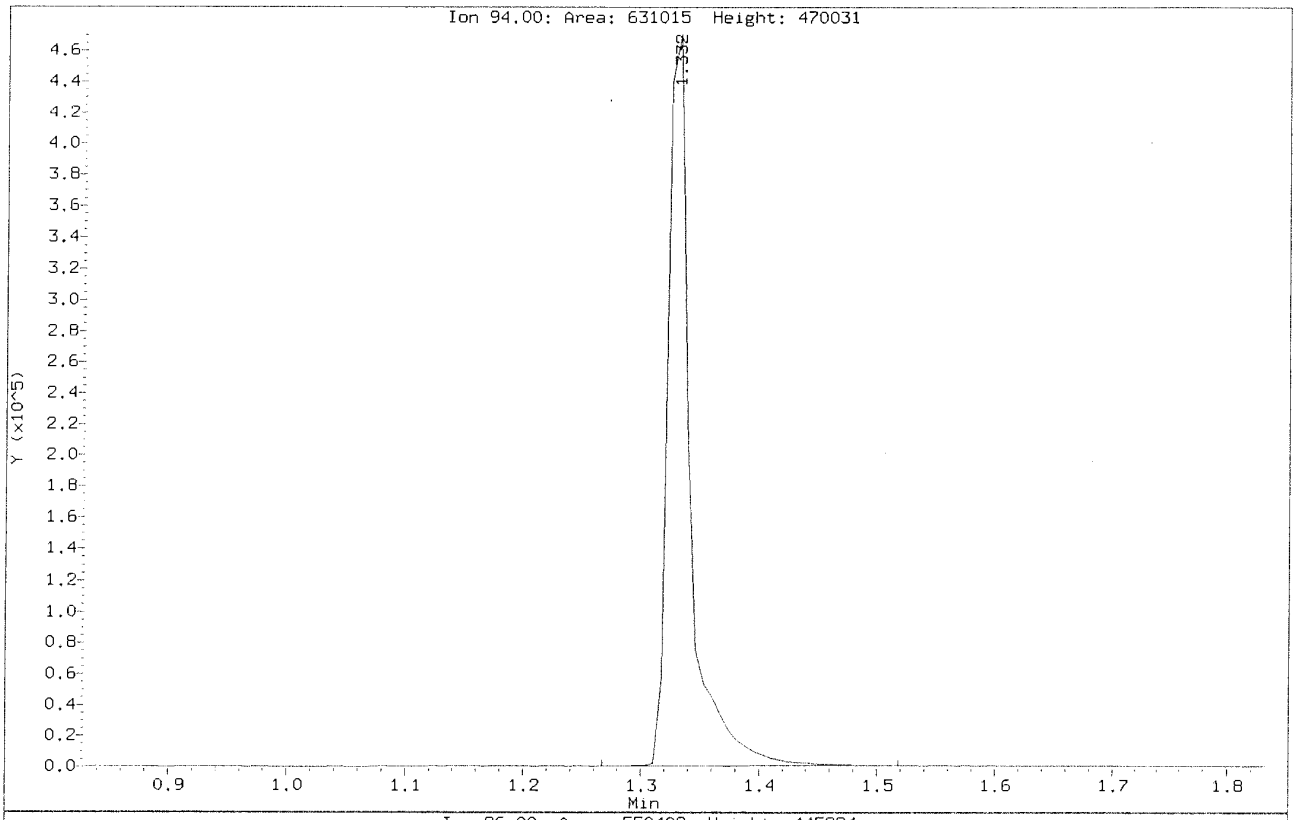
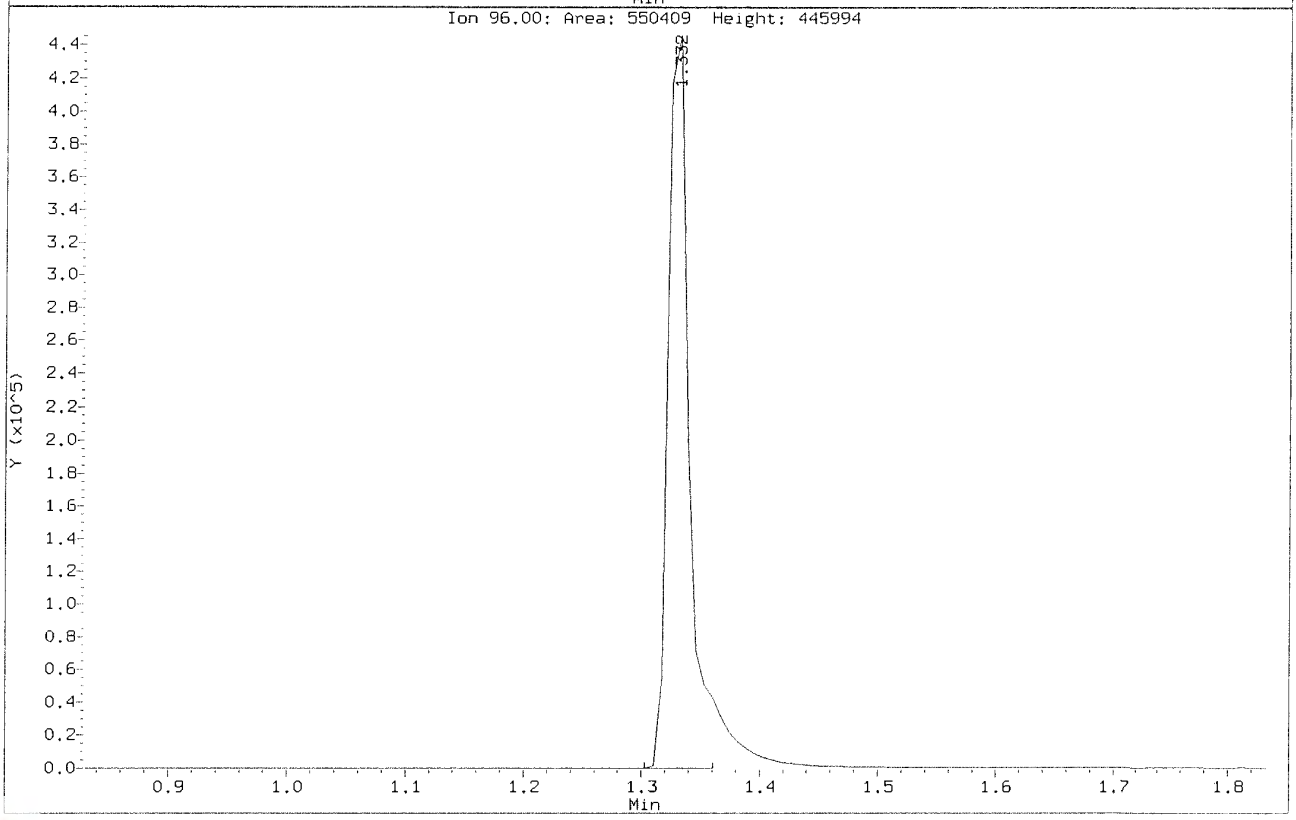
Instrument: voa6.i
Client Sample ID: VSTD200

Compound: Bromomethane
CAS Number: 74-83-9





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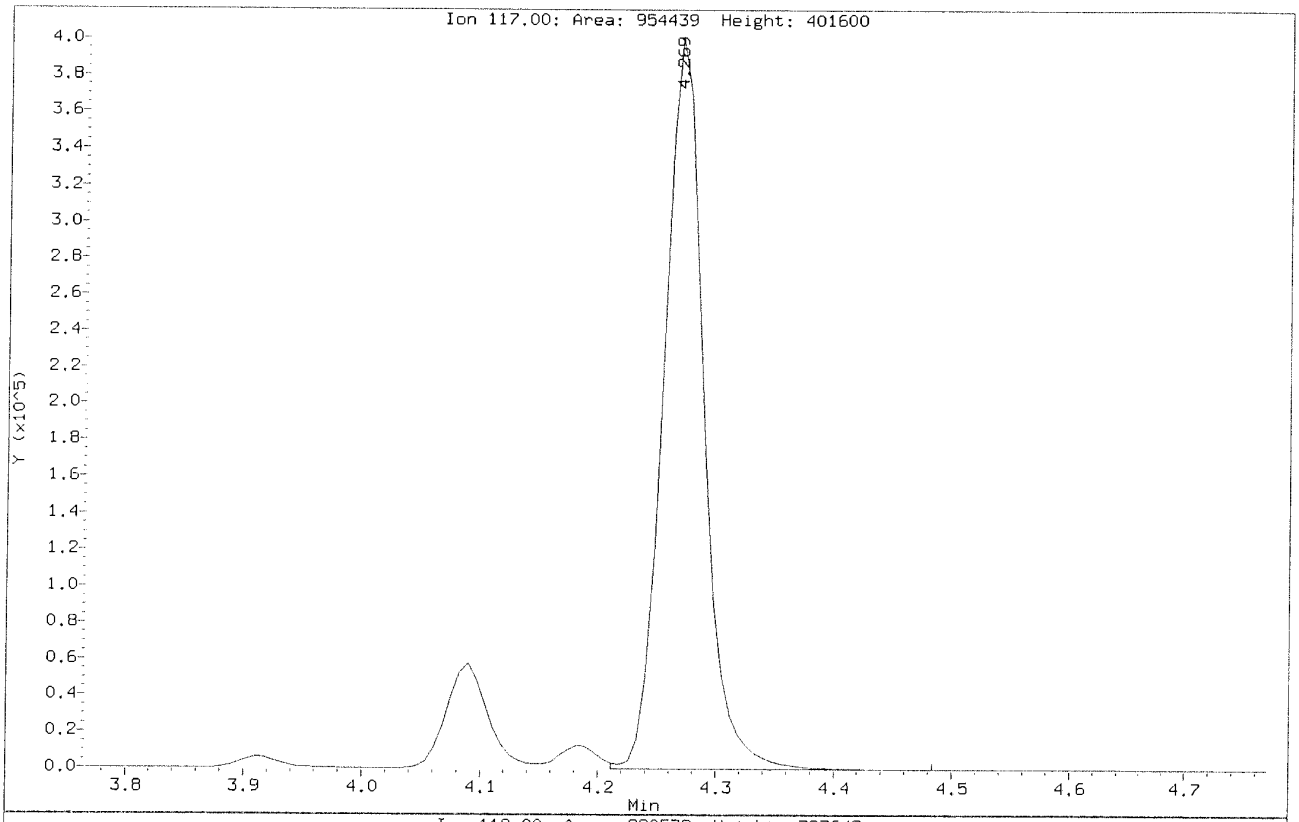
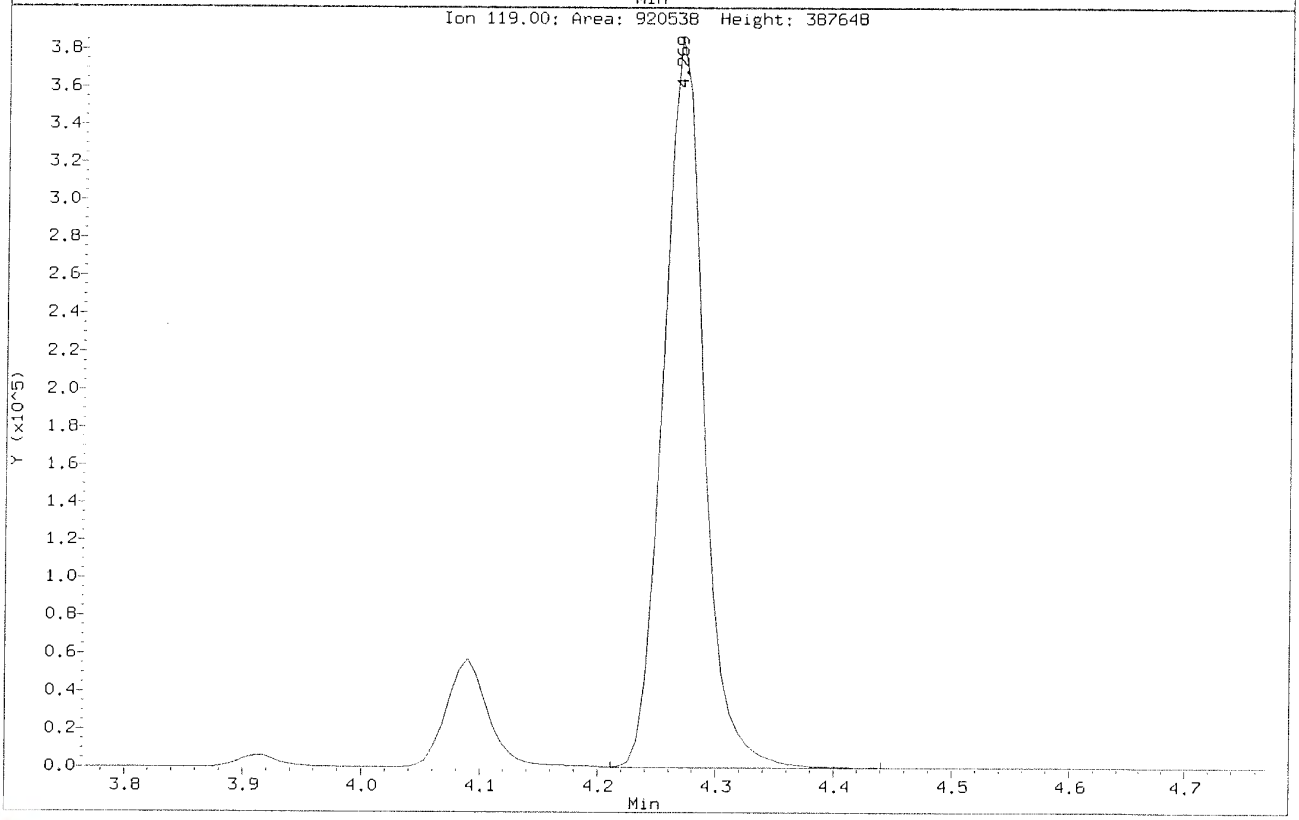
Injection Date: 18-NOV-2019 17:46
Instrument: voa6.i
Client Sample ID: VSTD200

Compound: Carbon Tetrachloride
CAS Number: 56-23-5





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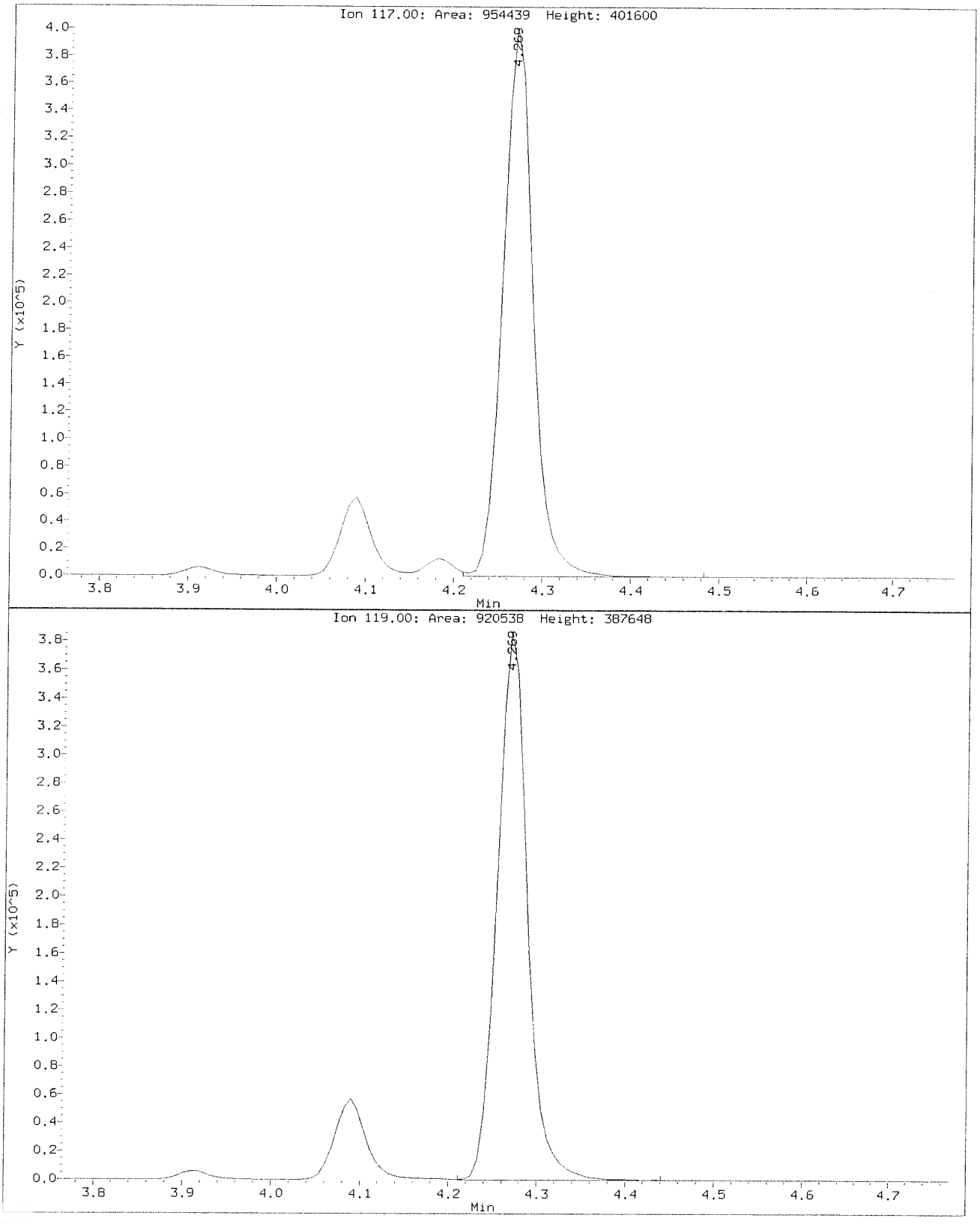
Instrument: voa6.i
Client Sample ID: VSTD200

Compound: Carbon Tetrachloride
CAS Number: 56-23-5



ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191118.b\X111814.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 18-NOV-2019 18:58
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;ICV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191118.b\8260W.m
Meth Date : 06-Dec-2019 19:56 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 17:46 Cal File: X111811.D
Als bottle: 15 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

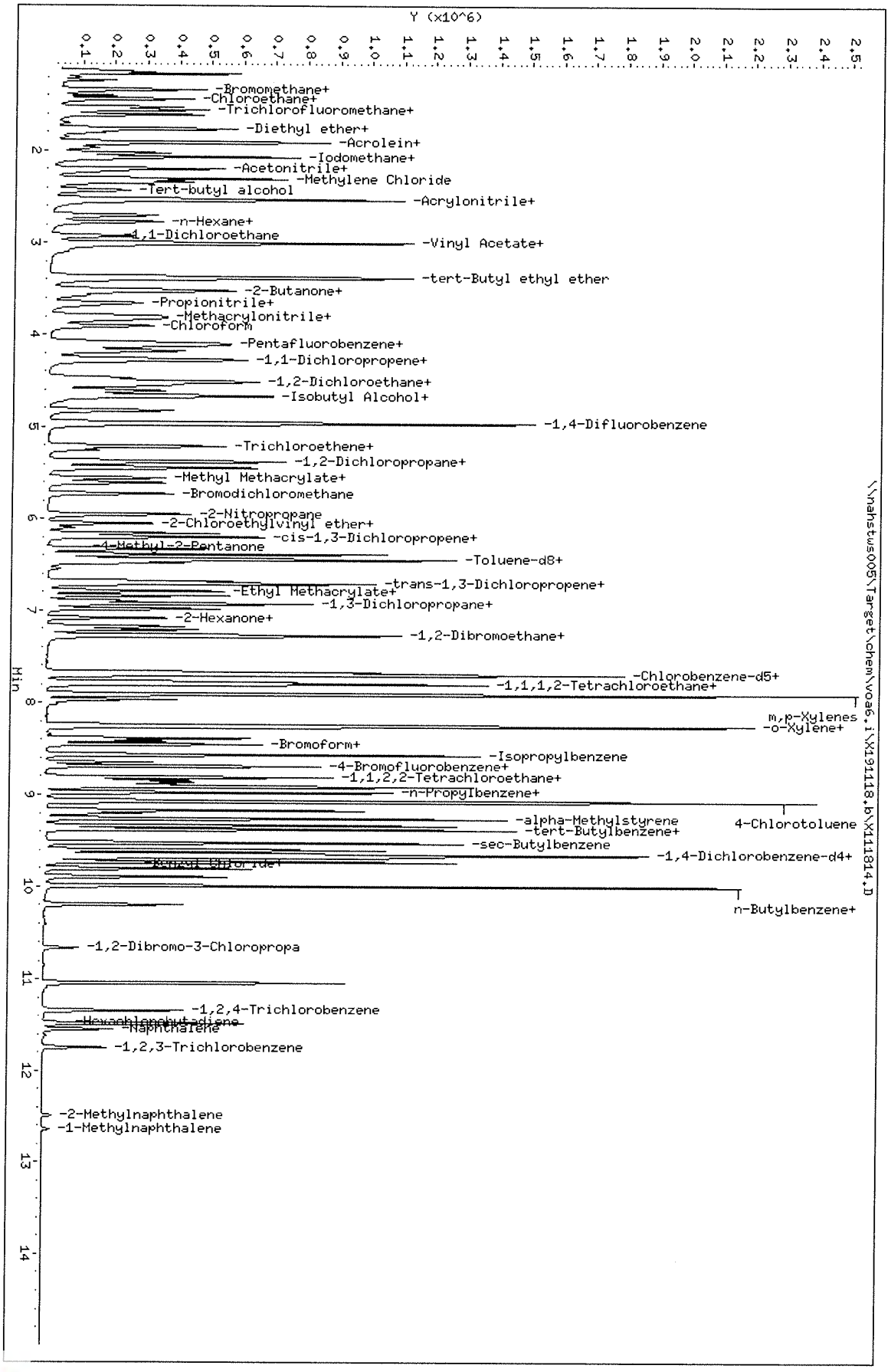
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	365284	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	526230	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	487659	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.669	(1.000)	262170	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	177715	51.6875	51.68
$ 69 4-Bromofluorobenzene	95	8.688	8.695	(1.133)	217553	47.9674	47.96
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	172534	51.9307	51.93
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	603087	46.9372	46.93
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	181751	51.3728	51.37
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	259914	52.7430	52.74
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	183157	49.6822	49.68
138 Freon TF	101	1.919	1.911	(0.459)	177448	55.7980	55.79
53 1,1,2-Trichloroethane	83	6.840	6.847	(0.892)	125473	49.2205	49.22
22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	273555	51.4692	51.46
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	164159	53.0287	53.02
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	211745	49.8829	49.88
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	56746	58.2884	58.28
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	154338	49.4088	49.40(M)
90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	122229	55.3465	55.34
79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	627033	50.4058	50.40
89 1,2-Dibromo-3-Chloropropane	155	10.657	10.657	(1.102)	20914	51.3981	51.39
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	171012	50.0005	50.00

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\X111814.D Page 2
Report Date: 06-Dec-2019 19:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
88	1,2-Dichlorobenzene	146	9.998	9.998	(1.034)	343886	49.4226	49.42
33	1,2-Dichloroethane	62	4.555	4.562	(0.916)	214666	51.3880	51.38
42	1,2-Dichloropropane	63	5.436	5.443	(1.094)	155619	49.5052	49.50
75	1,3,5-Trimethylbenzene	105	9.067	9.074	(0.938)	621241	52.0454	52.04
83	1,3-Dichlorobenzene	146	9.604	9.612	(0.993)	380305	50.5823	50.58
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	254579	49.1895	49.18
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	379206	49.6335	49.63
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	252567	52.3575	52.35
24	2-Butanone	43	3.573	3.580	(0.854)	117980	105.260	105.25
76	2-Chlorotoluene	91	8.974	8.981	(0.928)	475545	50.4166	50.41
52	2-Hexanone	43	7.090	7.090	(0.924)	192493	96.0902	96.09
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	578291	50.5814	50.58
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	664137	51.7722	51.77
45	4-Methyl-2-Pentanone	43	6.324	6.331	(0.824)	279109	97.6823	97.68
10	Acetone	43	1.969	1.976	(0.471)	104925	111.376	111.37
37	Benzene	78	4.512	4.512	(0.908)	612198	50.8565	50.85
74	Bromobenzene	156	8.809	8.809	(0.911)	233126	51.1647	51.16
29	Bromochloromethane	128	3.795	3.795	(0.908)	101596	51.3407	51.34
39	Bromodichloromethane	83	5.729	5.729	(1.153)	222106	51.0024	51.00
66	Bromoform	173	8.415	8.415	(1.097)	142491	49.0895	49.08
6	Bromomethane	94	1.338	1.331	(0.320)	208417	57.7314	57.73
19	Carbon Disulfide	76	2.069	2.069	(0.495)	924383	109.763	109.76
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	237498	51.0754	51.07
59	Chlorobenzene	112	7.699	7.699	(1.004)	468418	49.2009	49.20
7	Chloroethane	64	1.403	1.396	(0.336)	118785	51.6484	51.64
28	Chloroform	83	3.910	3.910	(0.935)	292027	49.3641	49.36
3	Chloromethane	50	1.073	1.073	(0.257)	200113	50.4397	50.43
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	184183	53.1686	53.16
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	267228	52.0716	52.07
55	Dibromochloromethane	129	7.176	7.183	(0.936)	184910	49.9303	49.93
44	Dibromomethane	93	5.557	5.557	(1.118)	112351	50.5059	50.50
2	Dichlorodifluoromethane	85	0.973	0.966	(0.233)	176572	52.9949	52.99
61	Ethylbenzene	106	7.799	7.807	(1.017)	247055	50.2234	50.22
91	Hexachlorobutadiene	225	11.481	11.488	(1.187)	113053	61.6918	61.69(R)
67	Isopropylbenzene	105	8.566	8.566	(1.117)	730633	50.1455	50.14
62	m,p-Xylenes	106	7.907	7.907	(1.031)	603641	101.692	101.69
17	Methylene Chloride	84	2.305	2.305	(0.551)	164000	49.6528	49.65
87	n-Butylbenzene	91	9.998	9.998	(1.034)	555875	52.0702	52.07
73	n-Propylbenzene	91	8.917	8.917	(0.922)	841108	51.9034	51.90
92	Naphthalene	128	11.546	11.546	(1.194)	144573	51.0408	51.04
63	o-Xylene	106	8.243	8.244	(1.075)	291303	49.7239	49.72
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	728868	51.7743	51.77
64	Styrene	104	8.258	8.265	(1.077)	512981	50.3548	50.35
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	525095	51.3776	51.37
56	Tetrachloroethene	164	6.933	6.933	(0.904)	169030	49.3314	49.33
50	Toluene	91	6.446	6.453	(0.840)	685240	49.5512	49.55
20	trans-1,2-Dichloroethene	96	2.527	2.527	(0.604)	157233	52.3156	52.31
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	242451	51.8354	51.83
38	Trichloroethene	130	5.206	5.206	(1.048)	190582	51.7868	51.78
8	Trichlorofluoromethane	101	1.560	1.553	(0.373)	314898	55.5726	55.57
5	Vinyl Chloride	62	1.138	1.138	(0.272)	193522	51.9818	51.98

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.



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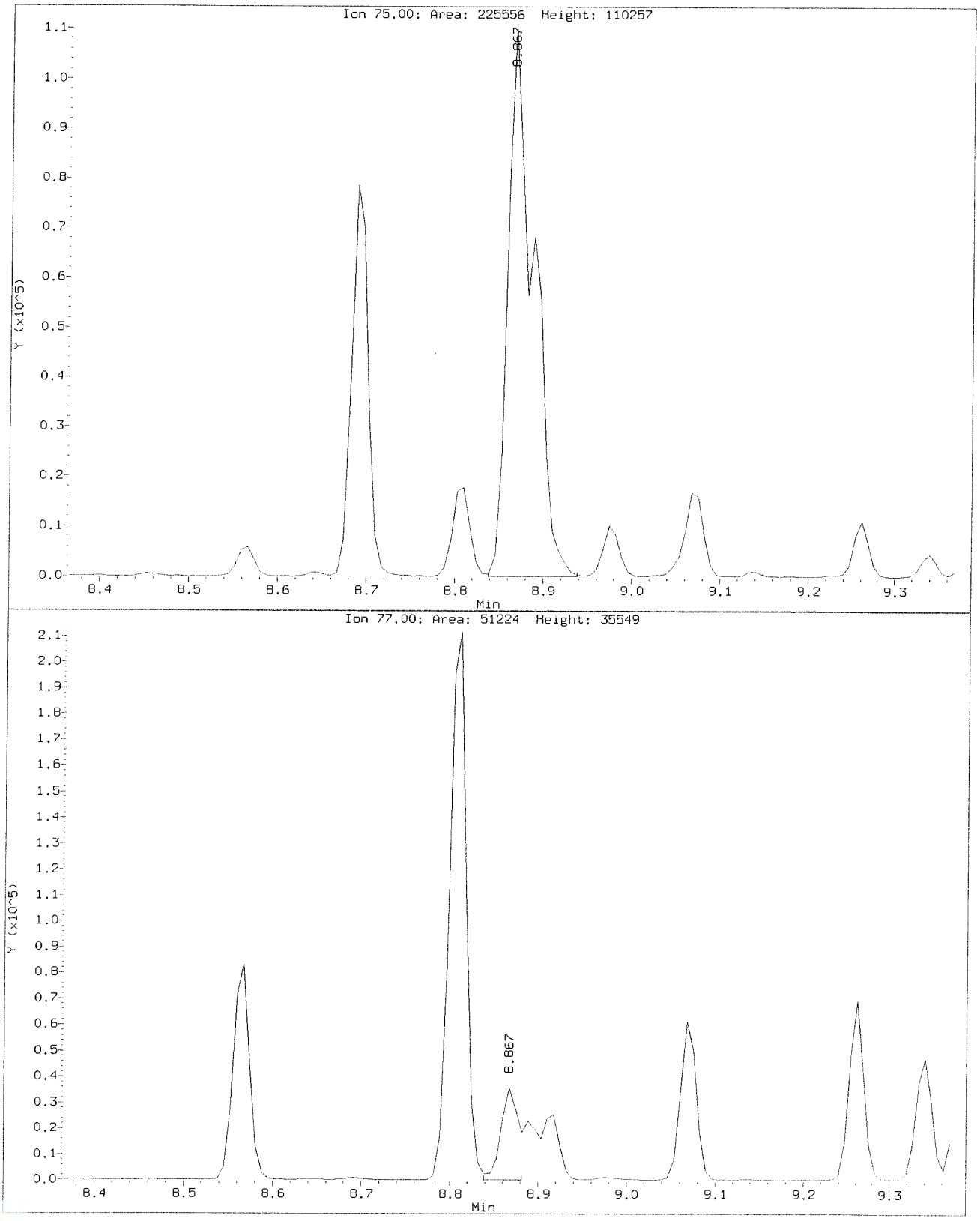
Client ID: ICV
Sample Info: CCV;CCV;2;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191118.b\BEFORE\X111814.D
Injection Date: 18-NOV-2019 18:58
Instrument: voa6.i
Client Sample ID: ICV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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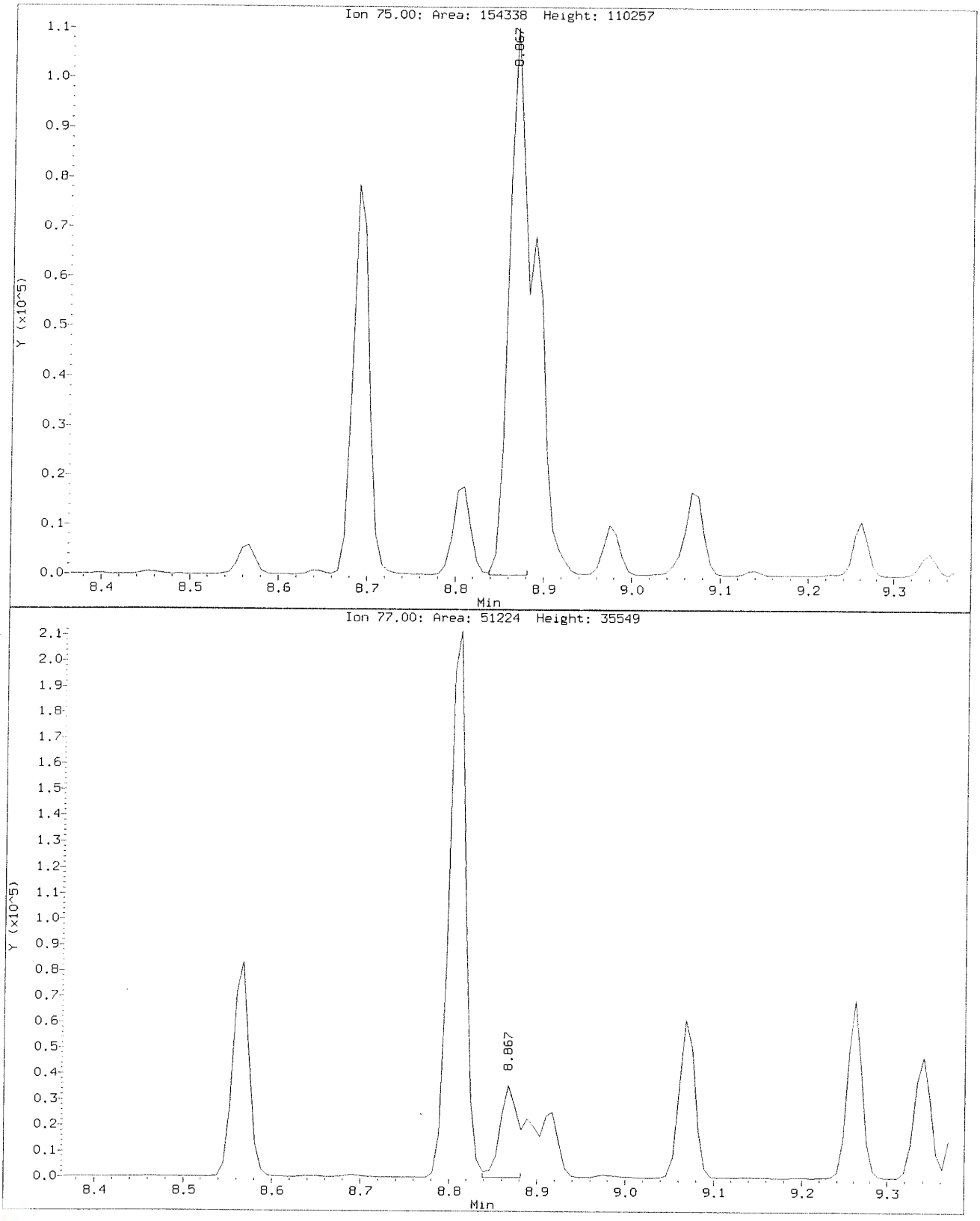
Injection Date: 18-NOV-2019 18:58
Instrument: voa6.i
Client Sample ID: ICV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



MSVOA06 -Logbook

Batch: 38439
Date: 12-06-2019
Method: 8260
Comments:

Analyst: Presenta Cabascango
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	12-06-2019 10:32 am	1.00	50 mL	50 mL	X120601.D	Liquid	Y	NA
	Auto find/ purged									
2	CCV	CCV	12-06-2019 10:56 am	1.00	50 mL	50 mL	X120602.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
3	BLANK	SAMP	12-06-2019 11:20 am	1.00	50 mL	50 mL	X120603.D	Liquid	Y	NA
4	CCB	SAMP	12-06-2019 11:44 am	1.00	50 mL	50 mL	X120604.D	Liquid	Y	NA
	ccb									
5	VLCSW-191206	LCS	12-06-2019 12:08 pm	1.00	50 mL	50 mL	X120605.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
6	BLK	SAMP	12-06-2019 12:32 pm	1.00	50 mL	50 mL	X120606.D	Liquid	Y	NA
7	VBLKW-191206	MBLK	12-06-2019 12:56 pm	1.00	50 mL	50 mL	X120607.D	Liquid	Y	NA
8	HS19120153-07	SAMP	12-06-2019 01:20 pm	1.00	50 mL	50 mL	X120608.D	Liquid	Y	NA
9	HS19120153-06	SAMP	12-06-2019 01:48 pm	1.00	50 mL	50 mL	X120609.D	Liquid	Y	NA
10	HS19120153-01	SAMP	12-06-2019 02:12 pm	1.00	50 mL	50 mL	X120610.D	Liquid	Y	NA
11	HS19120153-02	SAMP	12-06-2019 02:36 pm	1.00	50 mL	50 mL	X120611.D	Liquid	Y	NA
12	HS19120153-03	SAMP	12-06-2019 03:00 pm	1.00	50 mL	50 mL	X120612.D	Liquid	Y	NA
13	HS19120153-04	SAMP	12-06-2019 03:24 pm	1.00	50 mL	50 mL	X120613.D	Liquid	Y	NA
14	HS19120153-05	SAMP	12-06-2019 03:48 pm	1.00	50 mL	50 mL	X120614.D	Liquid	Y	NA
15	HS19120078-03	SAMP	12-06-2019 04:12 pm	1.00	50 mL	50 mL	X120615.D	Liquid	Y	NA
16	HS19120078-04	SAMP	12-06-2019 04:36 pm	1.00	50 mL	50 mL	X120616.D	Liquid	Y	NA
17	HS19120078-02	SAMP	12-06-2019 05:00 pm	10.00	5 mL	50 mL	X120617.D	Liquid	Y	NA
18	HS19120153-06MS	MS	12-06-2019 05:24 pm	1.00	50 mL	50 mL	X120618.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
19	HS19120153-06MSD	MSD	12-06-2019 05:48 pm	1.00	50 mL	50 mL	X120619.D	Liquid	Y	NA
	3.5 uL cal std/40 mL samp									
20	CCV-END	CCV	12-06-2019 06:12 pm	1.00	50 mL	50 mL	X120620.D	Liquid	Y	NA
21	HS19120283-02	SAMP	12-06-2019 06:36 pm	1.00	50 mL	50 mL	X120621.D	Liquid	Y	NA
22	HS19120279-01	SAMP	12-06-2019 07:00 pm	1.00	50 mL	50 mL	X120622.D	Liquid	Y	NA
23	HS19120279-02	SAMP	12-06-2019 07:24 pm	1.00	50 mL	50 mL	X120623.D	Liquid	Y	NA
24	HS19120161-05	SAMP	12-06-2019 07:48 pm	1.00	50 mL	50 mL	X120624.D	Liquid	Y	NA
25	HS19120161-01	SAMP	12-06-2019 08:12 pm	1.00	50 mL	50 mL	X120625.D	Liquid	Y	NA
26	HS19120161-02	SAMP	12-06-2019 08:36 pm	1.00	50 mL	50 mL	X120626.D	Liquid	Y	NA
27	HS19120161-03	SAMP	12-06-2019 09:00 pm	1.00	50 mL	50 mL	X120627.D	Liquid	Y	NA
28	HS19120161-04	SAMP	12-06-2019 09:24 pm	1.00	50 mL	50 mL	X120628.D	Liquid	Y	NA
29	HS19120161-06	SAMP	12-06-2019 09:48 pm	1.00	50 mL	50 mL	X120629.D	Liquid	Y	NA
30	HS19120161-07	SAMP	12-06-2019 10:12 pm	1.00	50 mL	50 mL	X120630.D	Liquid	Y	NA
31	BFB	TUNE	12-06-2019 10:36 pm	1.00	50 mL	50 mL	Y120601.D	Liquid	Y	NA
	auto find/ purged									
32	CCV	CCV	12-06-2019 11:00 pm	1.00	50 mL	50 mL	Y120602a.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
33	CCV	CCV	12-06-2019 11:24 pm	1.00	50 mL	50 mL	Y120603.D	Liquid	Y	NA
	10 uL cal std/50 mL DI									
34	CCB	SAMP	12-06-2019 11:48 pm	1.00	50 mL	50 mL	Y120604.D	Liquid	Y	NA
35	VLCSW-191206	LCS	12-07-2019 12:12 am	1.00	50 mL	50 mL	Y120605.D	Liquid	Y	NA
	4.0 uL cal std/50 mL DI									
36	BLK	SAMP	12-07-2019 12:36 am	1.00	50 mL	50 mL	Y120606.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
37	VBLKW-191206	MBLK	12-07-2019 01:00 am	1.00	50 mL	50 mL	Y120607.D	Liquid	Y	NA
38	HS19120244-01	SAMP	12-07-2019 01:24 am	1.00	50 mL	50 mL	Y120608.D	Liquid	Y	NA
39	MBLK-148320	MBLK	12-07-2019 01:48 am	1.00	50 mL	50 mL	Y120609.D	Liquid	Y	NA
40	HS19111193-06	SAMP	12-07-2019 02:13 am	1.00	50 mL	50 mL	Y120610.D	Liquid	Y	NA
41	HS19111193-13	SAMP	12-07-2019 02:37 am	1.00	50 mL	50 mL	Y120611.D	Liquid	Y	NA
42	HS19120244-01MS	MS	12-07-2019 03:01 am	1.00	50 mL	50 mL	Y120612.D	Liquid	Y	NA
43	*3.5 uL cal std/40 mL samp* HS19120244-01MSD	MSD	12-07-2019 03:25 am	1.00	50 mL	50 mL	Y120613.D	Liquid	Y	NA
44	*3.5 uL cal std/40 mL samp* HS19120245-01	SAMP	12-07-2019 03:49 am	1.00	50 mL	50 mL	Y120614.D	Liquid	Y	NA
45	MBLK-148327	MBLK	12-07-2019 04:13 am	20.00	2.5 mL	50 mL	Y120615.D	Liquid	Y	NA
46	HS19120158-01	SAMP	12-07-2019 04:37 am	20.00	2.5 mL	50 mL	Y120616.D	Liquid	Y	NA
47	HS19120191-01	SAMP	12-07-2019 05:01 am	20.00	2.5 mL	50 mL	Y120617.D	Liquid	Y	NA
48	HS19120061-01	SAMP	12-07-2019 05:25 am	20.00	2.5 mL	50 mL	Y120618.D	Liquid	Y	NA
49	HS19120171-01	SAMP	12-07-2019 05:49 am	20.00	2.5 mL	50 mL	Y120619.D	Liquid	Y	NA
50	HS19120171-03	SAMP	12-07-2019 06:13 am	20.00	2.5 mL	50 mL	Y120620.D	Liquid	Y	NA
51	HS19120171-02	SAMP	12-07-2019 06:37 am	20.00	2.5 mL	50 mL	Y120621.D	Liquid	Y	NA
52	HS19120082-01	SAMP	12-07-2019 07:01 am	50.00	1 mL	50 mL	Y120622.D	Liquid	Y	NA
53	HS19120135-01	SAMP	12-07-2019 07:25 am	1000.0	50 µL	50 mL	Y120623.D	Liquid	Y	NA
54	HS19120284-03	SAMP	12-07-2019 07:49 am	1.00	50 mL	50 mL	Y120624.D	Liquid	Y	NA
55	HS19120137-37	SAMP	12-07-2019 08:14 am	1.00	50 mL	50 mL	Y120625.D	Liquid	Y	NA
56	HS19120137-38	SAMP	12-07-2019 08:38 am	1.00	50 mL	50 mL	Y120626.D	Liquid	Y	NA
57	HS19120137-39	SAMP	12-07-2019 09:02 am	1.00	50 mL	50 mL	Y120627.D	Liquid	Y	NA
58	HS19120137-40	SAMP	12-07-2019 09:26 am	1.00	50 mL	50 mL	Y120628.D	Liquid	Y	NA
59	HS19120137-43	SAMP	12-07-2019 09:50 am	1.00	50 mL	50 mL	Y120629.D	Liquid	Y	NA
60	HS19120137-44	SAMP	12-07-2019 10:14 am	1.00	50 mL	50 mL	Y120630.D	Liquid	Y	NA

Chemical	Value
SURR SPK ID	31106-04-03
IS ID	31106-04-04
LCS/MS ID	30603-94-01
CAL STD ID	31106-06-01/02
BFB ID	31106-04-03
pH Paper	634-64-11

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19120153

	CLIENT SAMPLE NO.	SMC1 #	SMC2 #	SMC3 (TOL) #	OTHER (DCE) #	TOT OUT
01	VLCSW-19206	99	102	92	106	0
02	VBLKW-191206	98	101	96	100	0
03	HS19120153-07	100	100	96	99	0
04	HS19120153-06	99	101	97	100	0
05	HS19120153-01	100	100	96	99	0
06	HS19120153-02	100	100	96	101	0
07	HS19120153-03	99	100	96	100	0
08	HS19120153-04	101	101	95	102	0
09	HS19120153-05	102	100	96	100	0
10	HS19120153-06	101	101	94	102	0
11	HS19120153-06	100	100	95	101	0
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1	= 4-Bromofluorobenzene	(70-130)
SMC2	= Dibromofluoromethane	(70-130)
SMC3 (TOL)	= Toluene-d8	(0-130)
OTHER(DCE)	= 1,2-Dichloroethane-d4	(0-130)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKW-191206

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19120153

Lab File ID: X120607 Lab Sample ID: VBLKW-191206

Date Analyzed: 12/06/19 Time Analyzed: 1256

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLCSW-19206	VLCSW-191206	X120605	1208
02	HS19120153-0	HS19120153-07	X120608	1320
03	HS19120153-0	HS19120153-06	X120609	1348
04	HS19120153-0	HS19120153-01	X120610	1412
05	HS19120153-0	HS19120153-02	X120611	1436
06	HS19120153-0	HS19120153-03	X120612	1500
07	HS19120153-0	HS19120153-04	X120613	1524
08	HS19120153-0	HS19120153-05	X120614	1548
09	HS19120153-0	HS19120153-06M	X120618	1724
10	HS19120153-0	HS19120153-06M	X120619	1748
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COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19120153

Lab File ID: X120601 BFB Injection Date: 12/06/19

Instrument ID: VOA6 BFB Injection Time: 1032

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.8
75	30.0 - 60.0% of mass 95	48.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.9
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	Greater than 50.0% of mass 95	74.6
175	5.0 - 9.0% of mass 174	6.3 (8.5)1
176	95.0 - 101.0% of mass 174	72.3 (96.8)1
177	5.0 - 9.0% of mass 176	5.7 (7.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X120602	12/06/19	1056
02	VLCSW-19206	VLCSW-191206	X120605	12/06/19	1208
03	VBLKW-191206	VBLKW-191206	X120607	12/06/19	1256
04	HS19120153-0	HS19120153-07	X120608	12/06/19	1320
05	HS19120153-0	HS19120153-06	X120609	12/06/19	1348
06	HS19120153-0	HS19120153-01	X120610	12/06/19	1412
07	HS19120153-0	HS19120153-02	X120611	12/06/19	1436
08	HS19120153-0	HS19120153-03	X120612	12/06/19	1500
09	HS19120153-0	HS19120153-04	X120613	12/06/19	1524
10	HS19120153-0	HS19120153-05	X120614	12/06/19	1548
11	HS19120153-0	HS19120153-06M	X120618	12/06/19	1724
12	HS19120153-0	HS19120153-06M	X120619	12/06/19	1748
13	CCV-END	CCV-END	X120620	12/06/19	1812
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19120153

Instrument ID: VOA6 Calibration Date: 12/06/19 Time: 1056

Lab File ID: X120602 Init. Calib. Date(s): 11/18/19 11/18/19

Init. Calib. Times: 1347 1746

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	0.4880000	0.5074399	0.5074399	0.2	-3.98	20.00	AVRG
trans-1,3-Dichloropropene	0.4440000	0.4583124	0.4583124	0.1	-3.22	20.00	AVRG
1,3-Dichlorobenzene	1.4340000	1.4731550	1.4731550	0.6	-2.73	20.00	AVRG
2,2-Dichloropropane	0.6600000	0.6739964	0.6739964	0.1	-2.12	20.00	AVRG
1,1-Dichloropropene	0.4030000	0.3930768	0.3930768	0.1	2.46	20.00	AVRG
Dibromomethane	0.2110000	0.2138447	0.2138447	0.1	-1.35	20.00	AVRG
1,2-Dibromoethane	0.3510000	0.3538207	0.3538207	0.1	-0.80	20.00	AVRG
trans-1,2-Dichloroethene	0.4110000	0.4214953	0.4214953	0.1	-2.55	20.00	AVRG
1,1,1,2-Tetrachloroethane	0.3630000	0.3619207	0.3619207	0.1	0.30	20.00	AVRG
1,1,1-Trichloroethane	0.6740000	0.6799712	0.6799712	0.1	-0.88	20.00	AVRG
1,1,2,2-Tetrachloroethane	0.7030000	0.7123302	0.7123302	0.3	-1.33	20.00	AVRG
Toluene	1.4180000	1.4086599	1.4086599	0.4	0.66	20.00	AVRG
1,1,2-Trichloroethane	0.2610000	0.2621745	0.2621745	0.1	-0.45	20.00	AVRG
1,1-Dichloroethane	0.7270000	0.7494890	0.7494890	0.2	-3.09	20.00	AVRG
1,1-Dichloroethene	0.4240000	0.3725608	0.3725608	0.1	12.13	20.00	AVRG
Trichlorofluoromethane	0.7760000	0.7108849	0.7108849	0.1	8.39	20.00	AVRG
1,2,3-Trichlorobenzene	44.923180	50.000000	0.1672846	0.1	10.15	20.00	2RDR
Tetrachloroethene	0.3510000	0.3220076	0.3220076	0.2	8.26	20.00	AVRG
1,2,4-Trichlorobenzene	0.4210000	0.3580656	0.3580656	0.2	14.95	20.00	AVRG
1,2,4-Trimethylbenzene	2.3720000	2.4885743	2.4885743	0.1	-4.91	20.00	AVRG
tert-Butylbenzene	1.9490000	1.9856871	1.9856871	0.1	-1.88	20.00	AVRG
Trichloroethene	0.3500000	0.3522722	0.3522722	0.2	-0.65	20.00	AVRG
1,2-Dichlorobenzene	1.3270000	1.3311565	1.3311565	0.4	-0.31	20.00	AVRG
1,2-Dichloroethane	0.3970000	0.4135948	0.4135948	0.1	-4.18	20.00	AVRG
1,2-Dichloropropane	0.2990000	0.3000821	0.3000821	0.1	-0.36	20.00	AVRG
1,3,5-Trimethylbenzene	2.2760000	2.3727323	2.3727323	0.1	-4.25	20.00	AVRG
1,3-Dichloropropane	0.5310000	0.5340959	0.5340959	0.1	-0.58	20.00	AVRG
1,4-Dichlorobenzene	1.4570000	1.4849466	1.4849466	0.4	-1.92	20.00	AVRG
2-Butanone	0.1530000	0.1591426	0.1591426	0.1	-4.01	20.00	AVRG
2-Chlorotoluene	1.7990000	1.9759868	1.9759868	0.1	-9.84	20.00	AVRG
2-Hexanone	0.2050000	0.2028500	0.2028500	0.1	1.05	20.00	AVRG
4-Chlorotoluene	2.1800000	2.3054231	2.3054231	0.1	-5.75	20.00	AVRG
Styrene	1.0440000	1.0485002	1.0485002	0.3	-0.43	20.00	AVRG
4-Methyl-2-Pentanone	0.2930000	0.2906040	0.2906040	0.1	0.82	20.00	AVRG
Acetone	96.416081	100.00000	0.1249762	0.1	3.58	20.00	LINR
Benzene	1.1440000	1.1791979	1.1791979	0.5	-3.08	20.00	AVRG
Bromobenzene	0.8690000	0.9226471	0.9226471	0.1	-6.17	20.00	AVRG
Bromochloromethane	0.2710000	0.2761211	0.2761211	0.1	-1.89	20.00	AVRG
Bromodichloromethane	0.4140000	0.4271763	0.4271763	0.2	-3.18	20.00	AVRG
Bromoform	47.895679	50.000000	0.2849402	0.1	4.21	20.00	LINR
Bromomethane	45.584903	50.000000	0.4552275	0.1	8.83	20.00	LINR
Carbon Disulfide	1.1530000	1.1806646	1.1806646	0.1	-2.40	20.00	AVRG

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912015

Instrument ID: VOA6 Calibration Date: 12/06/19 Time: 1056

Lab File ID: X120602 Init. Calib. Date(s): 11/18/19 11/18/19

Init. Calib. Times: 1347 1746

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Carbon Tetrachloride	0.4420000	0.4161720	0.4161720	0.1	5.84	20.00	AVRG
Chlorobenzene	0.9760000	0.9588933	0.9588933	0.5	1.75	20.00	AVRG
Chloroethane	0.3150000	0.2866322	0.2866322	0.1	9.00	20.00	AVRG
Chloroform	0.8100000	0.8092819	0.8092819	0.2	0.09	20.00	AVRG
Chloromethane	40.170747	50.000000	0.4358809	0.1	19.66	20.00	LINR
cis-1,2-Dichloroethene	0.4740000	0.5017096	0.5017096	0.1	-5.84	20.00	AVRG
Dibromochloromethane	0.3800000	0.3849682	0.3849682	0.1	-1.31	20.00	AVRG
Dichlorodifluoromethane	53.104077	50.000000	0.4843953	0.1	-6.21	20.00	LINR
Ethylbenzene	0.5040000	0.4950749	0.4950749	0.1	1.77	20.00	AVRG
Hexachlorobutadiene	0.4020000	0.3246122	0.3246122	0.1	19.25	20.00	AVRG
Isopropylbenzene	1.4940000	1.4376790	1.4376790	0.1	3.77	20.00	AVRG
m,p-Xylenes	0.6080000	0.6036338	0.6036338	0.1	0.72	20.00	AVRG
Methylene Chloride	0.4520000	0.4515807	0.4515807	0.1	0.09	20.00	AVRG
n-Butylbenzene	2.0360000	2.1103624	2.1103624	0.5	-3.65	20.00	AVRG
n-Propylbenzene	3.0900000	3.2361544	3.2361544	0.1	-4.73	20.00	AVRG
Naphthalene	0.5400000	0.4714938	0.4714938	0.2	12.69	20.00	AVRG
o-Xylene	0.6000000	0.5826389	0.5826389	0.3	2.89	20.00	AVRG
sec-Butylbenzene	2.6850000	2.7447432	2.7447432	0.1	-2.22	20.00	AVRG
Vinyl Chloride	0.5100000	0.4683529	0.4683529	0.1	8.17	20.00	AVRG
1,2,3-Trichloropropane	0.5960000	0.6192286	0.6192286	0.1	-3.90	20.00	AVRG
p-Isopropyltoluene	2.4460000	2.4986318	2.4986318	0.1	-2.15	20.00	AVRG
1,2-Dibromo-3-Chloropropane	48.465584	50.000000	7.53e-002	0.05	3.07	20.00	LINR
Freon TF	0.4350000	0.3722159	0.3722159	0.1	14.43	20.00	AVRG
4-Bromofluorobenzene	52.248887	50.000000	0.4862862	0.1	-4.50	20.00	LINR
Dibromofluoromethane	52.701839	50.000000	0.4793920	0.1	-5.40	20.00	LINR
Toluene-d8	1.3170000	1.2664886	1.2664886	0.1	3.84	20.00	AVRG
1,2-Dichloroethane-d4	54.276403	50.000000	0.5112327	0.1	-8.55	20.00	LINR

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19120153

Instrument ID: VOA6 Calibration Date: 12/06/19 Time: 1812

Lab File ID: X120620 Init. Calib. Date(s): 11/18/19 11/18/19

Init. Calib. Times: 1347 1746

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
cis-1,3-Dichloropropene	0.4880000	0.4962694	0.4962694	0.2	-1.69	50.00	AVRG
trans-1,3-Dichloropropene	0.4440000	0.4520695	0.4520695	0.1	-1.82	50.00	AVRG
1,3-Dichlorobenzene	1.4340000	1.3947804	1.3947804	0.6	2.73	50.00	AVRG
2,2-Dichloropropane	0.6600000	0.6176787	0.6176787	0.1	6.41	50.00	AVRG
1,1-Dichloropropene	0.4030000	0.3656622	0.3656622	0.1	9.26	50.00	AVRG
Dibromomethane	0.2110000	0.2128867	0.2128867	0.1	-0.89	50.00	AVRG
1,2-Dibromoethane	0.3510000	0.3540049	0.3540049	0.1	-0.86	50.00	AVRG
trans-1,2-Dichloroethene	0.4110000	0.4209044	0.4209044	0.1	-2.41	50.00	AVRG
1,1,1,2-Tetrachloroethane	0.3630000	0.3550488	0.3550488	0.1	2.19	50.00	AVRG
1,1,1-Trichloroethane	0.6740000	0.6532665	0.6532665	0.1	3.08	50.00	AVRG
1,1,2,2-Tetrachloroethane	0.7030000	0.7247408	0.7247408	0.3	-3.09	50.00	AVRG
Toluene	1.4180000	1.3548323	1.3548323	0.4	4.45	50.00	AVRG
1,1,2-Trichloroethane	0.2610000	0.2613346	0.2613346	0.1	-0.13	50.00	AVRG
1,1-Dichloroethane	0.7270000	0.7542277	0.7542277	0.2	-3.74	50.00	AVRG
1,1-Dichloroethene	0.4240000	0.3601299	0.3601299	0.1	15.06	50.00	AVRG
Trichlorofluoromethane	0.7760000	0.6384597	0.6384597	0.1	17.72	50.00	AVRG
1,2,3-Trichlorobenzene	39.003726	50.000000	0.1455587	0.1	21.99	50.00	2RDR
Tetrachloroethene	0.3510000	0.2945947	0.2945947	0.2	16.07	50.00	AVRG
1,2,4-Trichlorobenzene	0.4210000	0.3185184	0.3185184	0.2	24.34	50.00	AVRG
1,2,4-Trimethylbenzene	2.3720000	2.2913559	2.2913559	0.1	3.40	50.00	AVRG
tert-Butylbenzene	1.9490000	1.7725742	1.7725742	0.1	9.05	50.00	AVRG
Trichloroethene	0.3500000	0.3399949	0.3399949	0.2	2.86	50.00	AVRG
1,2-Dichlorobenzene	1.3270000	1.2676357	1.2676357	0.4	4.47	50.00	AVRG
1,2-Dichloroethane	0.3970000	0.4159243	0.4159243	0.1	-4.77	50.00	AVRG
1,2-Dichloropropane	0.2990000	0.2981990	0.2981990	0.1	0.27	50.00	AVRG
1,3,5-Trimethylbenzene	2.2760000	2.1933585	2.1933585	0.1	3.63	50.00	AVRG
1,3-Dichloropropane	0.5310000	0.5283950	0.5283950	0.1	0.49	50.00	AVRG
1,4-Dichlorobenzene	1.4570000	1.4093692	1.4093692	0.4	3.27	50.00	AVRG
2-Butanone	0.1530000	0.1577967	0.1577967	0.1	-3.14	50.00	AVRG
2-Chlorotoluene	1.7990000	1.8505254	1.8505254	0.1	-2.86	50.00	AVRG
2-Hexanone	0.2050000	0.2046634	0.2046634	0.1	0.16	50.00	AVRG
4-Chlorotoluene	2.1800000	2.1814262	2.1814262	0.1	-0.06	50.00	AVRG
Styrene	1.0440000	1.0140282	1.0140282	0.3	2.87	50.00	AVRG
4-Methyl-2-Pentanone	0.2930000	0.3005282	0.3005282	0.1	-2.57	50.00	AVRG
Acetone	88.493732	100.00000	0.1151023	0.1	11.51	50.00	LINR
Benzene	1.1440000	1.1639512	1.1639512	0.5	-1.74	50.00	AVRG
Bromobenzene	0.8690000	0.8762741	0.8762741	0.1	-0.84	50.00	AVRG
Bromochloromethane	0.2710000	0.2752438	0.2752438	0.1	-1.56	50.00	AVRG
Bromodichloromethane	0.4140000	0.4234209	0.4234209	0.2	-2.28	50.00	AVRG
Bromoform	47.068386	50.000000	0.2799137	0.1	5.86	50.00	LINR
Bromomethane	45.321753	50.000000	0.4527288	0.1	9.36	50.00	LINR
Carbon Disulfide	1.1530000	1.1531082	1.1531082	0.1	-0.01	50.00	AVRG

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1912015

Instrument ID: VOA6 Calibration Date: 12/06/19 Time: 1812

Lab File ID: X120620 Init. Calib. Date(s): 11/18/19 11/18/19

Init. Calib. Times: 1347 1746

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Carbon Tetrachloride	0.4420000	0.3811411	0.3811411	0.1	13.77	50.00	AVRG
Chlorobenzene	0.9760000	0.9328967	0.9328967	0.5	4.42	50.00	AVRG
Chloroethane	0.3150000	0.2875975	0.2875975	0.1	8.70	50.00	AVRG
Chloroform	0.8100000	0.8039845	0.8039845	0.2	0.74	50.00	AVRG
Chloromethane	39.305914	50.000000	0.4264529	0.1	21.39	50.00	LINR
cis-1,2-Dichloroethene	0.4740000	0.5036563	0.5036563	0.1	-6.26	50.00	AVRG
Dibromochloromethane	0.3800000	0.3769237	0.3769237	0.1	0.81	50.00	AVRG
Dichlorodifluoromethane	47.703906	50.000000	0.4343054	0.1	4.59	50.00	LINR
Ethylbenzene	0.5040000	0.4692397	0.4692397	0.1	6.90	50.00	AVRG
Hexachlorobutadiene	0.4020000	0.2262739	0.2262739	0.1	43.71	50.00	AVRG
Isopropylbenzene	1.4940000	1.3203328	1.3203328	0.1	11.62	50.00	AVRG
m,p-Xylenes	0.6080000	0.5653489	0.5653489	0.1	7.01	50.00	AVRG
Methylene Chloride	0.4520000	0.4513068	0.4513068	0.1	0.15	50.00	AVRG
n-Butylbenzene	2.0360000	1.7612598	1.7612598	0.5	13.49	50.00	AVRG
n-Propylbenzene	3.0900000	2.9254877	2.9254877	0.1	5.32	50.00	AVRG
Naphthalene	0.5400000	0.4243912	0.4243912	0.2	21.41	50.00	AVRG
o-Xylene	0.6000000	0.5629643	0.5629643	0.3	6.17	50.00	AVRG
sec-Butylbenzene	2.6850000	2.3635744	2.3635744	0.1	11.97	50.00	AVRG
Vinyl Chloride	0.5100000	0.4555868	0.4555868	0.1	10.67	50.00	AVRG
1,2,3-Trichloropropane	0.5960000	0.6208125	0.6208125	0.1	-4.16	50.00	AVRG
p-Isopropyltoluene	2.4460000	2.1813053	2.1813053	0.1	10.82	50.00	AVRG
1,2-Dibromo-3-Chloropropane	47.624780	50.000000	7.4e-002	0.05	4.75	50.00	LINR
Freon TF	0.4350000	0.3126004	0.3126004	0.1	28.14	50.00	AVRG
4-Bromofluorobenzene	49.011761	50.000000	0.4559150	0.1	1.98	50.00	LINR
Dibromofluoromethane	50.137143	50.000000	0.4558987	0.1	-0.27	50.00	LINR
Toluene-d8	1.3170000	1.2019733	1.2019733	0.1	8.73	50.00	AVRG
1,2-Dichloroethane-d4	52.141175	50.000000	0.4908441	0.1	-4.28	50.00	LINR

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19120153

Lab File ID (Standard): X120602 Date Analyzed: 12/06/19

Instrument ID: VOA6 Time Analyzed: 1056

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1(DCB) AREA	#	RT	#	IS2(CBZ) AREA	#	RT	#	IS3(DFB) AREA	#	RT	#
	12 HOUR STD	288341		9.66		560493		7.67		613852		4.97	
	UPPER LIMIT	576682		10.16		1120986		8.17		1227704		5.47	
	LOWER LIMIT	144171		9.16		280247		7.17		306926		4.47	
	CLIENT SAMPLE NO.												
01	VLCSW-19206	288705		9.67		556445		7.67		606782		4.97	
02	VBLKW-191206	406086		9.66		833032		7.67		922821		4.97	
03	HS19120153-07	436604		9.67		859749		7.67		951621		4.97	
04	HS19120153-06	425981		9.67		850846		7.67		956192		4.97	
05	HS19120153-01	447203		9.67		888925		7.67		981665		4.97	
06	HS19120153-02	452532		9.67		879641		7.67		974503		4.97	
07	HS19120153-03	452685		9.66		888141		7.67		987961		4.97	
08	HS19120153-04	478599		9.66		918517		7.67		1007240		4.97	
09	HS19120153-05	479034		9.67		918626		7.67		1016671		4.97	
10	HS19120153-06	453167		9.66		869328		7.67		947757		4.97	
11	HS19120153-06	411247		9.66		795379		7.67		868521		4.97	
12													
13													
14													
15													
16													
17													
18													
19													
20													

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DFB) = 1,4-Difluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ALS HOUSTON Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS19120153

Lab File ID (Standard): X120602 Date Analyzed: 12/06/19

Instrument ID: VOA6 Time Analyzed: 1056

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	426121	4.18				
	UPPER LIMIT	852242	4.68				
	LOWER LIMIT	213061	3.68				
	CLIENT SAMPLE NO.						
01	VLCSW-19206	417500	4.18				
02	VBLKW-191206	647910	4.18				
03	HS19120153-07	668863	4.18				
04	HS19120153-06	671992	4.18				
05	HS19120153-01	691485	4.18				
06	HS19120153-02	683661	4.18				
07	HS19120153-03	696495	4.18				
08	HS19120153-04	705294	4.18				
09	HS19120153-05	714142	4.18				
10	HS19120153-06	662708	4.18				
11	HS19120153-06	609830	4.18				
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 = Pentafluorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120601.D

Page 1

Date : 06-DEC-2019 10:32

Client ID: BFB

Instrument: voa6.i

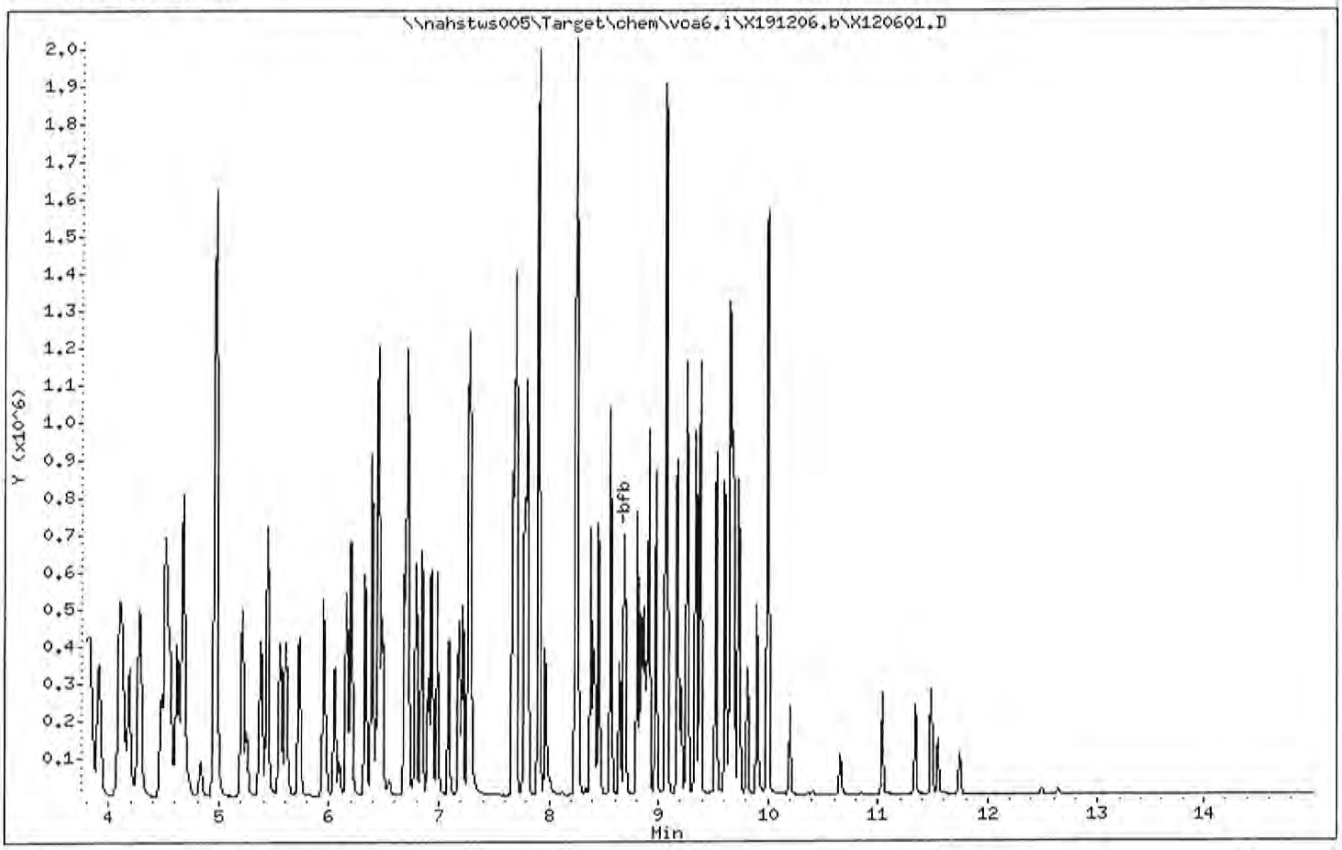
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120601.D

Date : 06-DEC-2019 10:32

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

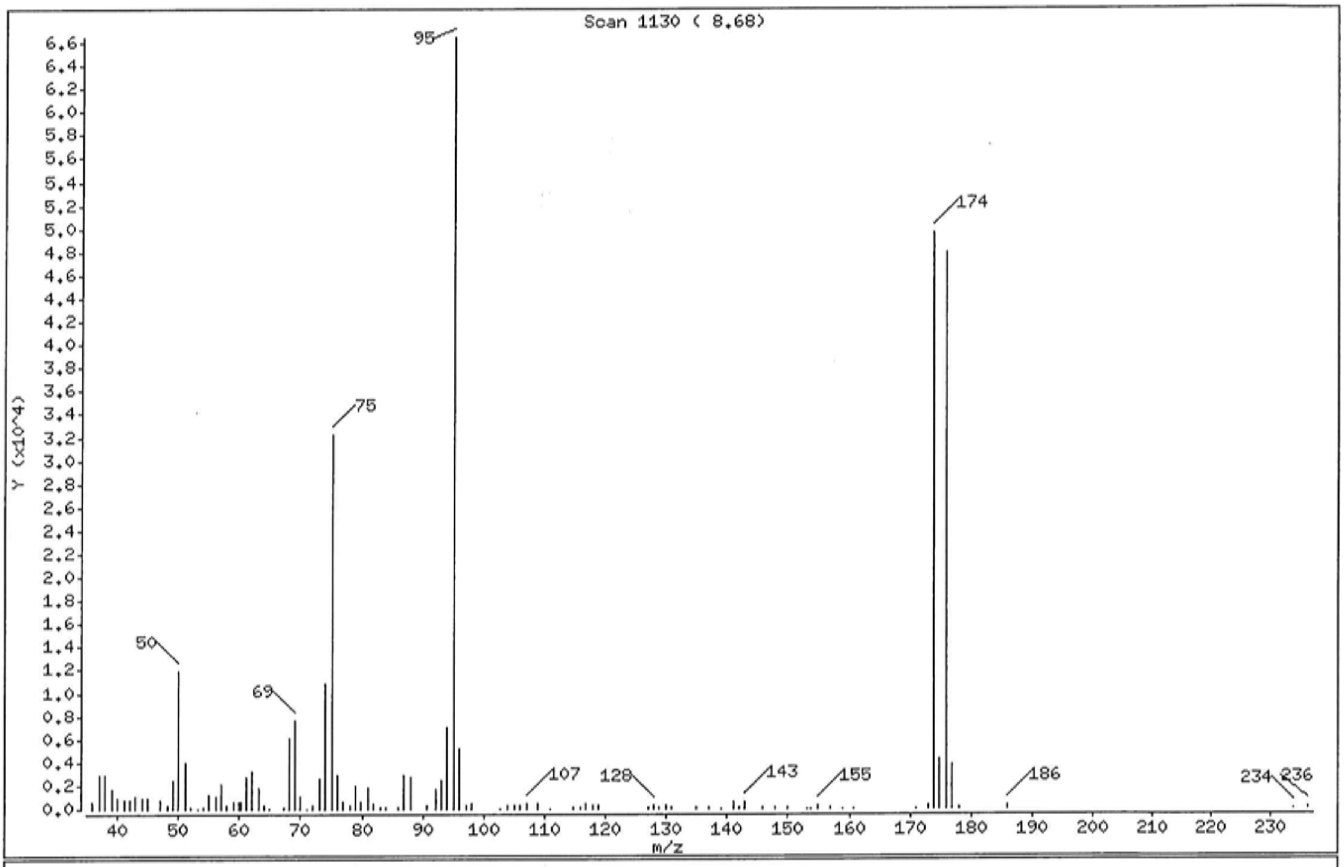
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.83
75	30.00 - 60.00% of mass 95	48.48
96	5.00 - 9.00% of mass 95	7.91
173	Less than 2.00% of mass 174	0.36 (0.48)
174	Greater than 50.00% of mass 95	74.64
175	5.00 - 9.00% of mass 174	6.33 (8.48)
176	95.00 - 101.00% of mass 174	72.26 (96.81)
177	5.00 - 9.00% of mass 176	5.66 (7.84)

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120601.D

Date : 06-DEC-2019 10:32

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X120601.D
Spectrum: Scan 1130 (8.68)
Location of Maximum: 95.00
Number of points: 101

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	553	62.00	3264	92.00	1746	139.00	52
37.00	2950	63.10	1840	93.00	2487	141.00	541
38.00	2905	64.00	259	94.00	7000	141.90	186
39.10	1743	65.00	66	95.00	66464	142.90	542
40.00	958	67.10	223	96.00	5258	145.90	128
41.10	827	68.00	6137	97.00	255	147.80	131
42.00	722	69.00	7577	98.00	532	149.80	84
43.00	1083	70.00	1015	102.70	51	153.00	58
44.00	925	71.00	76	103.90	316	153.80	58
45.00	867	71.90	332	104.90	236	154.80	263
47.00	828	73.00	2614	105.80	254	157.00	103
48.10	347	74.00	10836	107.00	495	158.90	58
49.00	2404	75.00	32224	108.90	392	160.80	66
50.00	11853	76.10	2975	110.80	74	171.00	73
51.00	3957	76.90	565	114.80	113	172.90	240
52.10	173	78.00	325	116.00	202	173.90	49608
53.10	67	78.90	1920	116.80	400	174.90	4207
54.00	131	79.90	648	117.80	230	175.90	48024
55.00	1232	80.90	1880	118.80	371	176.90	3763
56.10	1089	81.90	402	127.00	220	177.90	142
57.10	2137	83.00	166	127.80	269	186.00	270
57.90	233	83.90	140	128.90	135	233.80	74
59.00	618	86.10	80	129.80	236	235.90	98
59.90	535	86.90	2827	130.90	128		
60.10	540	87.90	2768	134.90	95		
61.00	2743	90.80	268	137.00	94		

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120602.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 06-DEC-2019 10:56
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;CCV
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:23 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

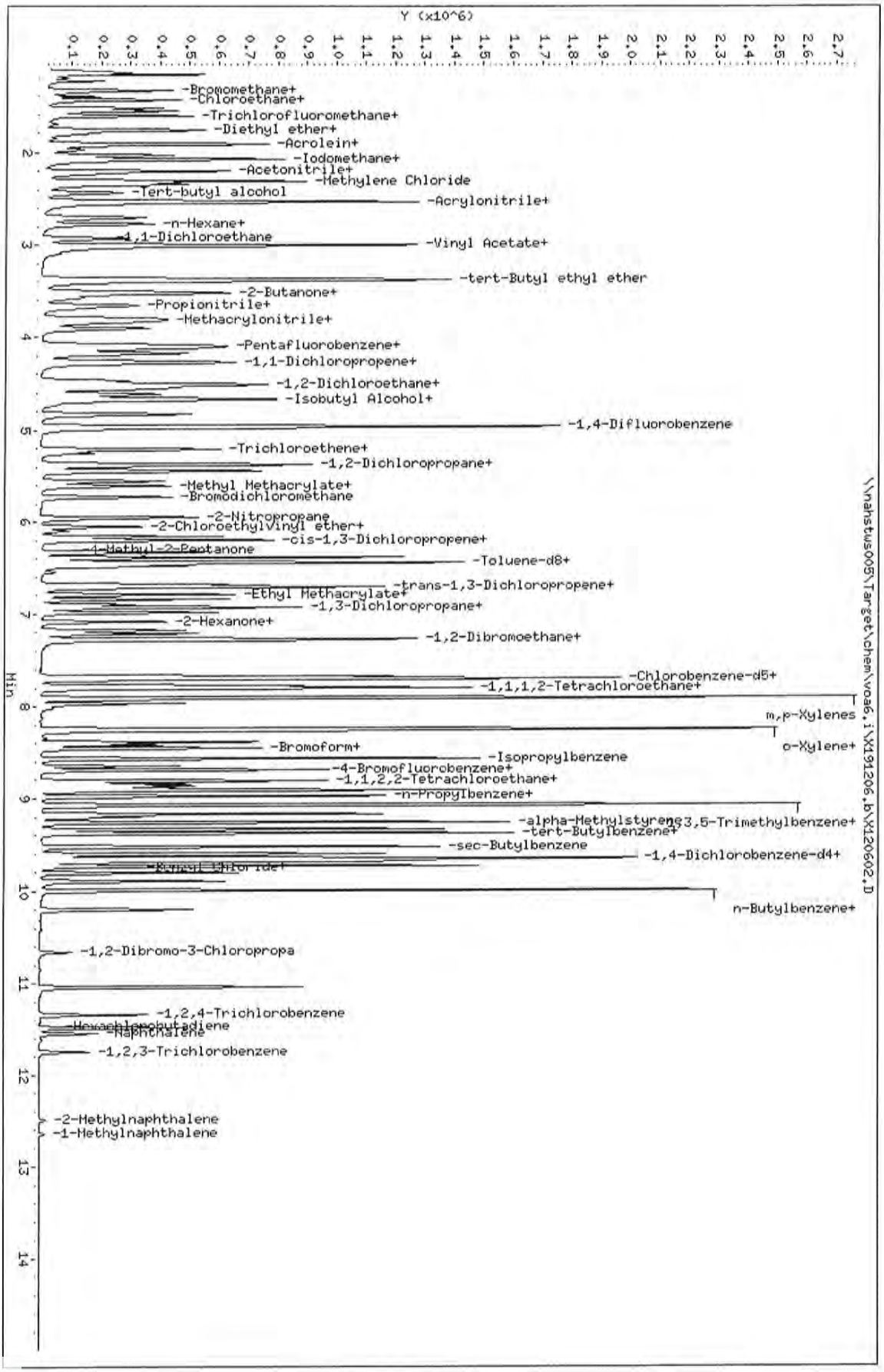
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	426121	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	613852	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	560493	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	288341	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	217847	50.0000	54.27
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	272560	50.0000	52.24
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	204279	50.0000	52.70
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	709858	50.0000	48.06
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	202854	50.0000	49.88
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	289750	50.0000	50.40
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	205394	50.0000	50.65
138 Freon TF	101	1.919	1.919	(0.459)	158609	50.0000	42.75
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	146947	50.0000	50.15
22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	319373	50.0000	51.51
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	158756	50.0000	43.96
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	241291	50.0000	48.72
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.216)	48235	50.0000	44.92
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	178549	50.0000	51.97(M)
90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	103245	50.0000	42.50
79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.971)	717558	50.0000	52.44
89 1,2-Dibromo-3-Chloropropane	155	10.657	10.657	(1.103)	21698	50.0000	48.46
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	198314	50.0000	50.44
88 1,2-Dichlorobenzene	146	9.998	9.998	(1.035)	383827	50.0000	50.15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
33	1,2-Dichloroethane	62	4.562	4.562	(0.918)	253886	50.0000	52.10
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	184206	50.0000	50.23
75	1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	684156	50.0000	52.11
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	424771	50.0000	51.36
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	299357	50.0000	50.32
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.002)	428171	50.0000	50.95
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	287204	50.0000	51.03
24	2-Butanone	43	3.573	3.573	(0.854)	135628	100.000	103.72
76	2-Chlorotoluene	91	8.974	8.974	(0.929)	569758	50.0000	54.92
52	2-Hexanone	43	7.090	7.090	(0.924)	227392	100.000	98.76
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	664748	50.0000	52.86
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	720458	50.0000	51.06
45	4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	325763	100.000	99.19
10	Acetone	43	1.976	1.976	(0.473)	106510	100.000	96.41
37	Benzene	78	4.519	4.519	(0.909)	723853	50.0000	51.54
74	Bromobenzene	156	8.809	8.809	(0.912)	266037	50.0000	53.08
29	Bromochloromethane	128	3.795	3.795	(0.908)	117661	50.0000	50.97
39	Bromodichloromethane	83	5.729	5.729	(1.153)	262223	50.0000	51.61
66	Bromoform	173	8.415	8.415	(1.097)	159707	50.0000	47.89
6	Bromomethane	94	1.338	1.338	(0.320)	193982	50.0000	45.58
19	Carbon Disulfide	76	2.069	2.069	(0.495)	1006212	100.000	102.42
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	255468	50.0000	47.09
59	Chlorobenzene	112	7.699	7.699	(1.004)	537453	50.0000	49.11
7	Chloroethane	64	1.403	1.403	(0.336)	122140	50.0000	45.52
28	Chloroform	83	3.910	3.910	(0.935)	344852	50.0000	49.97
3	Chloromethane	50	1.073	1.073	(0.257)	185738	50.0000	40.17
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	213789	50.0000	52.90
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	311493	50.0000	52.03
55	Dibromochloromethane	129	7.176	7.176	(0.936)	215772	50.0000	50.69
44	Dibromomethane	93	5.557	5.557	(1.118)	131269	50.0000	50.58
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	206411	50.0000	53.10
61	Ethylbenzene	106	7.799	7.799	(1.017)	277486	50.0000	49.07
91	Hexachlorobutadiene	225	11.488	11.488	(1.189)	93599	50.0000	40.39 (M)
67	Isopropylbenzene	105	8.566	8.566	(1.117)	805809	50.0000	48.11
62	m,p-Xylenes	106	7.907	7.907	(1.031)	676665	100.000	99.18
17	Methylene Chloride	84	2.305	2.305	(0.551)	192428	50.0000	49.94
87	n-Butylbenzene	91	9.998	9.998	(1.035)	608504	50.0000	51.82
73	n-Propylbenzene	91	8.917	8.917	(0.923)	933116	50.0000	52.35
92	Naphthalene	128	11.546	11.546	(1.195)	135951	50.0000	43.64
63	o-Xylene	106	8.244	8.244	(1.075)	326565	50.0000	48.49
81	sec-Butylbenzene	105	9.526	9.526	(0.986)	791422	50.0000	51.11
64	Styrene	104	8.258	8.258	(1.077)	587677	50.0000	50.19
78	tert-Butylbenzene	119	9.339	9.339	(0.967)	572555	50.0000	50.93
56	Tetrachloroethene	164	6.933	6.933	(0.904)	180483	50.0000	45.82
50	Toluene	91	6.446	6.446	(0.840)	789544	50.0000	49.67
20	trans-1,2-Dichloroethene	96	2.527	2.527	(0.604)	179608	50.0000	51.22
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	281336	50.0000	51.56
38	Trichloroethene	130	5.206	5.206	(1.048)	216243	50.0000	50.37
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	302923	50.0000	45.82
5	Vinyl Chloride	62	1.138	1.138	(0.272)	199575	50.0000	45.95

QC Flag Legend

M - Compound response manually integrated.



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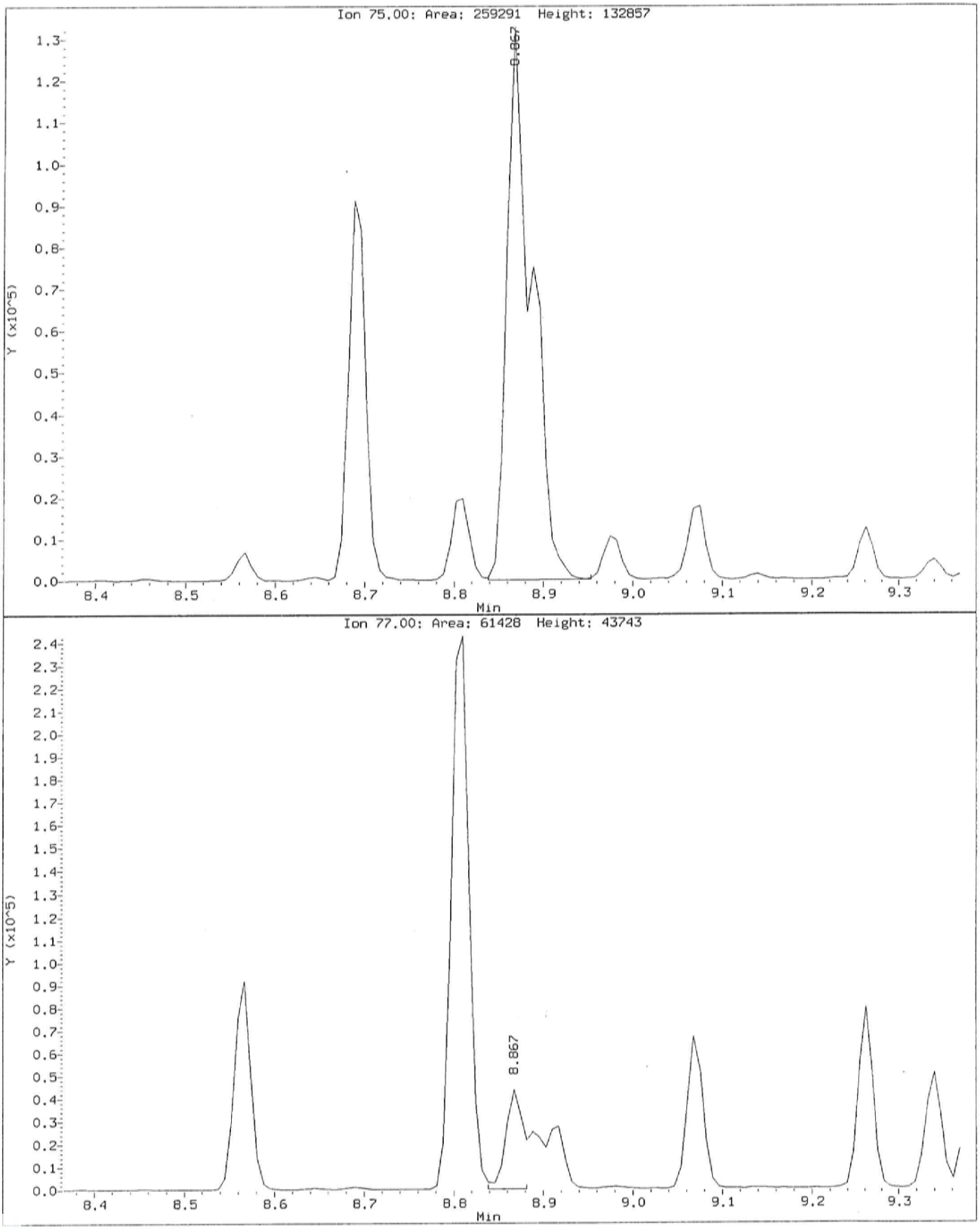
Date : 06-DEC-2019 10:56
Client ID: CCV
Sample Info: CCV;CCV;2;;CCV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\Before\X120602.D
Injection Date: 06-DEC-2019 10:56
Instrument: voa6.i
Client Sample ID: CCV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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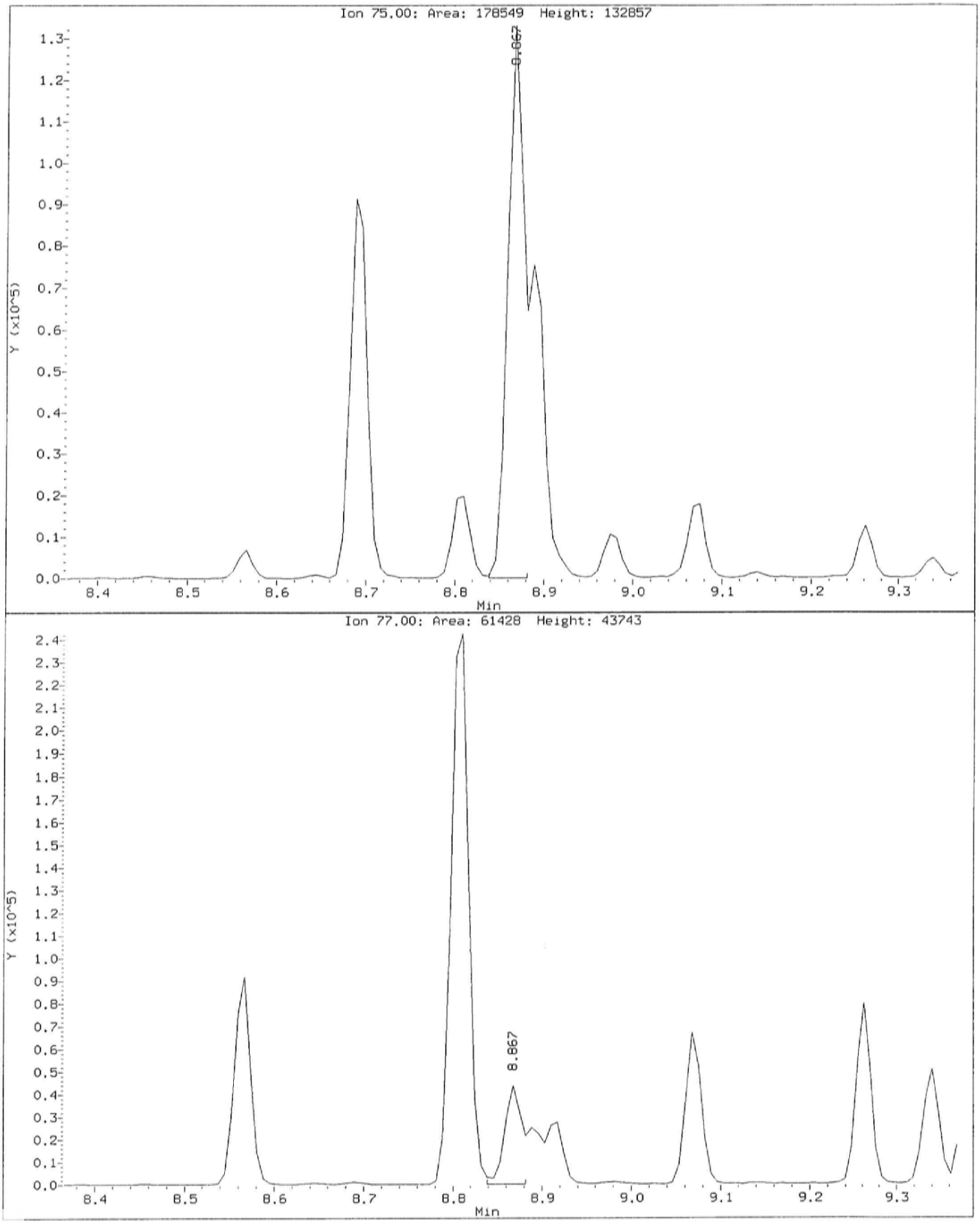
Injection Date: 06-DEC-2019 10:56
Instrument: voa6.i
Client Sample ID: CCV

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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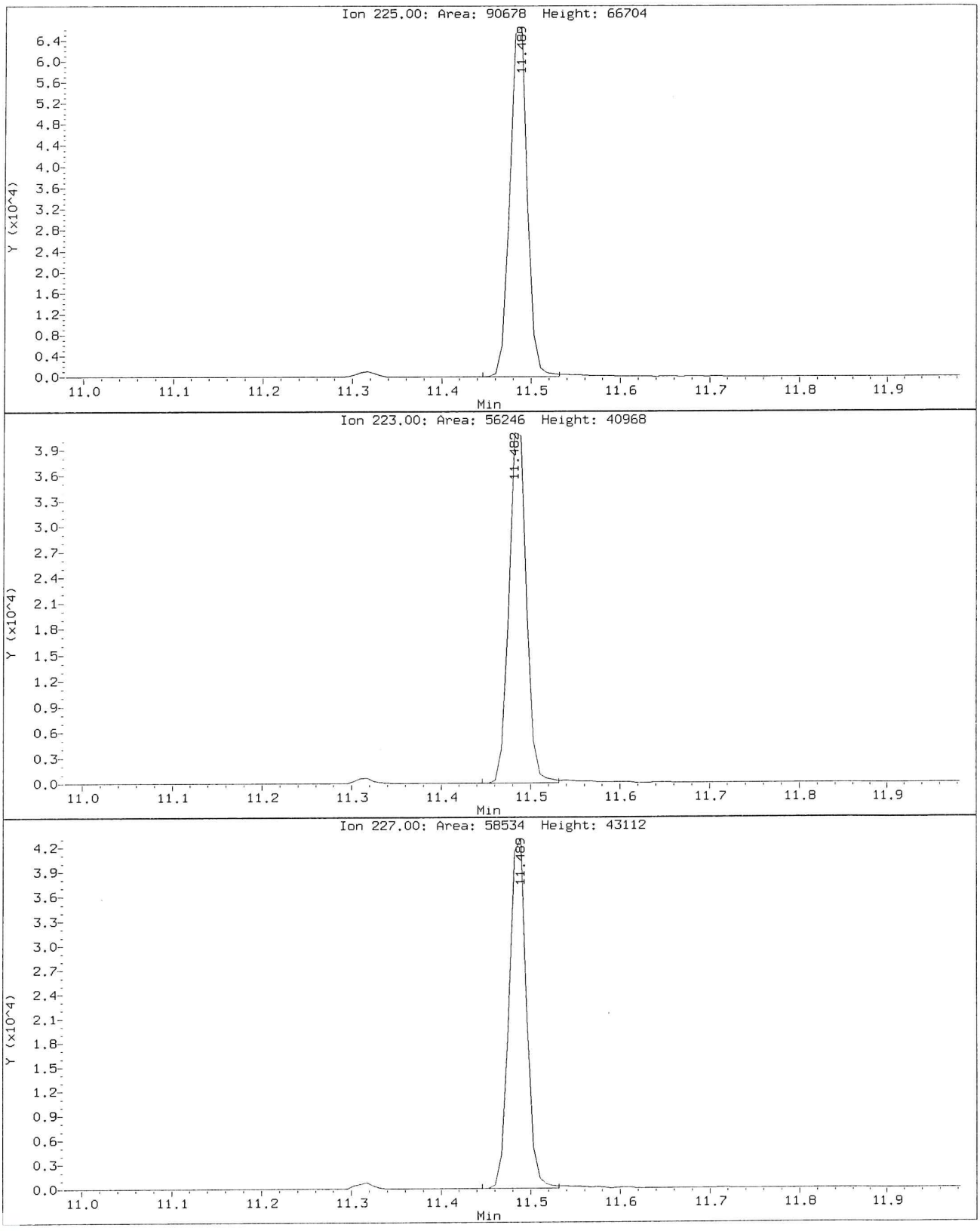
Injection Date: 06-DEC-2019 10:56
Instrument: voa6.i
Client Sample ID: CCV

Compound: Hexachlorobutadiene
CAS Number: 87-68-3



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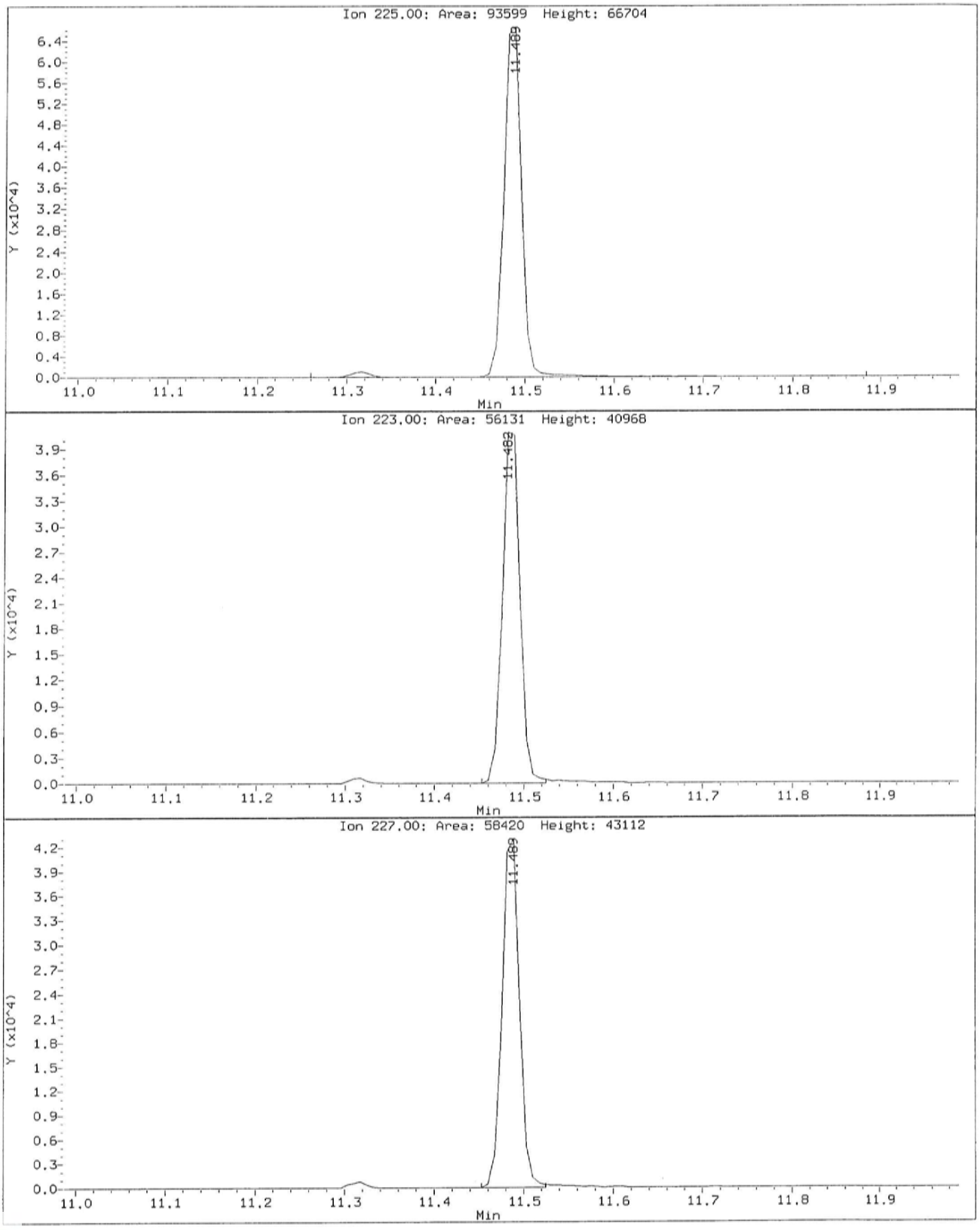
Injection Date: 06-DEC-2019 10:56
Instrument: voa6.i
Client Sample ID: CCV

Compound: Hexachlorobutadiene
CAS Number: 87-68-3



Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120605.D Page 1
Report Date: 15-Dec-2019 13:24

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120605.D
Lab Smp Id: VLCSW-191206 Client Smp ID: VLCSW-19206
Inj Date : 06-DEC-2019 12:08
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-191206;VLCSW-19206;3;;LCS
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:23 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

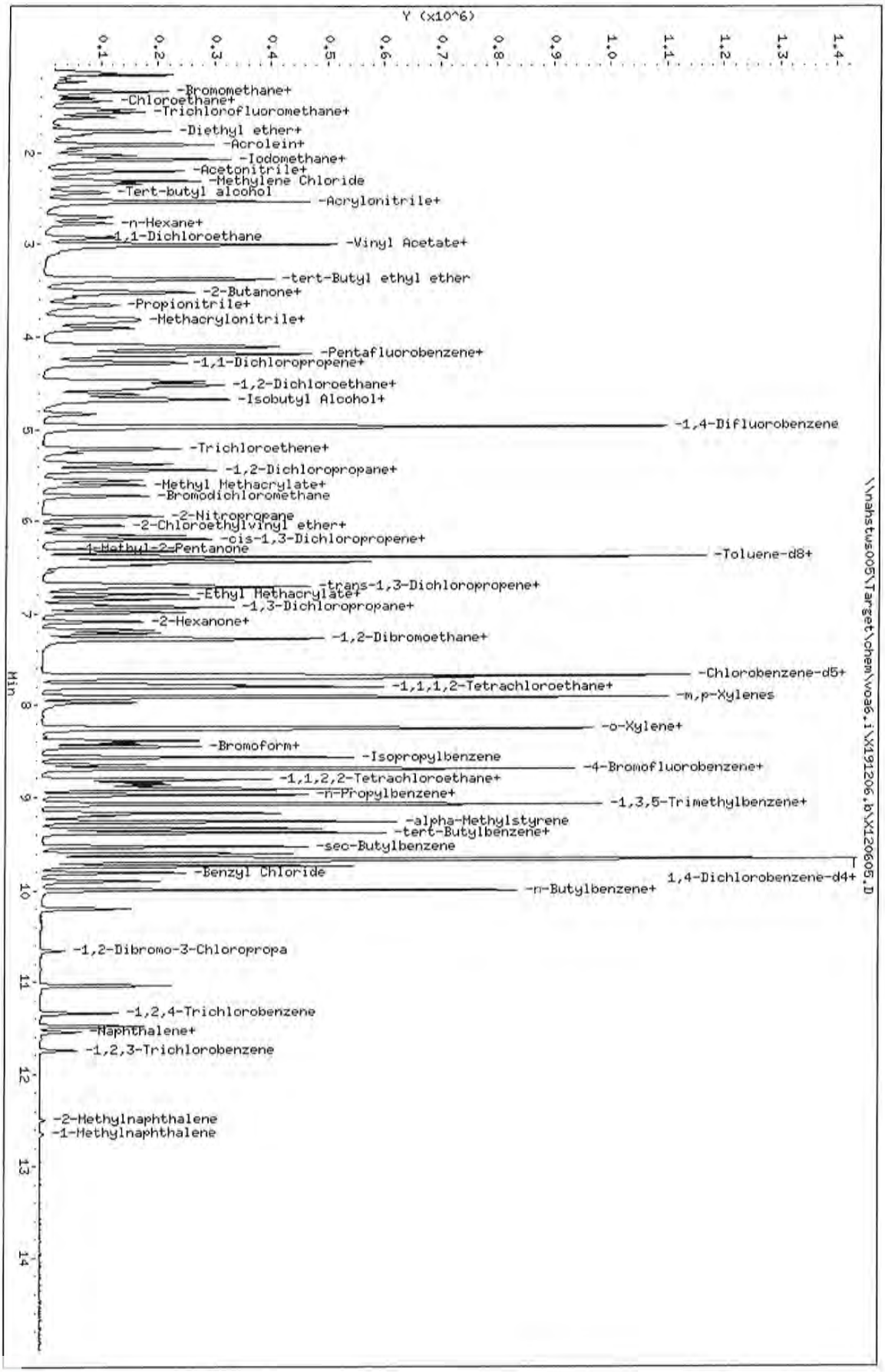
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	417500	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	606782	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	556445	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	288705	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	209479	53.2829	53.28
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	257454	49.7324	49.73
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	193975	51.0882	51.08
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	670780	45.7521	45.75
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	82776	20.5048	20.50
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	113554	20.1610	20.16
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	88277	21.7447	21.74
138 Freon TF	101	1.919	1.919	(0.459)	54801	15.0768	15.07
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	61631	21.1879	21.18
22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	133959	22.0520	22.05
11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	62596	17.6916	17.69
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	93066	19.0140	19.01
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	18070	16.3238	16.32
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	74068	21.5323	21.53(M)
90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	39204	16.1204	16.12
79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	272284	19.8765	19.87
89 1,2-Dibromo-3-Chloropropane	155	10.657	10.657	(1.102)	8672	19.1412	19.14
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	82466	21.1308	21.13
88 1,2-Dichlorobenzene	146	9.998	9.998	(1.034)	154644	20.1824	20.18

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120605.D Page 2
Report Date: 15-Dec-2019 13:24

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
33	1,2-Dichloroethane	62	4.562	4.562	(0.918)	107853	22.3910	22.39
42	1,2-Dichloropropane	63	5.443	5.443	(1.095)	77897	21.4908	21.49
75	1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	258484	19.6646	19.66
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.993)	168426	20.3425	20.34
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	125274	21.2131	21.21
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	171287	20.3588	20.35
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	114316	20.7340	20.73
24	2-Butanone	43	3.580	3.573	(0.856)	55698	43.4779	43.47
76	2-Chlorotoluene	91	8.974	8.974	(0.928)	224269	21.5914	21.59
52	2-Hexanone	43	7.090	7.090	(0.924)	93977	41.1130	41.11
77	4-Chlorotoluene	91	9.074	9.074	(0.939)	261424	20.7644	20.76
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	250771	17.7519	17.75
45	4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	135941	41.6952	41.69
10	Acetone	43	1.976	1.976	(0.473)	47612	41.8918	41.89
37	Benzene	78	4.512	4.519	(0.908)	299664	21.5890	21.58
74	Bromobenzene	156	8.809	8.809	(0.911)	108314	21.5871	21.58
29	Bromochloromethane	128	3.795	3.795	(0.908)	50547	22.3488	22.34
39	Bromodichloromethane	83	5.729	5.729	(1.153)	109634	21.8333	21.83
66	Bromoform	173	8.415	8.415	(1.097)	65090	20.2510	20.25
6	Bromomethane	94	1.338	1.338	(0.320)	92291	20.9229	20.92
19	Carbon Disulfide	76	2.069	2.069	(0.495)	401117	41.6725	41.67
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	95784	17.8644	17.86
59	Chlorobenzene	112	7.699	7.699	(1.004)	219967	20.2484	20.24
7	Chloroethane	64	1.403	1.403	(0.336)	50562	19.2351	19.23
28	Chloroform	83	3.910	3.910	(0.935)	144999	21.4451	21.44
3	Chloromethane	50	1.073	1.073	(0.257)	74844	16.6316	16.63
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	90105	22.7577	22.75
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	130128	21.9904	21.99
55	Dibromochloromethane	129	7.176	7.176	(0.936)	89261	21.1232	21.12
44	Dibromomethane	93	5.557	5.557	(1.118)	55759	21.7382	21.73
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	77423	20.8743	20.87
61	Ethylbenzene	106	7.799	7.799	(1.017)	109398	19.4902	19.49
91	Hexachlorobutadiene	225	11.488	11.488	(1.188)	33060	14.2490	14.24 (M)
67	Isopropylbenzene	105	8.566	8.566	(1.117)	303451	18.2522	18.25
62	m,p-Xylenes	106	7.907	7.907	(1.031)	262607	38.7713	38.77
17	Methylene Chloride	84	2.305	2.305	(0.551)	81221	21.5151	21.51
87	n-Butylbenzene	91	9.998	9.998	(1.034)	202809	17.2515	17.25
73	n-Propylbenzene	91	8.917	8.917	(0.922)	345511	19.3613	19.36
92	Naphthalene	128	11.546	11.546	(1.194)	50044	16.0439	16.04
63	o-Xylene	106	8.244	8.244	(1.075)	131579	19.6834	19.68
81	sec-Butylbenzene	105	9.526	9.526	(0.985)	274689	17.7188	17.71
64	Styrene	104	8.258	8.258	(1.077)	231163	19.8862	19.88
78	tert-Butylbenzene	119	9.339	9.339	(0.966)	206995	18.3918	18.39
56	Tetrachloroethene	164	6.933	6.933	(0.904)	68709	17.5739	17.57
50	Toluene	91	6.446	6.446	(0.840)	321482	20.3733	20.37
20	trans-1,2-Dichloroethene	96	2.527	2.527	(0.604)	74717	21.7511	21.75
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	118206	21.9172	21.91
38	Trichloroethene	130	5.206	5.206	(1.048)	87065	20.5175	20.51
8	Trichlorofluoromethane	101	1.560	1.560	(0.373)	113103	17.4638	17.46
5	Vinyl Chloride	62	1.138	1.138	(0.272)	78778	18.5140	18.51

QC Flag Legend

M - Compound response manually integrated.



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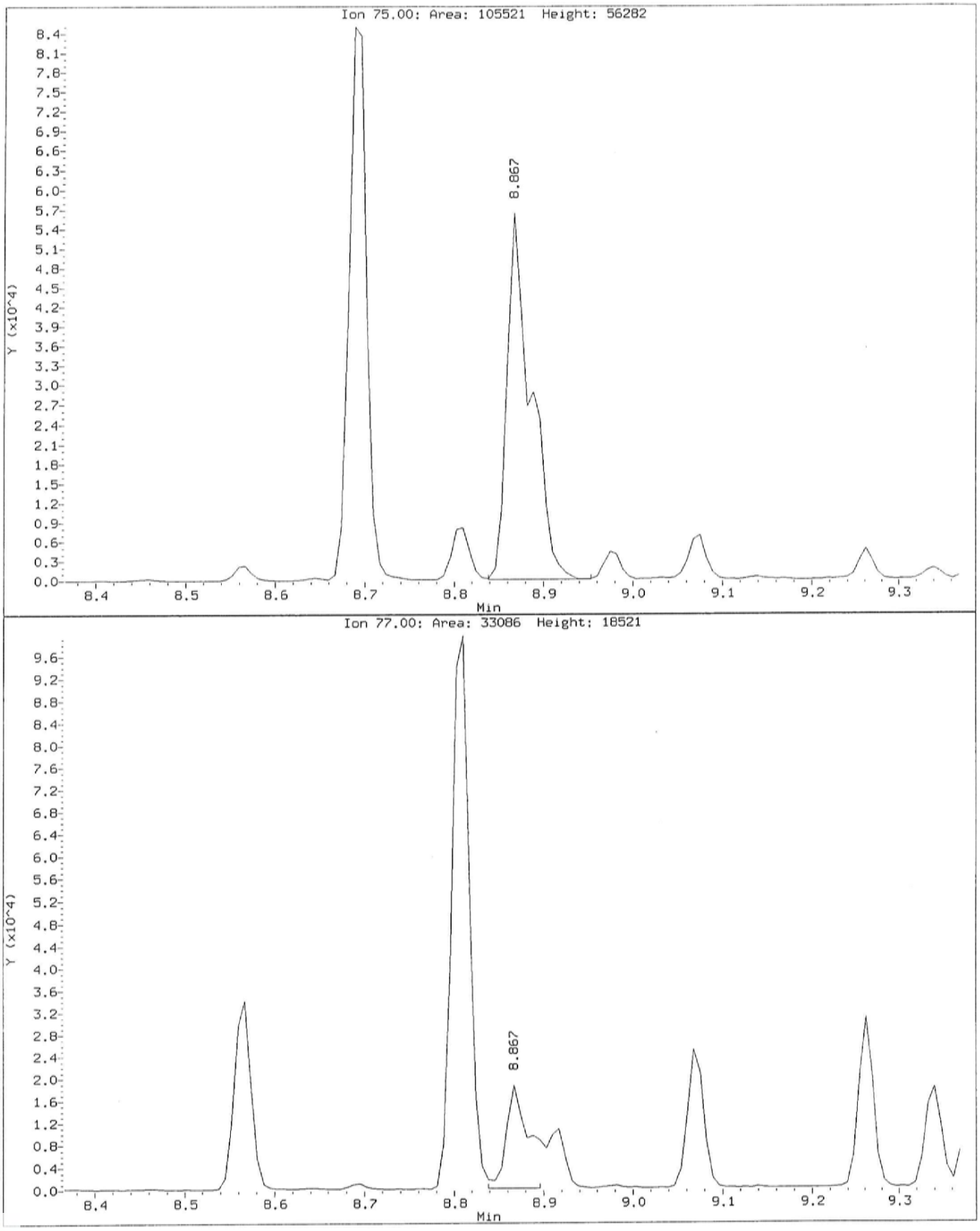
Sample Info: VLCSW-191206;VLCSW-19206;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\Before\X120605.D
Injection Date: 06-DEC-2019 12:08
Instrument: voa6.i
Client Sample ID: VLCSW-19206

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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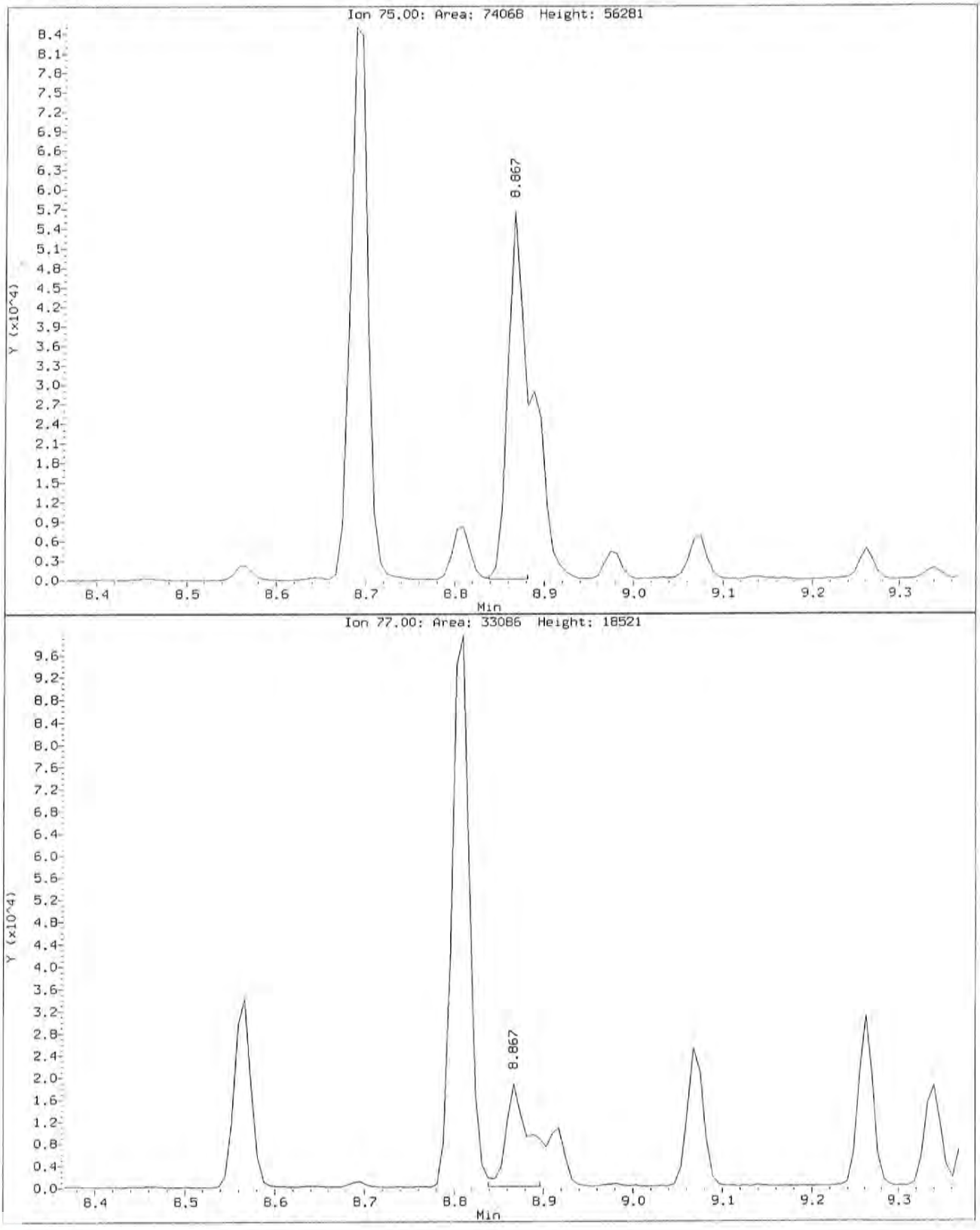
Injection Date: 06-DEC-2019 12:08
Instrument: voa6.i
Client Sample ID: VLCSW-19206

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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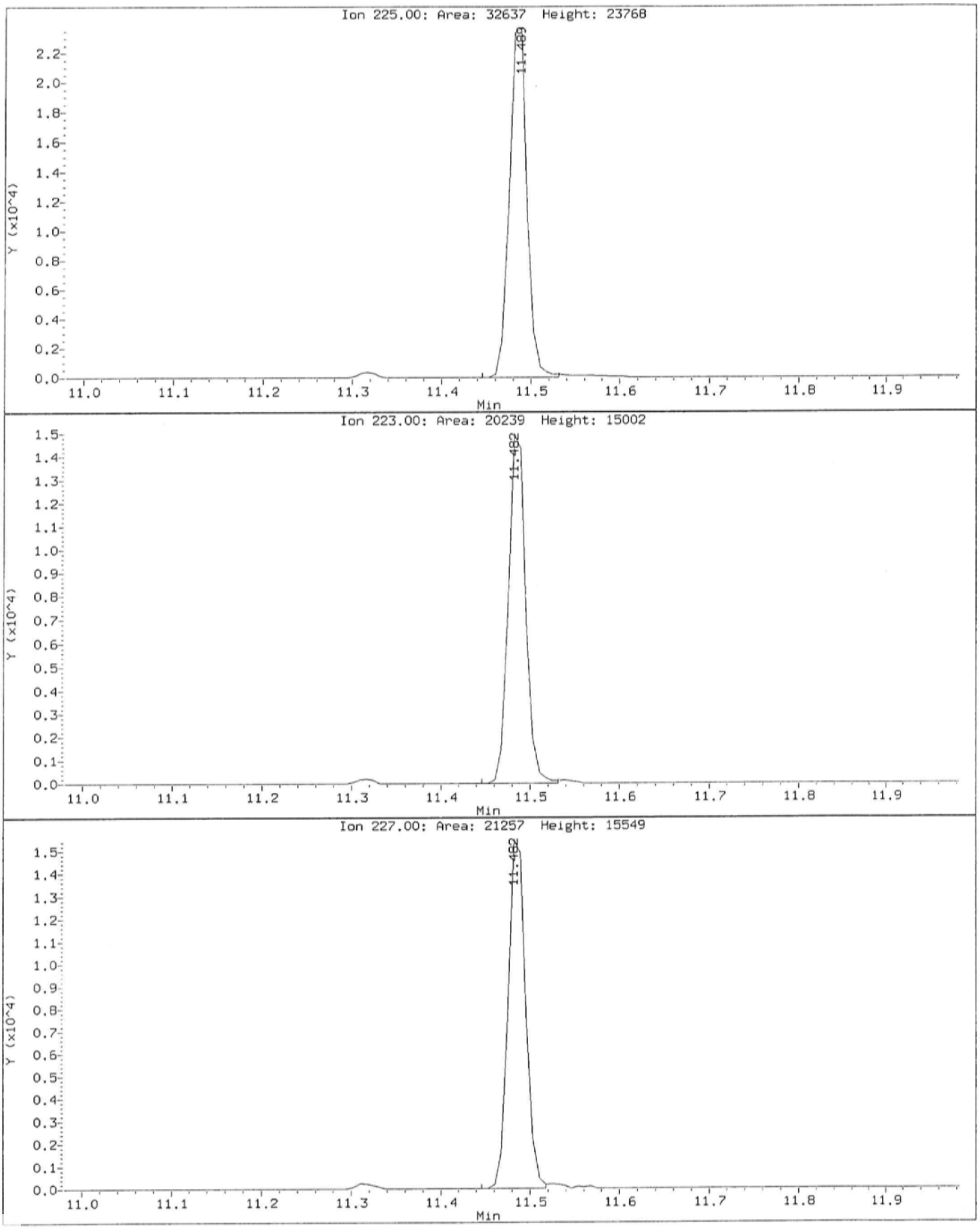
Injection Date: 06-DEC-2019 12:08
Instrument: voa6.i
Client Sample ID: VLCSW-19206

Compound: Hexachlorobutadiene
CAS Number: 87-68-3



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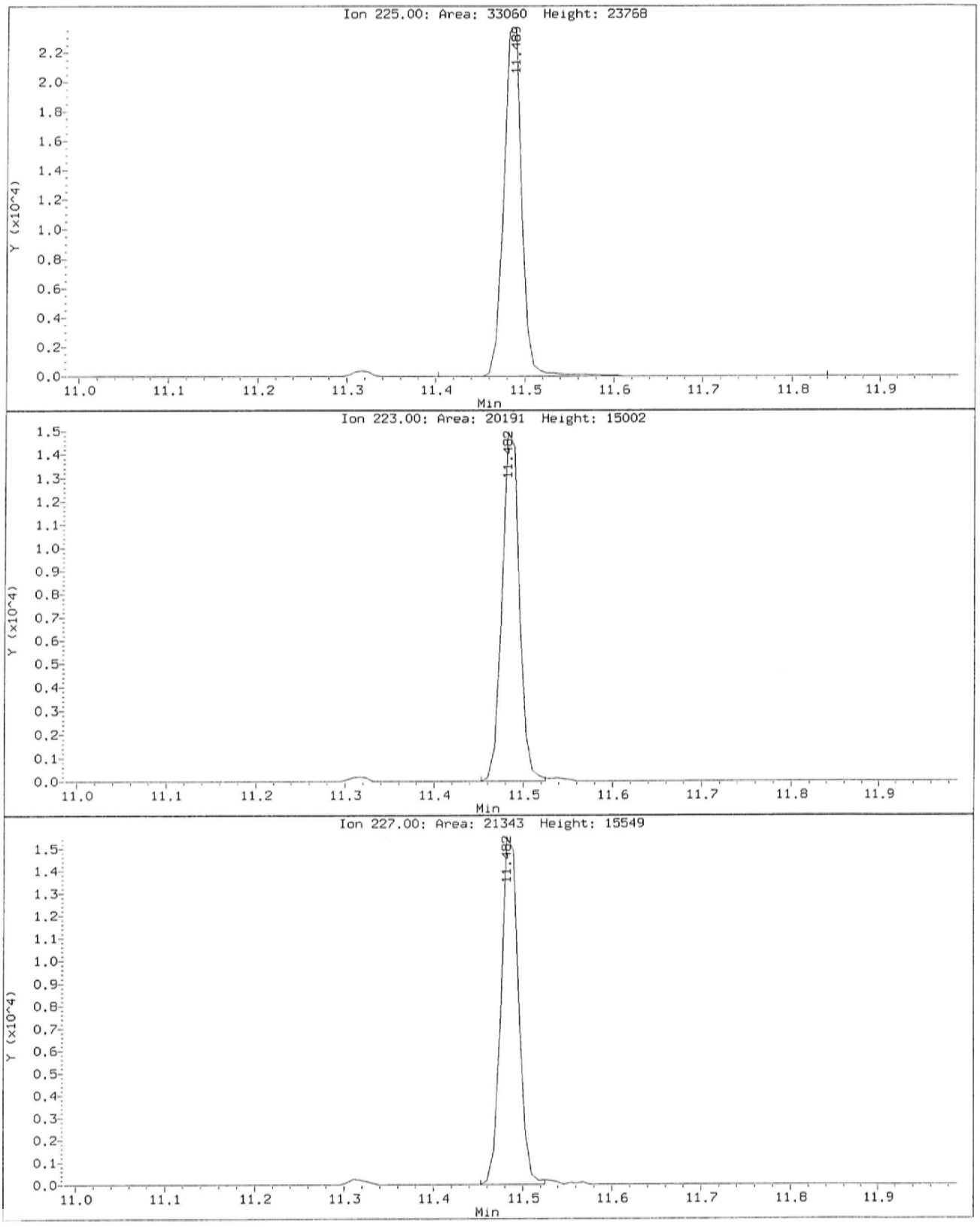
Injection Date: 06-DEC-2019 12:08
Instrument: voa6.i
Client Sample ID: VLCSW-19206

Compound: Hexachlorobutadiene
CAS Number: 87-68-3



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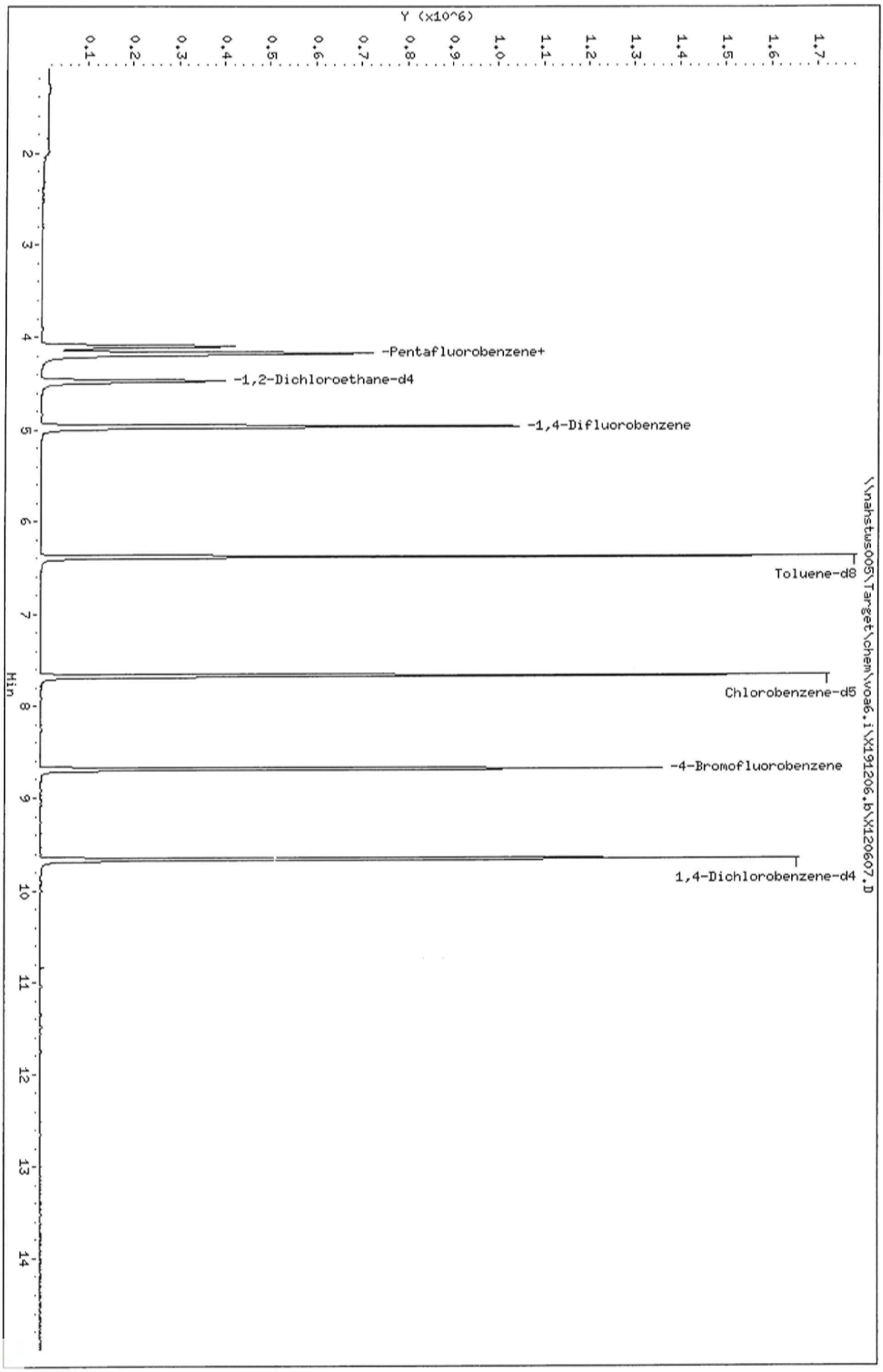
Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120607.D
Lab Smp Id: VBLKW-191206 Client Smp ID: VBLKW-191206
Inj Date : 06-DEC-2019 12:56
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-191206;VBLKW-191206;3;;BLANK
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:23 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	647910	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	922821	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	833032	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	406086	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	304955	50.0289	50.02
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	378964	48.9058	48.90
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	296349	50.3002	50.30
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1059432	48.2686	48.26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Date : 06-DEC-2019 12:56
Client ID: VBLKW-191206
Sample Info: VBLKW-191206;VBLKW-191206;3;;BLANK
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Y (x10^6)
-Pentafluorobenzene+
-1,2-Dichloroethane-d4
-1,4-Difluorobenzene
Toluene-d8
Chlorobenzene-d5
-4-Bromofluorobenzene
1,4-Dichlorobenzene-d4
\\nahstws005\Target\chem\voa6.i\X191206.b\X120607.D
Min

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120608.D Page 1
Report Date: 15-Dec-2019 13:26

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120608.D
Lab Smp Id: HS19120153-07 Client Smp ID: HS19120153-07
Inj Date : 06-DEC-2019 13:20
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-07;HS19120153-07;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:25 DevakG Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

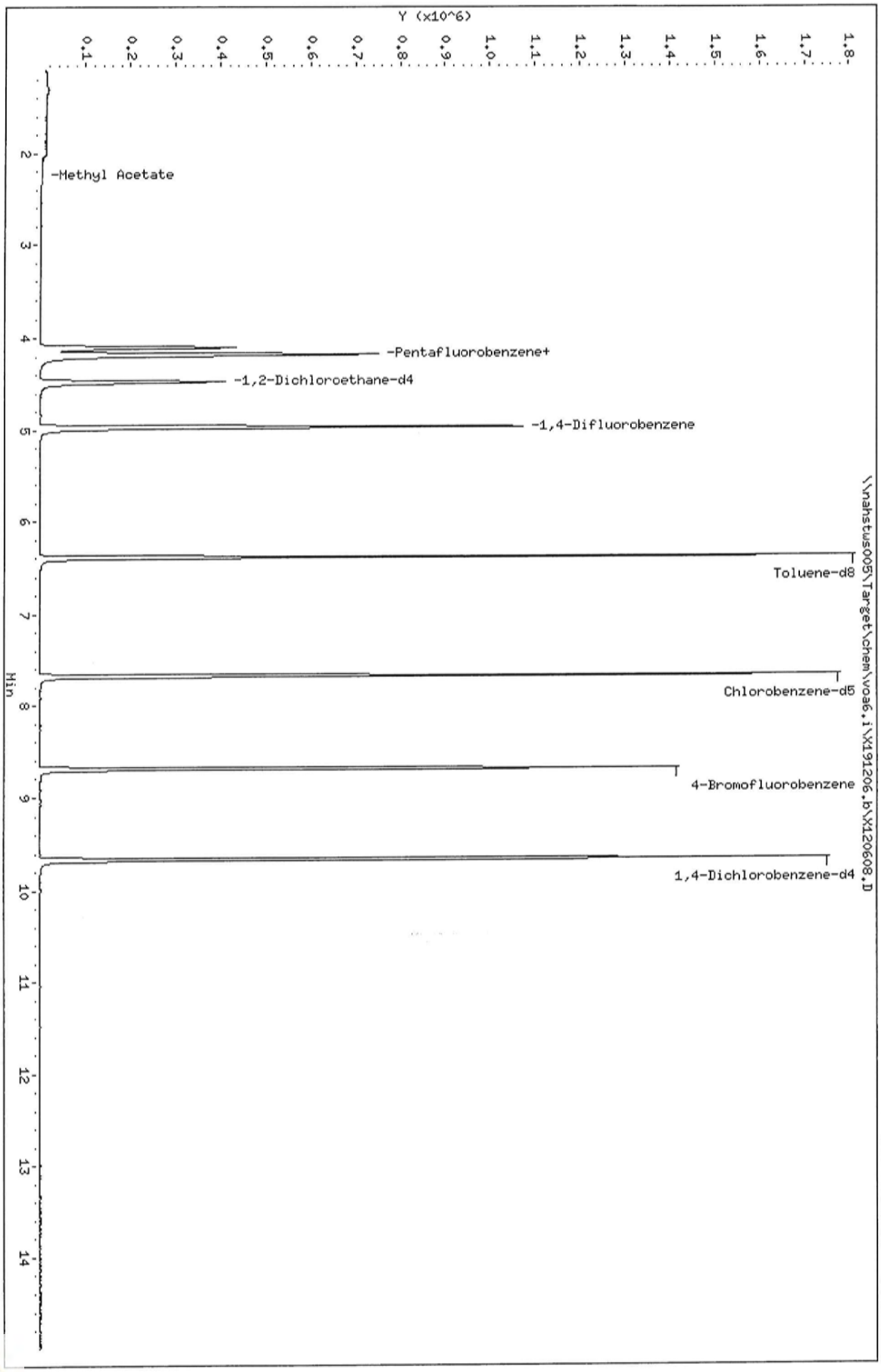
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	668863	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	951621	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	859749	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	436604	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	312469	49.6613	49.66
$	69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	399584	49.9554	49.95
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	302714	49.7748	49.77
$	48 Toluene-d8	98	6.388	6.388	(0.833)	1086642	47.9698	47.96

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120608.D
Date : 06-DEC-2019 13:20
Client ID: HS19120153-07
Sample Info: HS19120153-07;HS19120153-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120609.D Page 1
Report Date: 15-Dec-2019 13:26

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120609.D
Lab Smp Id: HS19120153-06 Client Smp ID: HS19120153-06
Inj Date : 06-DEC-2019 13:48
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-06;HS19120153-06;;;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:25 DevakG Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

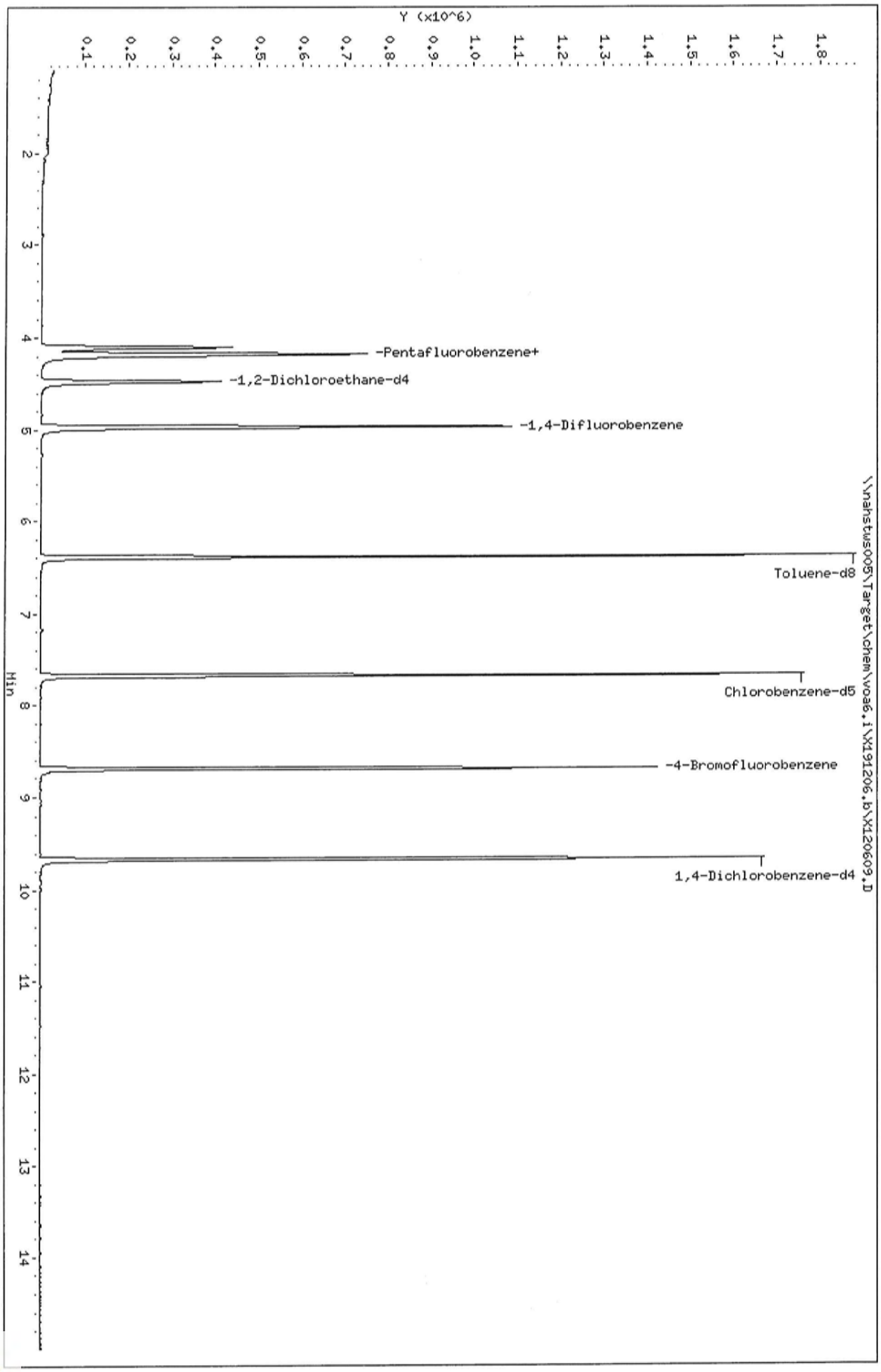
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	671992	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	956192	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	850846	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	425981	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	316593	50.0762	50.07
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	391522	49.4638	49.46
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	307654	50.3473	50.34
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1083539	48.3333	48.33

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120609.D
Date : 06-DEC-2019 13:48
Client ID: HS19120153-06
Sample Info: HS19120153-06;HS19120153-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120610.D Page 1
Report Date: 15-Dec-2019 13:26

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120610.D
Lab Smp Id: HS19120153-01 Client Smp ID: HS19120153-01
Inj Date : 06-DEC-2019 14:12
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-01;HS19120153-01;;;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:25 DevakG Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

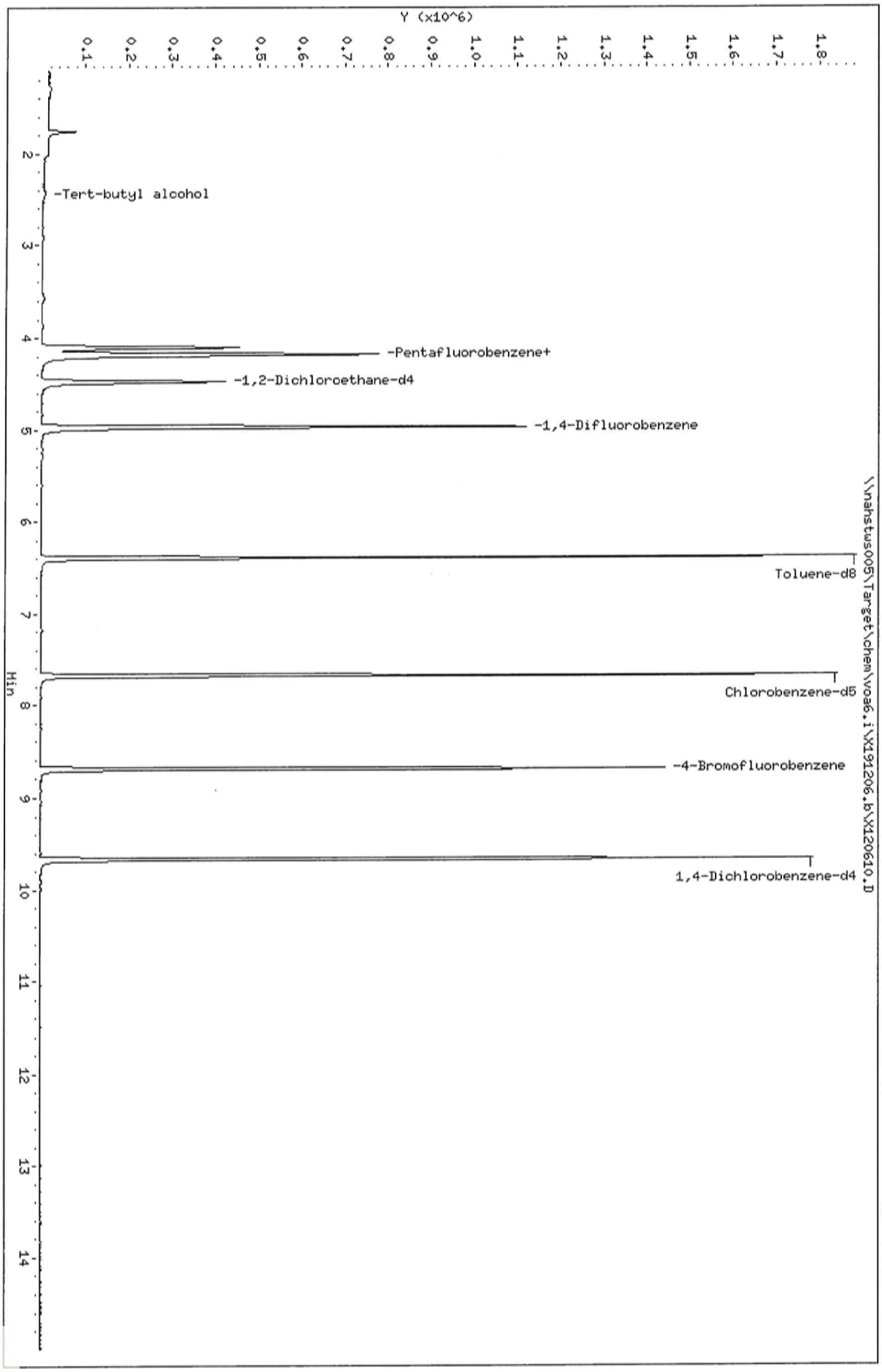
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	691485	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	981665	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	888925	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	447203	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	323113	49.6728	49.67
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	412655	49.8967	49.89
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	314312	49.9895	49.98
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1130758	48.2789	48.27

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120610.D
Date : 06-DEC-2019 14:12
Client ID: HS19120153-01
Sample Info: HS19120153-01;HS19120153-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120611.D Page 1
Report Date: 15-Dec-2019 13:26

ALS Laboratory Group

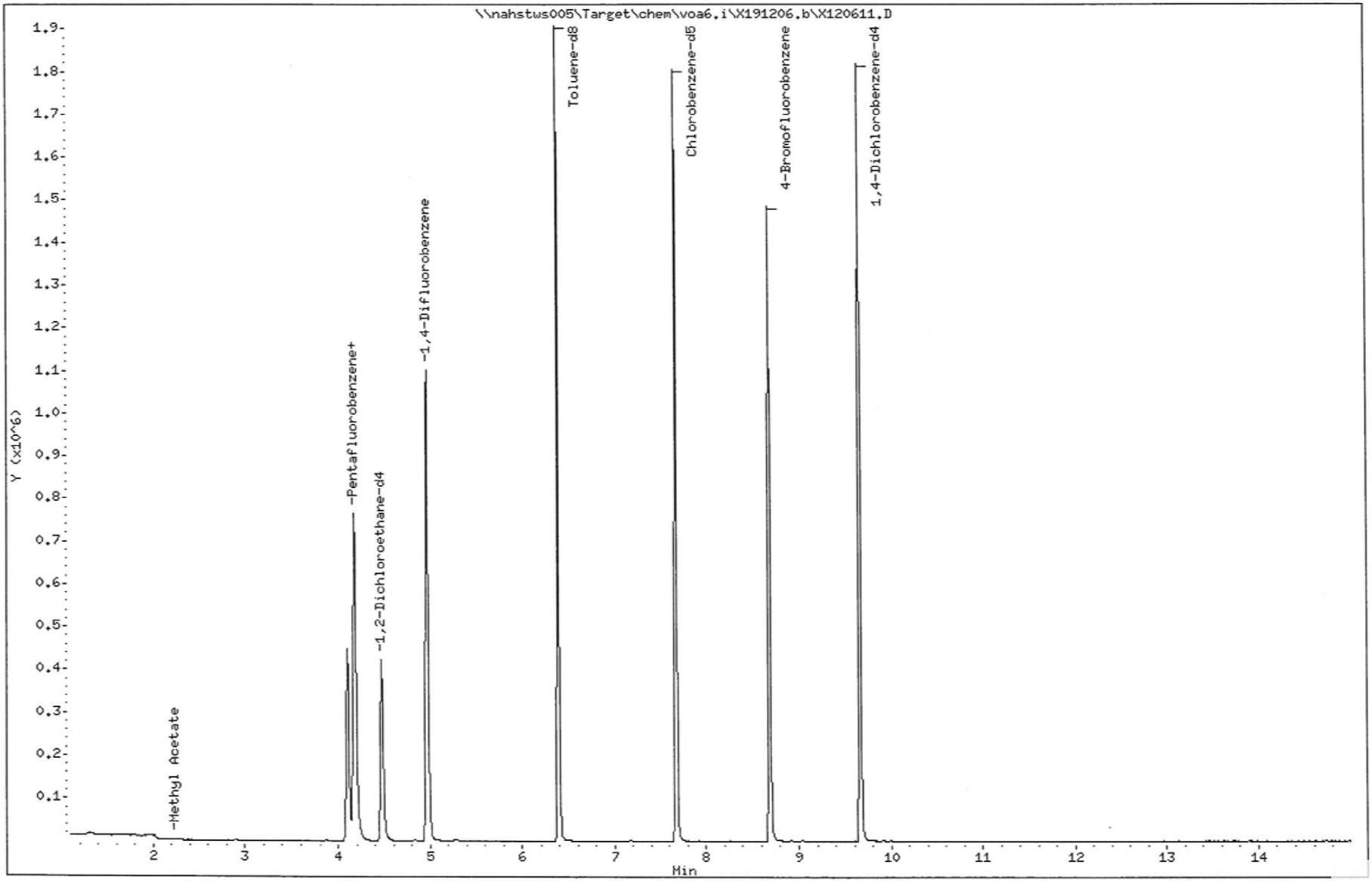
Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120611.D
Lab Smp Id: HS19120153-02 Client Smp ID: HS19120153-02
Inj Date : 06-DEC-2019 14:36
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-02;HS19120153-02;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:25 DevakG Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	683661	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	974503	50.0000	
* 47 Chlorobenzene-d5	117	7.670	7.670	(1.000)	879641	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	452532	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	324647	50.4678	50.46
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	407550	49.8004	49.80
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	312010	50.1898	50.18
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1107757	47.7961	47.79

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120611.D
Date : 06-DEC-2019 14:36
Client ID: HS19120153-02
Instrument: voa6.i
Sample Info: HS19120153-02;HS19120153-02;;;
Purge Volume: 5.0
Operator: PC
Column phase: DB624
Column diameter: 0.18



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Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120612.D
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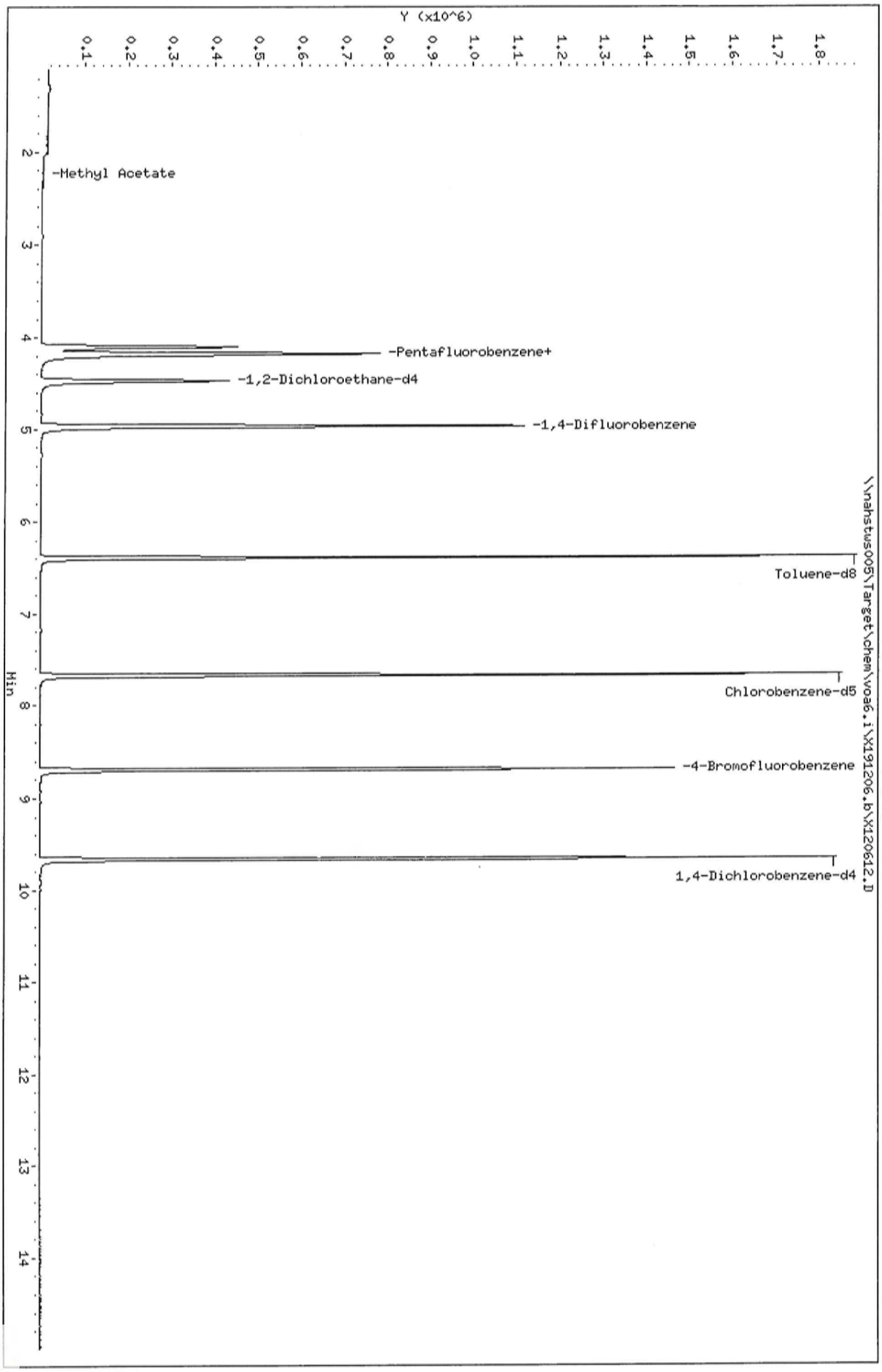
Inj Date : 06-DEC-2019 15:00
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-03;HS19120153-03;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:25 DevakG Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	696495	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	987961	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	888141	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	452685	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	329291	50.2497	50.24
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	408816	49.4797	49.47
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	318065	50.2208	50.22
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1121409	47.9220	47.92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Date : 06-DEC-2019 15:00
Client ID: HS19120153-03
Sample Info: HS19120153-03;HS19120153-03;;;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Page 2
Y (x10^6)
-Methyl Acetate
-Pentafluorobenzene+
-1,2-Dichloroethane-d4
-1,4-Difluorobenzene
Toluene-d8
Chlorobenzene-d5
-4-Bromofluorobenzene
1,4-Dichlorobenzene-d4
\\nahstws005\Target\chem\voa6.i\X191206.b\X120612.D
Min

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120613.D Page 1
Report Date: 15-Dec-2019 13:26

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120613.D
Lab Smp Id: HS19120153-04 Client Smp ID: HS19120153-04
Inj Date : 06-DEC-2019 15:24
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-04;HS19120153-04;;;
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:25 DevakG Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

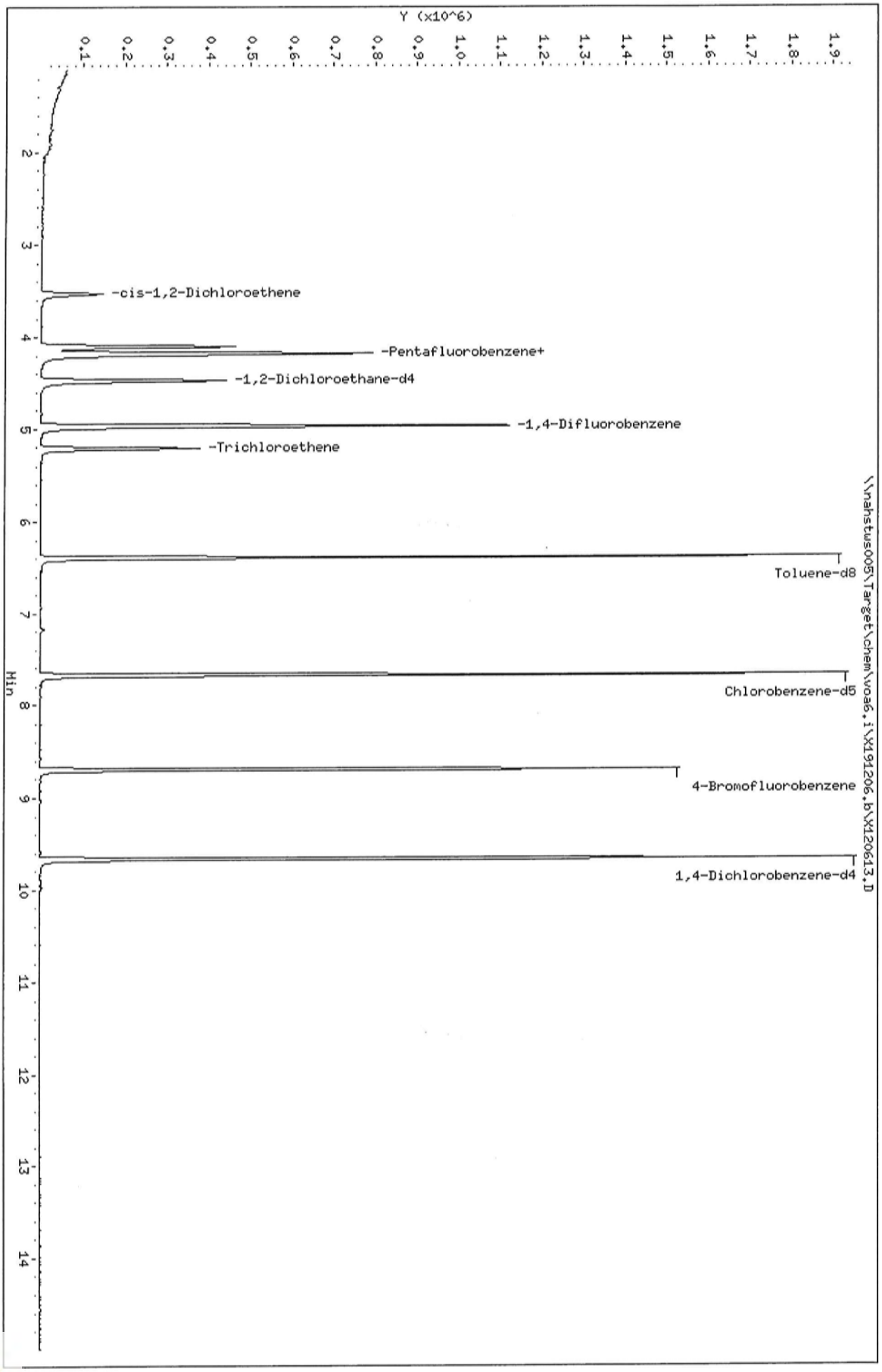
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	705294	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	1007240	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	918517	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	478599	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	337084	50.7891	50.78
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	431242	50.4595	50.45
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	323046	50.3698	50.36
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1146024	47.3543	47.35
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	81828	12.2340	12.23
38 Trichloroethene	130	5.206	5.206	(1.048)	133289	18.9223	18.92

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120613.D
Date : 06-DEC-2019 15:24
Client ID: HS19120153-04
Sample Info: HS19120153-04;HS19120153-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18



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Date : 06-DEC-2019 15:24

Client ID: HS19120153-04

Instrument: voa6.i

Sample Info: HS19120153-04;HS19120153-04;;;

Purge Volume: 5.0

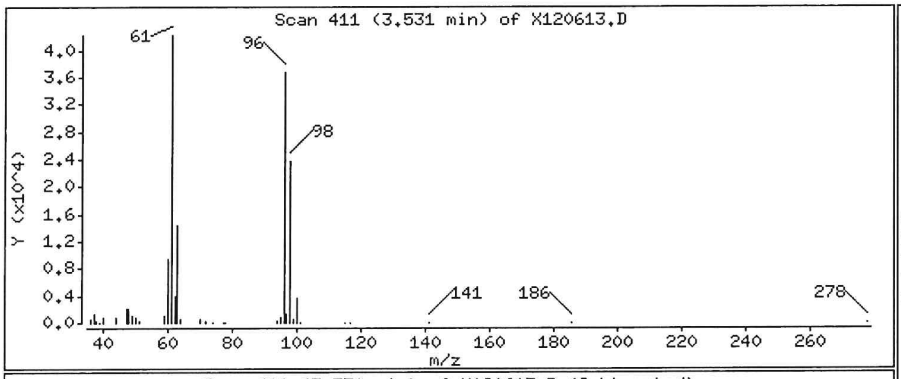
Operator: PC

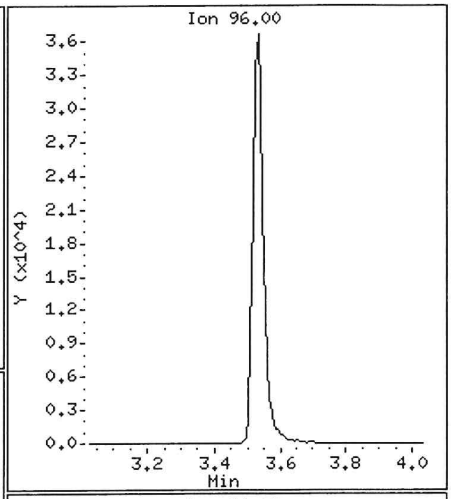
Column phase: DB624

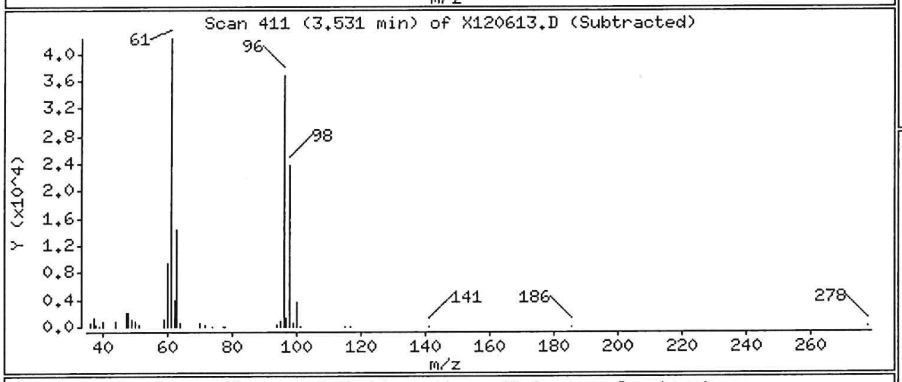
Column diameter: 0.18

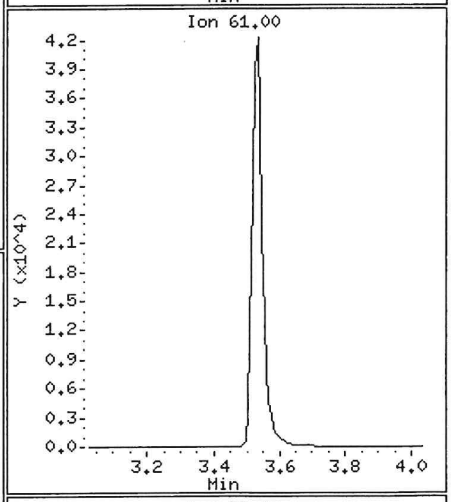
27 cis-1,2-Dichloroethene

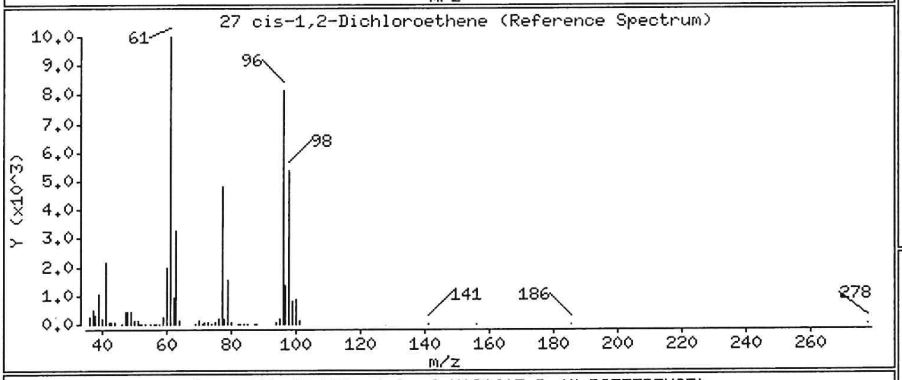
Concentration: 12.23 ug/l

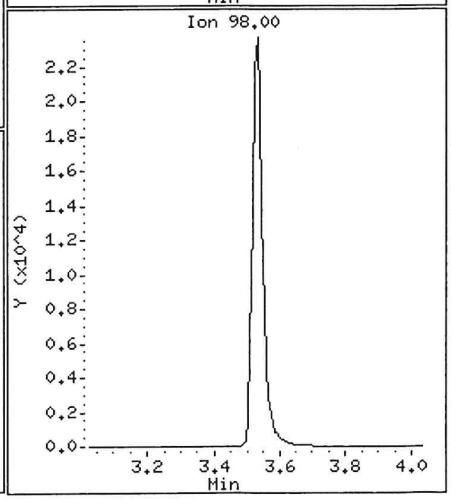


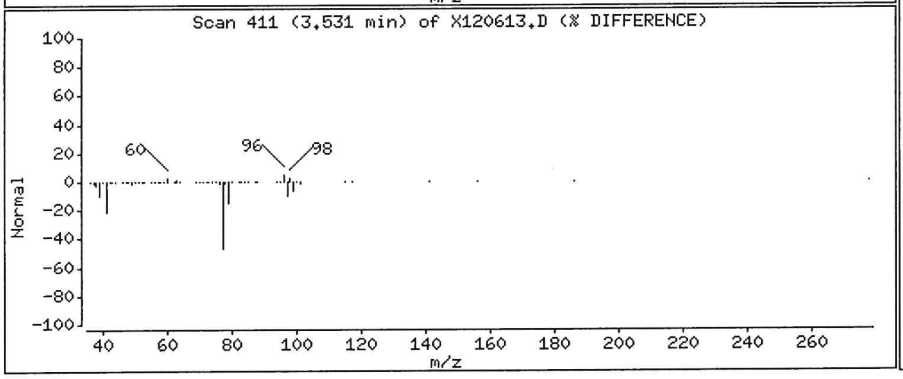












Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120613.D

Date : 06-DEC-2019 15:24

Client ID: HS19120153-04

Instrument: voa6.i

Sample Info: HS19120153-04;HS19120153-04;;;

Purge Volume: 5.0

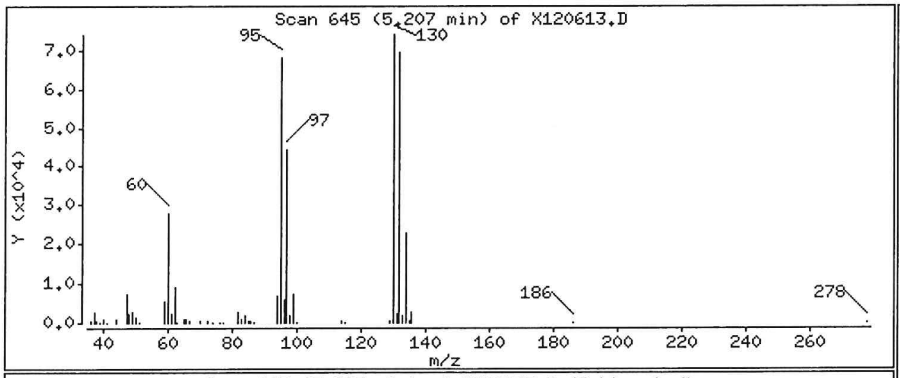
Operator: PC

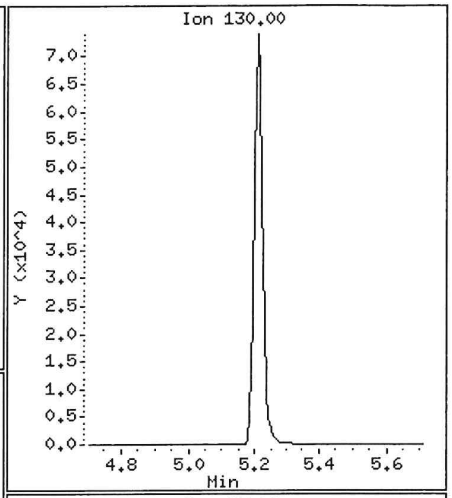
Column phase: DB624

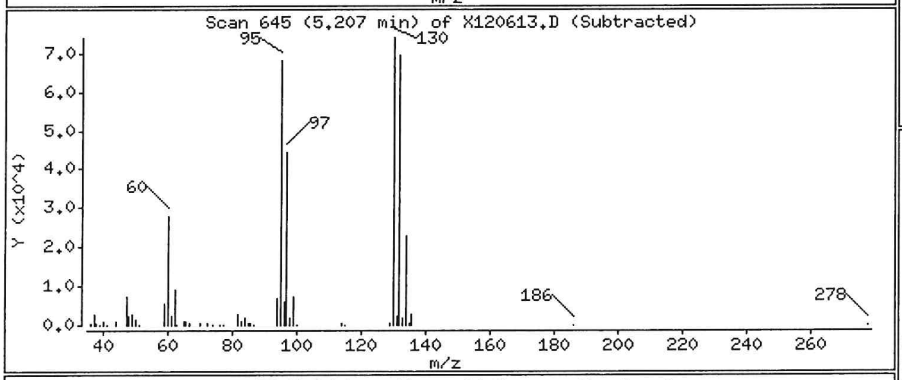
Column diameter: 0.18

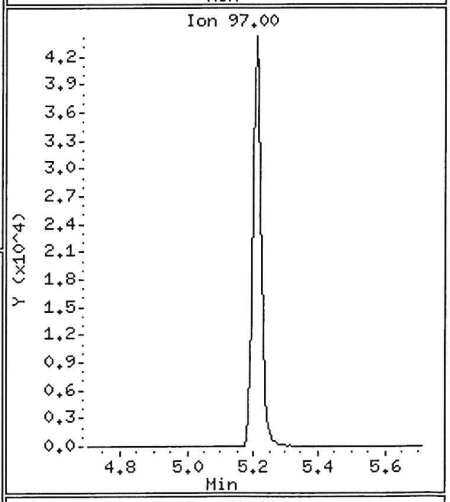
38 Trichloroethene

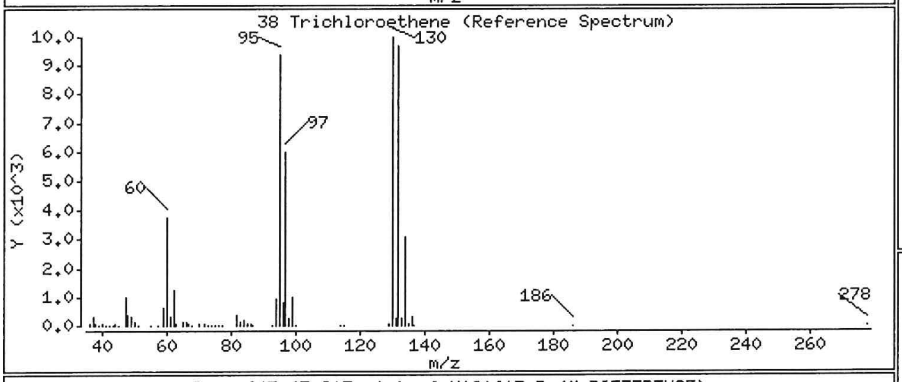
Concentration: 18.92 ug/l

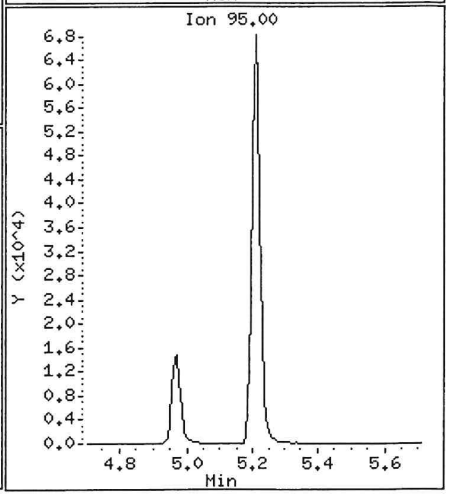


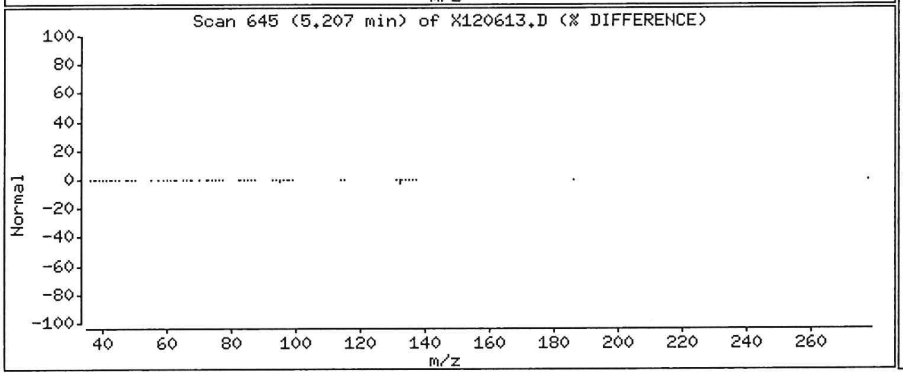












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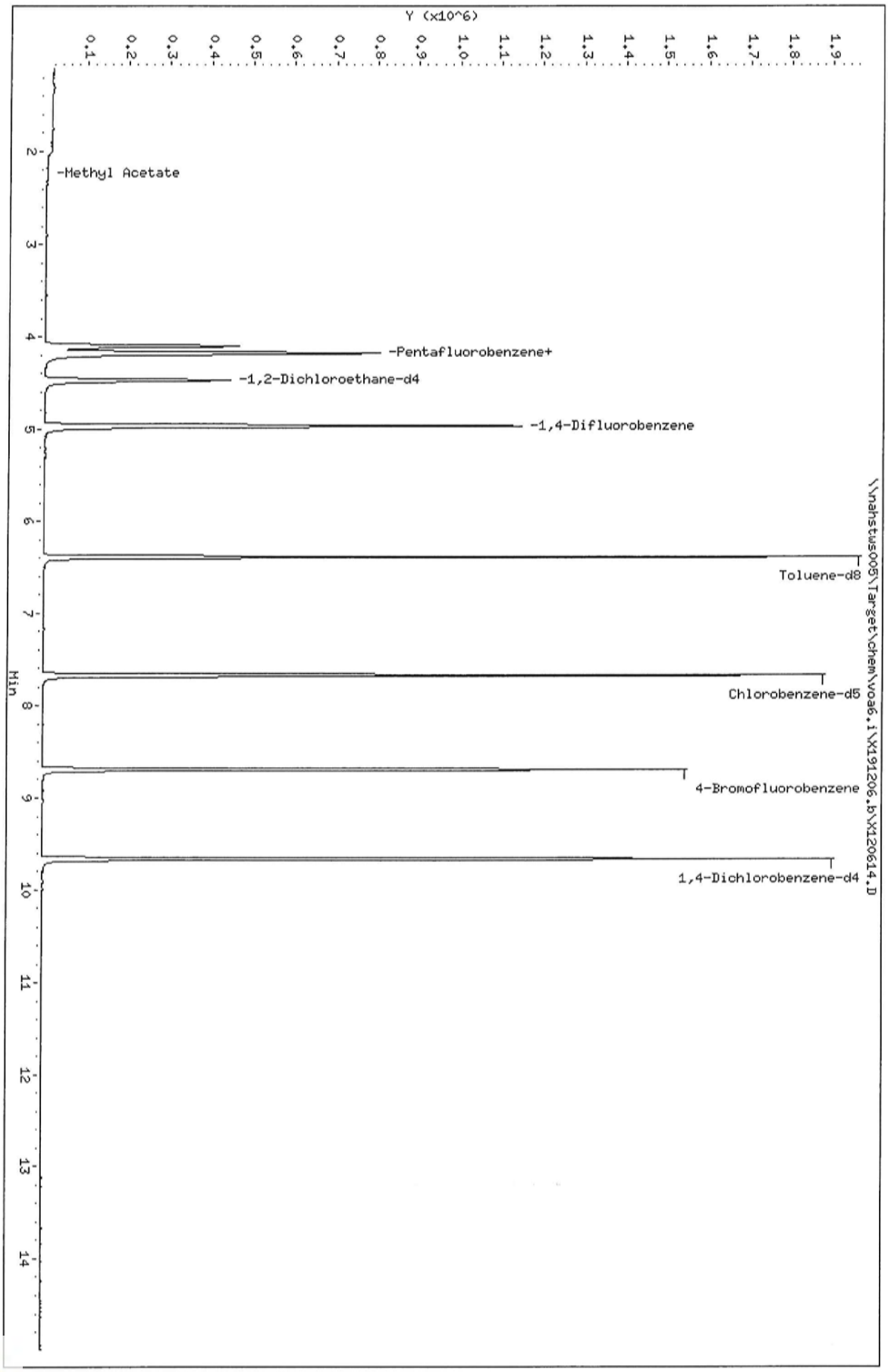
Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120614.D
Lab Smp Id: HS19120153-05 Client Smp ID: HS19120153-05
Inj Date : 06-DEC-2019 15:48
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-05;HS19120153-05;;;
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:25 DevakG Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	714142	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	1016671	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	918626	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	479034	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	337727	50.2633	50.26
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	434957	50.8846	50.88
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	325844	50.1780	50.17
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1161647	47.9942	47.99



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Date : 06-DEC-2019 15:48
Client ID: HS19120153-05
Sample Info: HS19120153-05;HS19120153-05;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120618.D Page 1
Report Date: 15-Dec-2019 13:24

ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120618.D
Lab Smp Id: HS19120153-06MS Client Smp ID: HS19120153-06MS
Inj Date : 06-DEC-2019 17:24
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-06MS;HS19120153-06MS;3;;MS
Misc Info : HS18090001;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:23 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 18 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

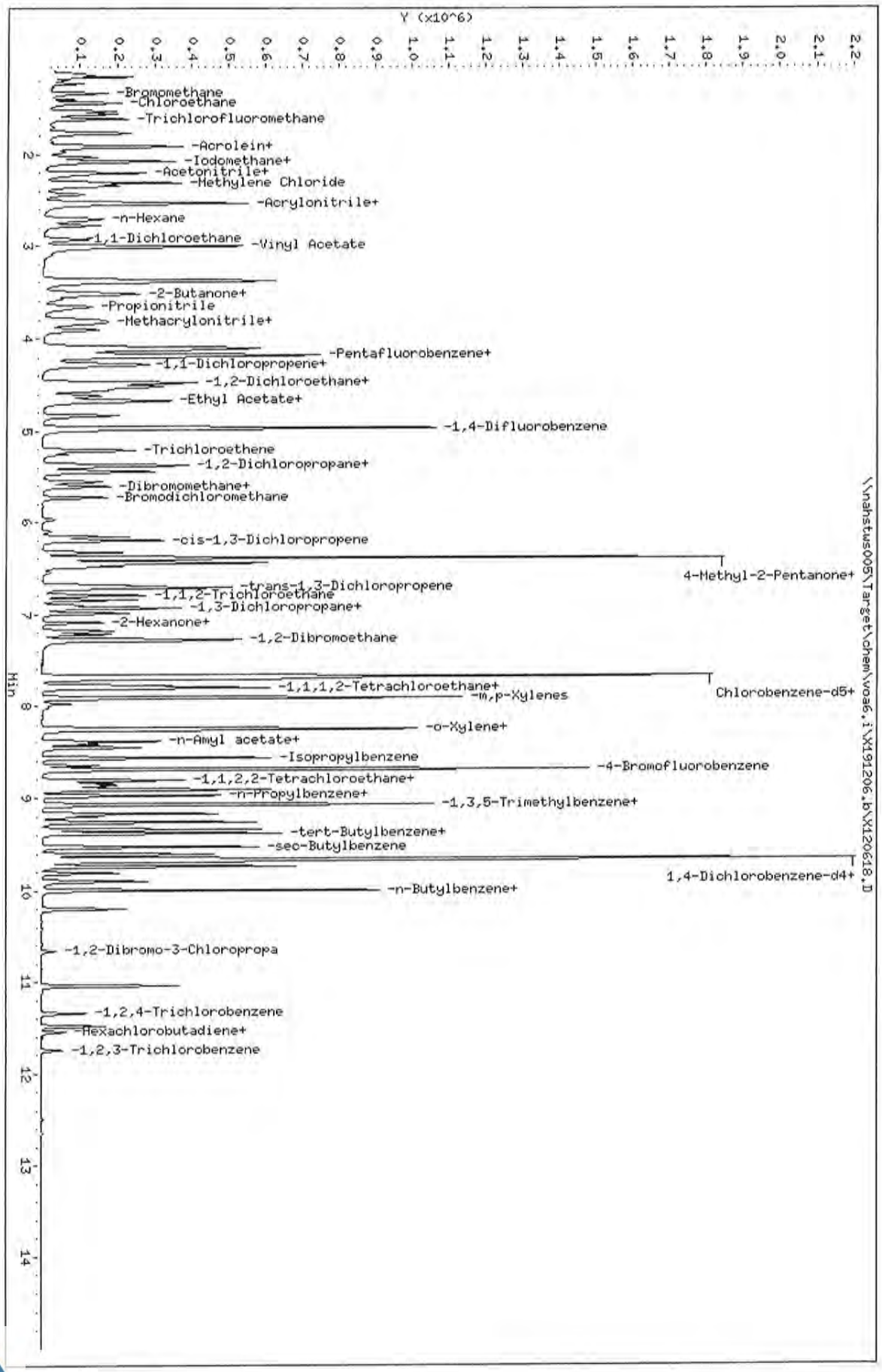
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	662708	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	947757	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	869328	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	453167	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	316928	50.8203	50.82
$ 69 4-Bromofluorobenzene	95	8.695	8.688	(1.134)	410283	50.7213	50.72
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	304193	50.4774	50.47
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	1082154	47.2453	47.24
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	79794	12.6520	12.65
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	126127	14.1076	14.10
68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	81705	12.8219	12.82
138 Freon TF	101	1.919	1.919	(0.459)	70555	12.2288	12.22
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	57611	12.6775	12.67
22 1,1-Dichloroethane	63	2.922	2.921	(0.699)	131913	13.6804	13.68
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	68069	12.1200	12.12
32 1,1-Dichloropropene	75	4.283	4.282	(0.862)	104719	13.6976	13.69
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.216)	16342	9.04738	9.04
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	68421	12.6720	12.67(M)
90 1,2,4-Trichlorobenzene	180	11.345	11.338	(1.174)	37444	9.80896	9.80
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.971)	294847	13.7123	13.71
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.657	(1.103)	8352	11.6130	11.61
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	76789	12.5945	12.59
88 1,2-Dichlorobenzene	146	9.999	9.998	(1.035)	151865	12.6268	12.62

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
33 1,2-Dichloroethane	62	4.555	4.562	(0.916)	99821	13.2678	13.26
42 1,2-Dichloropropane	63	5.436	5.443	(1.094)	72516	12.8086	12.80
75 1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	284895	13.8080	13.80
83 1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	171619	13.2056	13.20
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	116735	12.6527	12.65
84 1,4-Dichlorobenzene	146	9.683	9.683	(1.002)	170417	12.9044	12.90
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	117106	13.3811	13.38
24 2-Butanone	43	3.581	3.573	(0.856)	49524	24.3545	24.35
76 2-Chlorotoluene	91	8.974	8.974	(0.929)	232663	14.2703	14.27
52 2-Hexanone	43	7.090	7.090	(0.924)	87100	24.3902	24.39
77 4-Chlorotoluene	91	9.075	9.074	(0.939)	271209	13.7238	13.72
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	300103	13.5342	13.53
45 4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	127245	24.9813	24.98
10 Acetone	43	1.976	1.976	(0.473)	37673	18.9472	18.94
37 Benzene	78	4.512	4.519	(0.908)	296305	13.6670	13.66
74 Bromobenzene	156	8.810	8.809	(0.912)	103961	13.2000	13.20
29 Bromochloromethane	128	3.803	3.795	(0.909)	47099	13.1191	13.11
39 Bromodichloromethane	83	5.729	5.729	(1.153)	104078	13.2699	13.26
66 Bromoform	173	8.416	8.415	(1.097)	59864	12.3324	12.33
6 Bromomethane	94	1.339	1.338	(0.320)	85627	11.2498	11.24
19 Carbon Disulfide	76	2.069	2.069	(0.495)	442012	28.9299	28.92
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	111876	13.3588	13.35
59 Chlorobenzene	112	7.699	7.699	(1.004)	215224	12.6813	12.68
7 Chloroethane	64	1.403	1.403	(0.336)	64715	15.5099	15.50
28 Chloroform	83	3.910	3.910	(0.935)	139565	13.0039	13.00
3 Chloromethane	50	1.074	1.073	(0.257)	69257	9.77373	9.77
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	88316	14.0525	14.05
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	120193	13.0040	13.00
55 Dibromochloromethane	129	7.176	7.176	(0.936)	83684	12.6759	12.67
44 Dibromomethane	93	5.558	5.557	(1.118)	51807	12.9310	12.93
2 Dichlorodifluoromethane	85	0.973	0.973	(0.233)	60282	10.6883	10.68
61 Ethylbenzene	106	7.800	7.799	(1.017)	115035	13.1182	13.11
91 Hexachlorobutadiene	225	11.489	11.488	(1.189)	32044	8.79880	8.79
67 Isopropylbenzene	105	8.566	8.566	(1.117)	345650	13.3077	13.30
62 m,p-Xylenes	106	7.907	7.907	(1.031)	278438	26.3130	26.31
17 Methylene Chloride	84	2.306	2.305	(0.551)	77101	12.8667	12.86
87 n-Butylbenzene	91	9.999	9.998	(1.035)	246801	13.3747	13.37
73 n-Propylbenzene	91	8.917	8.917	(0.923)	397240	14.1815	14.18
92 Naphthalene	128	11.546	11.546	(1.195)	45514	9.29608	9.29
63 o-Xylene	106	8.244	8.244	(1.075)	134025	12.8333	12.83
81 sec-Butylbenzene	105	9.526	9.526	(0.986)	339467	13.9504	13.95
64 Styrene	104	8.258	8.258	(1.077)	228454	12.5797	12.57
78 tert-Butylbenzene	119	9.340	9.339	(0.967)	247748	14.0240	14.02
56 Tetrachloroethene	164	6.933	6.933	(0.904)	79510	13.0171	13.01
50 Toluene	91	6.446	6.446	(0.840)	323764	13.1333	13.13
20 trans-1,2-Dichloroethene	96	2.528	2.527	(0.604)	76488	14.0278	14.02
51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	107606	12.7737	12.77
38 Trichloroethene	130	5.207	5.206	(1.048)	89498	13.5030	13.50
8 Trichlorofluoromethane	101	1.561	1.560	(0.373)	128141	12.4649	12.46
5 Vinyl Chloride	62	1.138	1.138	(0.272)	76219	11.2848	11.28

QC Flag Legend

M - Compound response manually integrated.



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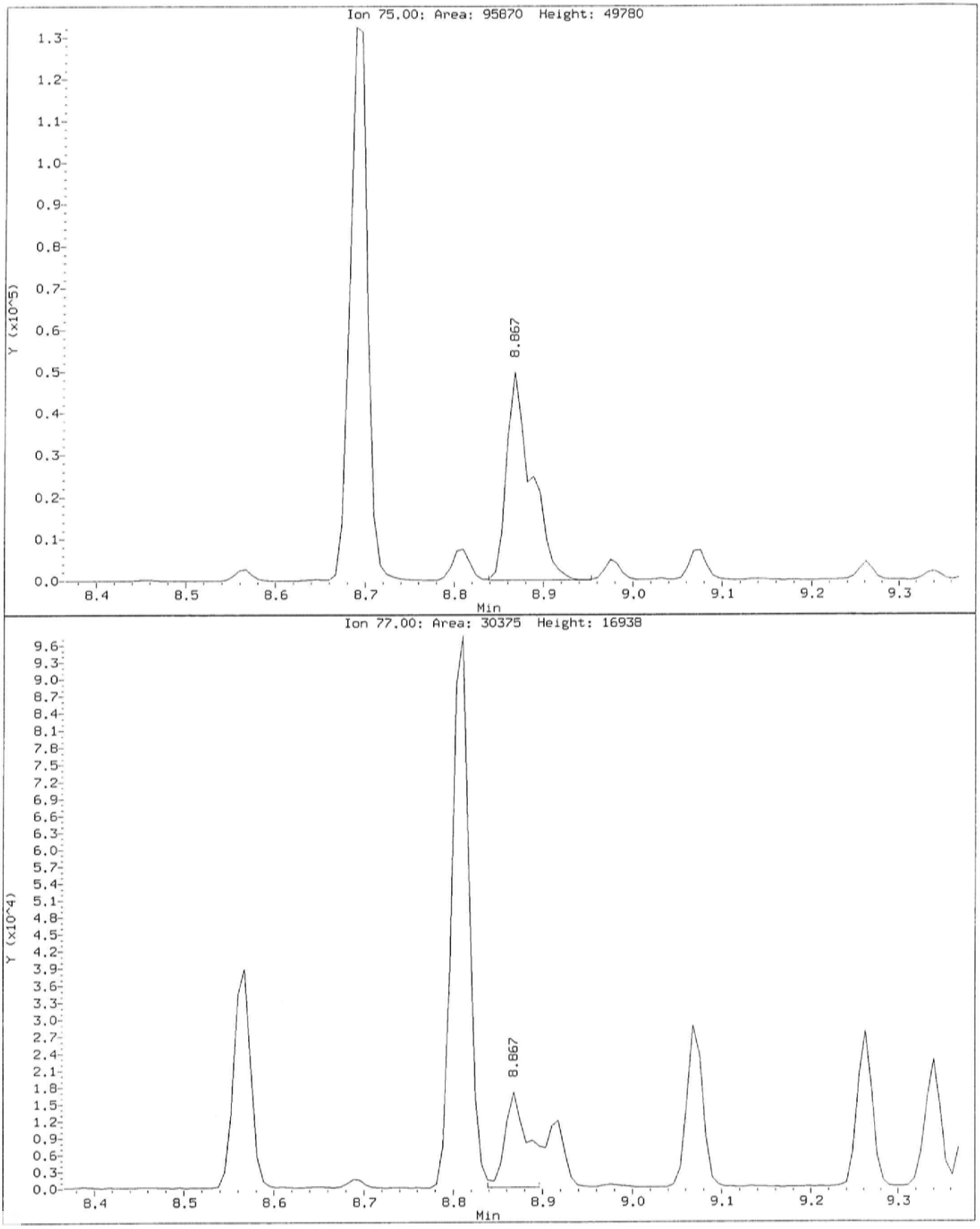
Date : 06-DEC-2019 17:24
Client ID: HS19120153-06HS
Sample Info: HS19120153-06HS;HS19120153-06HS;3;;HS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\Before\X120618.D
Injection Date: 06-DEC-2019 17:24
Instrument: voa6.i
Client Sample ID: HS19120153-06MS

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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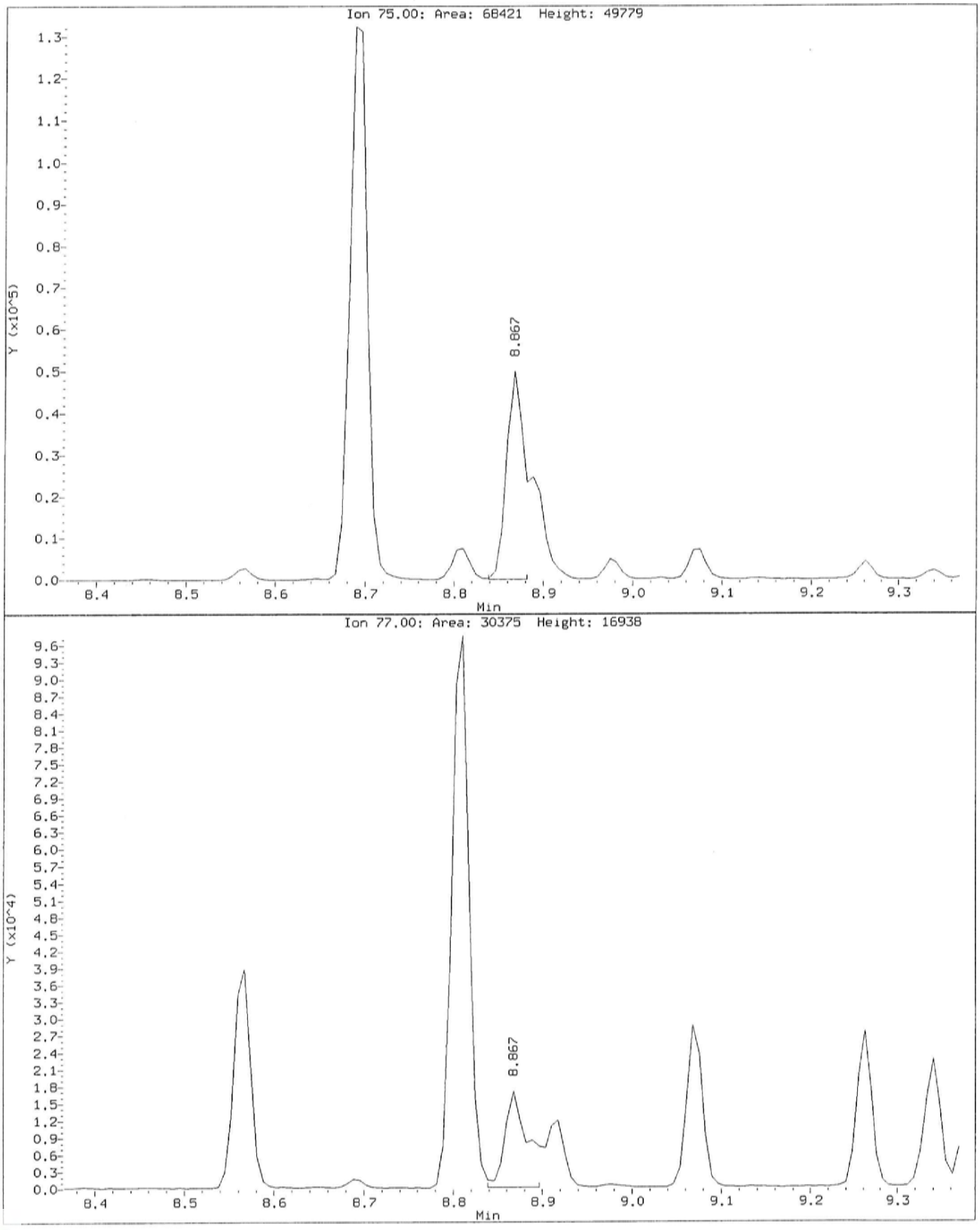
Injection Date: 06-DEC-2019 17:24
Instrument: voa6.i
Client Sample ID: HS19120153-06MS

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120619.D Page 1
Report Date: 15-Dec-2019 13:24

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Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120619.D
Lab Smp Id: HS19120153-06MSD Client Smp ID: HS19120153-06MSD
Inj Date : 06-DEC-2019 17:48
Operator : PC Inst ID: voa6.i
Smp Info : HS19120153-06MSD;HS19120153-06MSD;3;;MSD
Misc Info : HS18090001;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m
Meth Date : 15-Dec-2019 13:23 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 18 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

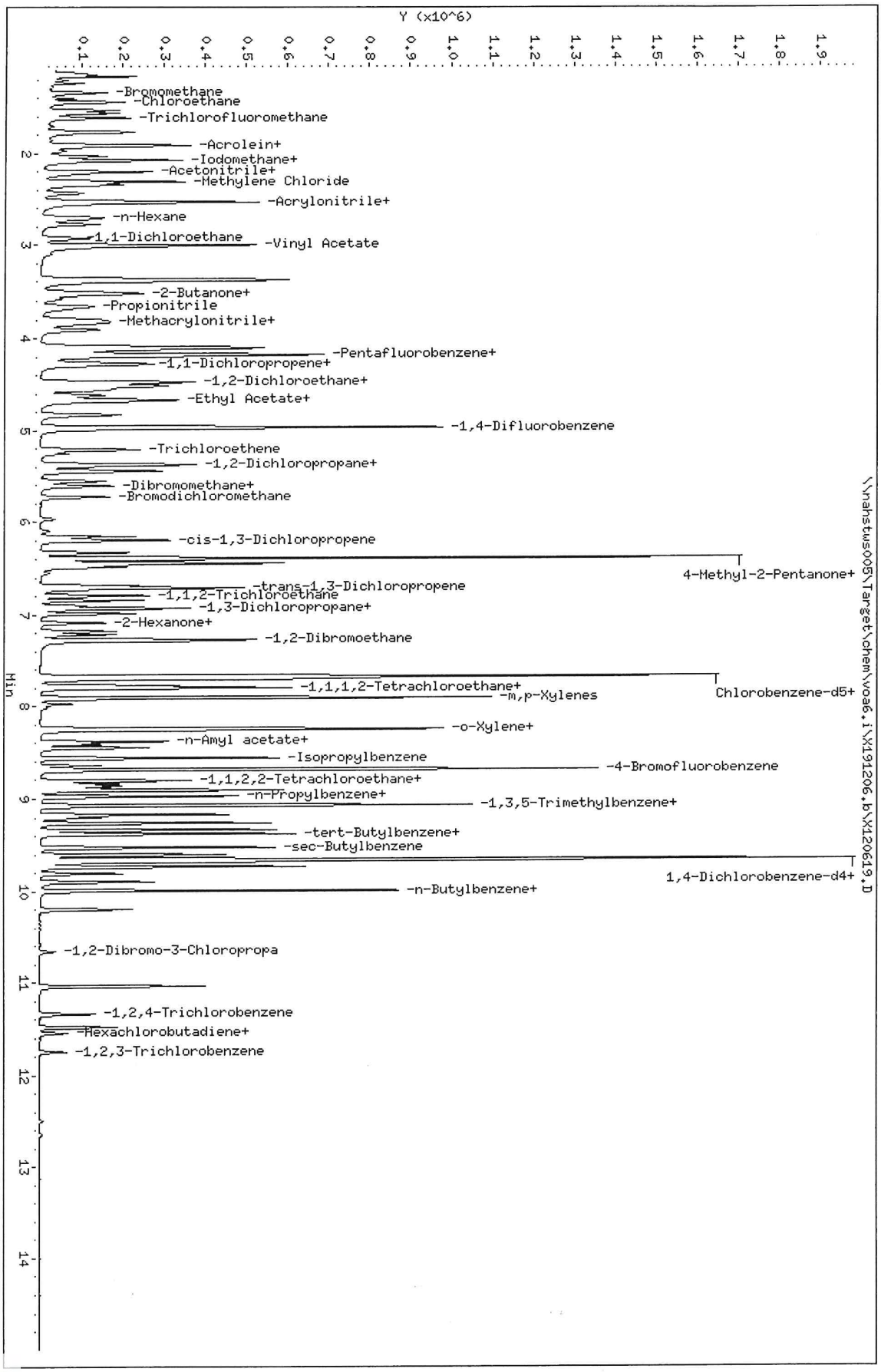
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.182	4.182	(1.000)	609830	50.0000	
* 36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	868521	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	795379	50.0000	
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	411247	50.0000	
$ 35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	289894	50.5205	50.52
$ 69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	372175	50.2915	50.29
$ 30 Dibromofluoromethane	113	4.103	4.103	(0.981)	277347	50.0165	50.01
$ 48 Toluene-d8	98	6.388	6.388	(0.833)	995659	47.5105	47.51
60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	78448	13.5950	13.59
31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	118987	14.4629	14.46
68 1,1,2,2-Tetrachloroethane	83	8.838	8.845	(0.915)	80913	13.9919	13.99
138 Freon TF	101	1.919	1.919	(0.459)	65318	12.3028	12.30
53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	57087	13.7301	13.73
22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	127625	14.3834	14.38
11 1,1-Dichloroethene	96	1.912	1.911	(0.457)	63860	12.3565	12.35
32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	100148	14.2947	14.29
93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.216)	18277	11.3475	11.34
71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	68129	13.9041	13.90(M)
90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	39638	11.4422	11.44
79 1,2,4-Trimethylbenzene	105	9.383	9.382	(0.971)	281790	14.4409	14.44
89 1,2-Dibromo-3-Chloropropane	155	10.658	10.657	(1.103)	7995	12.2685	12.26
57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	75385	13.5137	13.51
88 1,2-Dichlorobenzene	146	9.991	9.998	(1.034)	147766	13.5383	13.53

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
33	1,2-Dichloroethane	62	4.562	4.562	(0.918)	98892	14.3435	14.34
42	1,2-Dichloropropane	63	5.436	5.443	(1.094)	71594	13.7994	13.79
75	1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	275121	14.6935	14.69
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	167355	14.1901	14.19
54	1,3-Dichloropropane	76	6.983	6.983	(0.910)	115021	13.6260	13.62
84	1,4-Dichlorobenzene	146	9.683	9.683	(1.002)	166742	13.9131	13.91
26	2,2-Dichloropropane	77	3.516	3.516	(0.841)	110682	13.7436	13.74
24	2-Butanone	43	3.580	3.573	(0.856)	48762	26.0590	26.05
76	2-Chlorotoluene	91	8.974	8.974	(0.929)	227783	15.3951	15.39
52	2-Hexanone	43	7.090	7.090	(0.924)	84878	25.9777	25.97
77	4-Chlorotoluene	91	9.075	9.074	(0.939)	262068	14.6130	14.61
82	p-Isopropyltoluene	119	9.655	9.655	(0.999)	292996	14.5606	14.56
45	4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	124479	26.7104	26.71
10	Acetone	43	1.976	1.976	(0.473)	36502	20.1543	20.15
37	Benzene	78	4.512	4.519	(0.908)	285395	14.3647	14.36
74	Bromobenzene	156	8.810	8.809	(0.912)	101405	14.1880	14.18
29	Bromochloromethane	128	3.795	3.795	(0.908)	45770	13.8544	13.85
39	Bromodichloromethane	83	5.729	5.729	(1.153)	100327	13.9587	13.95
66	Bromoform	173	8.416	8.415	(1.097)	58264	13.0550	13.05
6	Bromomethane	94	1.338	1.338	(0.320)	76664	10.8818	10.88
19	Carbon Disulfide	76	2.069	2.069	(0.495)	418196	29.7444	29.74
34	Carbon Tetrachloride	117	4.268	4.268	(0.859)	107613	14.0221	14.02
59	Chlorobenzene	112	7.699	7.699	(1.004)	209142	13.4686	13.46
7	Chloroethane	64	1.403	1.403	(0.336)	71508	18.6240	18.62
28	Chloroform	83	3.910	3.910	(0.935)	134380	13.6065	13.60
3	Chloromethane	50	1.073	1.073	(0.257)	63649	9.76141	9.76
27	cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	83594	14.4545	14.45
46	cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	117426	13.8637	13.86
55	Dibromochloromethane	129	7.176	7.176	(0.936)	80676	13.3564	13.35
44	Dibromomethane	93	5.557	5.557	(1.118)	51100	13.9181	13.91
2	Dichlorodifluoromethane	85	0.973	0.973	(0.233)	56111	10.8013	10.80
61	Ethylbenzene	106	7.800	7.799	(1.017)	112329	14.0006	14.00
91	Hexachlorobutadiene	225	11.481	11.488	(1.188)	33636	10.1774	10.17
67	Isopropylbenzene	105	8.566	8.566	(1.117)	333469	14.0323	14.03
62	m,p-Xylenes	106	7.907	7.907	(1.031)	269042	27.7890	27.78
17	Methylene Chloride	84	2.305	2.305	(0.551)	74456	13.5027	13.50
87	n-Butylbenzene	91	9.999	9.998	(1.035)	241730	14.4352	14.43
73	n-Propylbenzene	91	8.917	8.917	(0.923)	385052	15.1476	15.14
92	Naphthalene	128	11.546	11.546	(1.195)	49849	11.2193	11.21
63	o-Xylene	106	8.244	8.244	(1.075)	129509	13.5538	13.55
81	sec-Butylbenzene	105	9.526	9.526	(0.986)	328970	14.8971	14.89
64	Styrene	104	8.258	8.258	(1.077)	225783	13.5885	13.58
78	tert-Butylbenzene	119	9.340	9.339	(0.967)	238940	14.9041	14.90
56	Tetrachloroethene	164	6.933	6.933	(0.904)	76104	13.6179	13.61
50	Toluene	91	6.446	6.446	(0.840)	315017	13.9665	13.96
20	trans-1,2-Dichloroethene	96	2.528	2.527	(0.604)	72655	14.4802	14.48
51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	104847	13.5817	13.58
38	Trichloroethene	130	5.214	5.206	(1.049)	86468	14.2360	14.23
8	Trichlorofluoromethane	101	1.561	1.560	(0.373)	119945	12.6793	12.67
5	Vinyl Chloride	62	1.138	1.138	(0.272)	73206	11.7785	11.77

QC Flag Legend

M - Compound response manually integrated.



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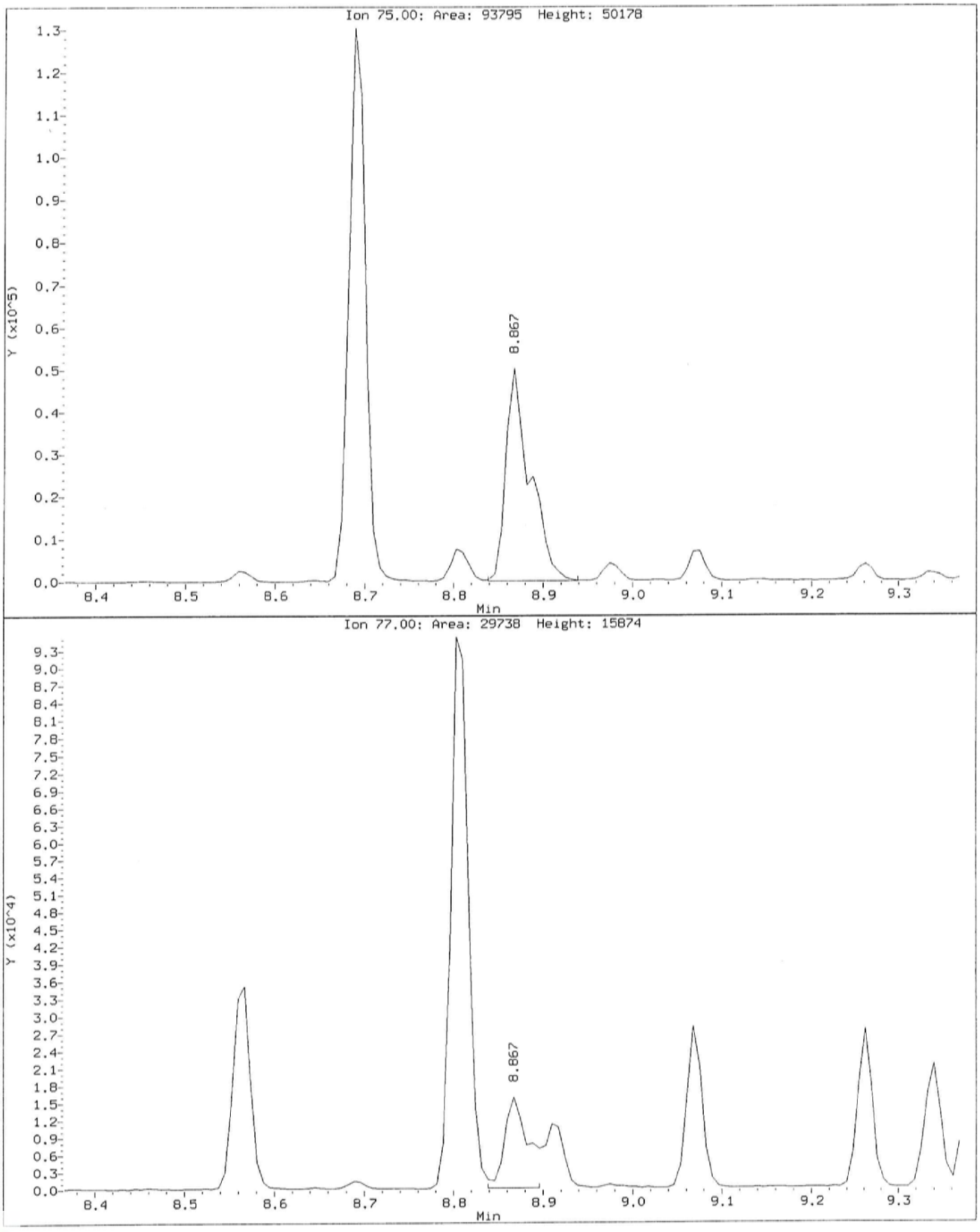
Date : 06-DEC-2019 17:48
Client ID: HS19120153-06HSD
Sample Info: HS19120153-06HSD;HS19120153-06HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\Before\X120619.D
Injection Date: 06-DEC-2019 17:48
Instrument: voa6.i
Client Sample ID: HS19120153-06MSD

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



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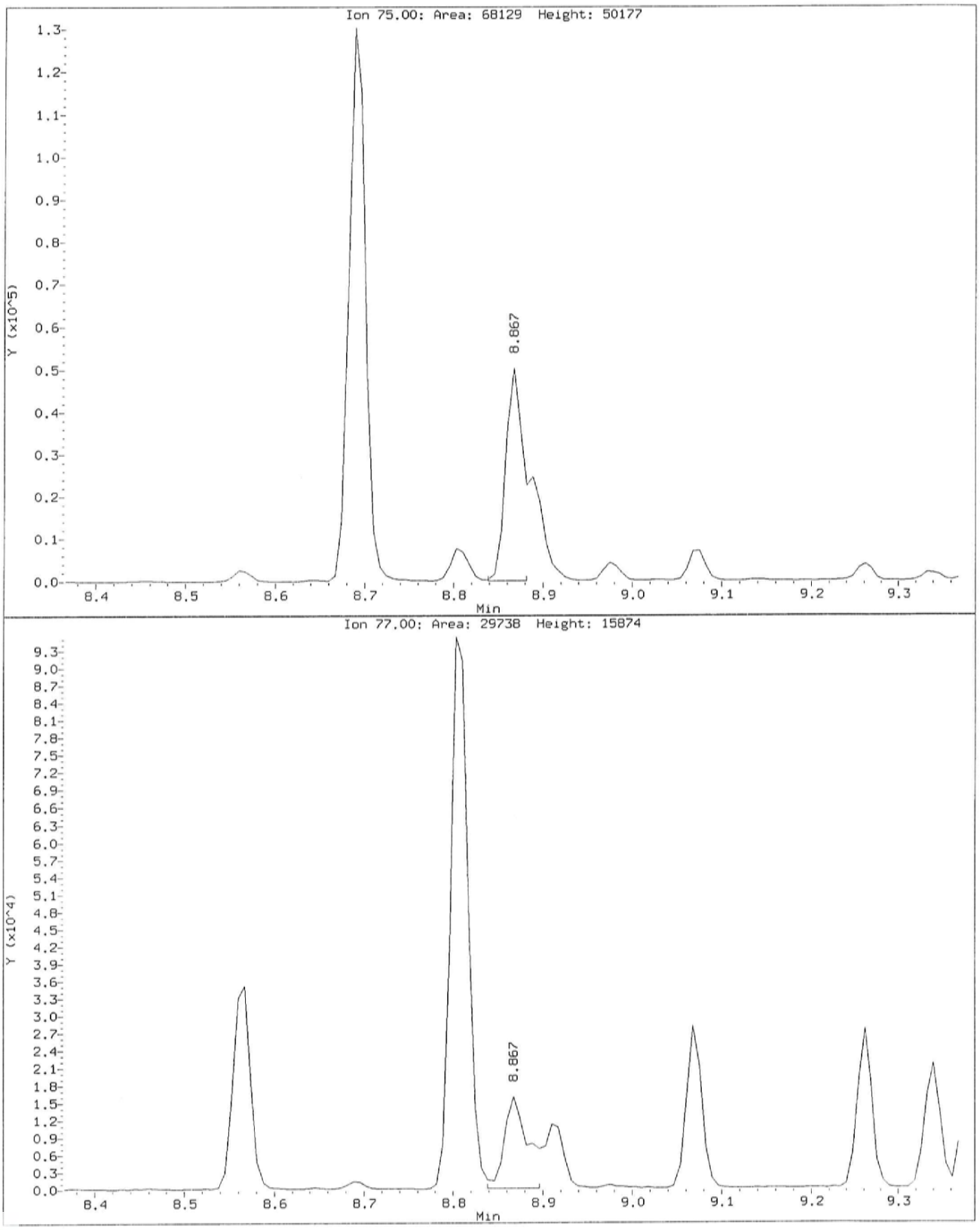
Injection Date: 06-DEC-2019 17:48
Instrument: voa6.i
Client Sample ID: HS19120153-06MSD

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4



ALS Laboratory Group

Data file : \\nahstws005\Target\chem\voa6.i\X191206.b\X120620.D
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Inj Date : 06-DEC-2019 18:12
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : HS18090001;WATER;0;1;
Comment :
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Meth Date : 15-Dec-2019 13:23 voa6.i Quant Type: ISTD
Cal Date : 18-NOV-2019 16:35 Cal File: X111808.D
Als bottle: 19 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CBIHOUSTONDOD.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

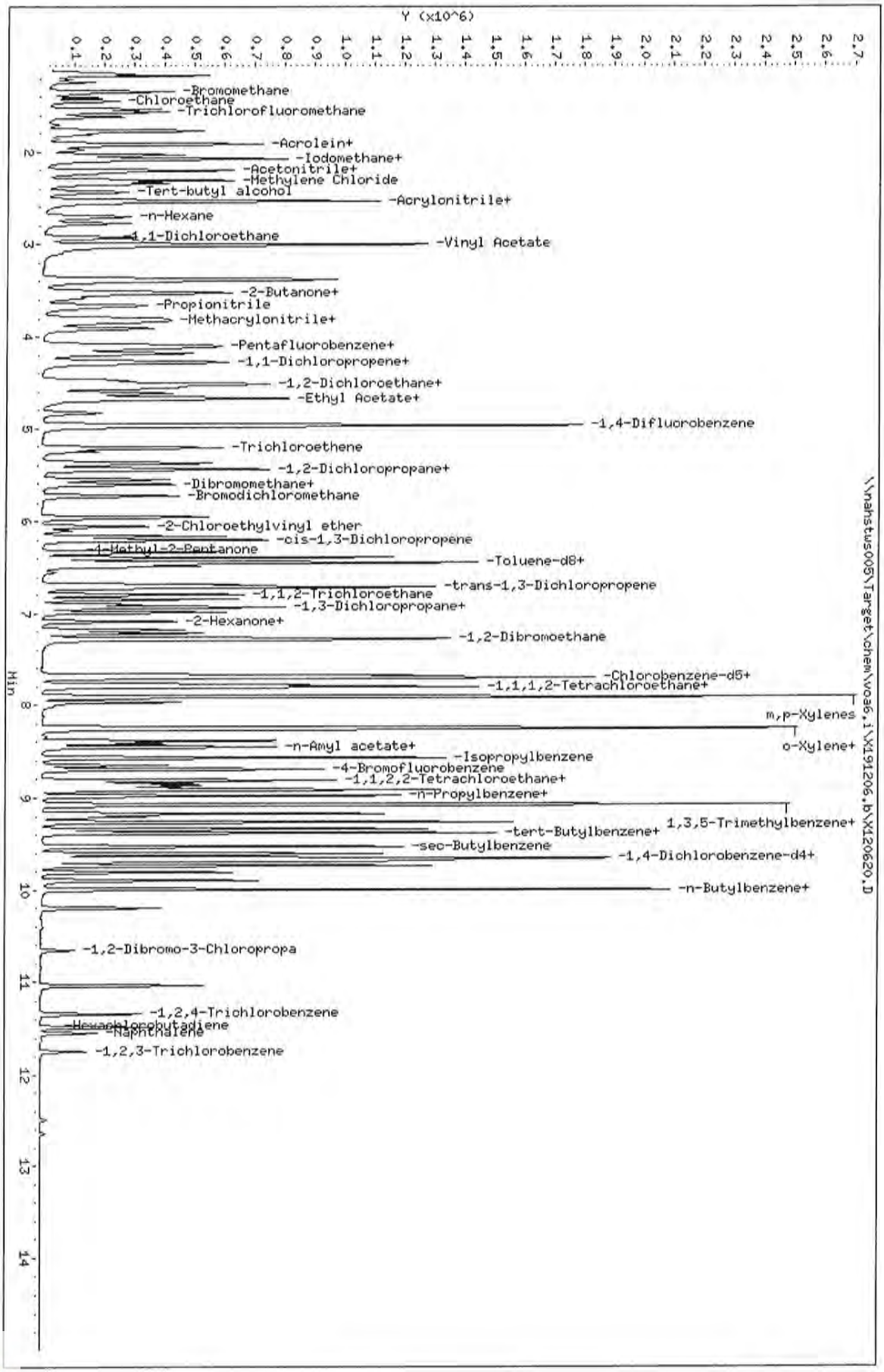
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.182	4.182	(1.000)	429670	50.0000	
*	36 1,4-Difluorobenzene	114	4.970	4.970	(1.000)	621880	50.0000	
*	47 Chlorobenzene-d5	117	7.671	7.670	(1.000)	572848	50.0000	
*	70 1,4-Dichlorobenzene-d4	152	9.669	9.662	(1.000)	297763	50.0000	
$	35 1,2-Dichloroethane-d4	65	4.476	4.476	(1.070)	210901	50.0000	52.14
$	69 4-Bromofluorobenzene	95	8.688	8.688	(1.133)	261170	50.0000	49.01
$	30 Dibromofluoromethane	113	4.103	4.103	(0.981)	195886	50.0000	50.13
$	48 Toluene-d8	98	6.388	6.388	(0.833)	688548	50.0000	45.61
	60 1,1,1,2-Tetrachloroethane	131	7.778	7.778	(1.014)	203389	50.0000	48.93
	31 1,1,1-Trichloroethane	97	4.089	4.089	(0.978)	280689	50.0000	48.42
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	215801	50.0000	51.53
	138 Freon TF	101	1.911	1.919	(0.457)	134315	50.0000	35.90
	53 1,1,2-Trichloroethane	83	6.840	6.840	(0.892)	149705	50.0000	49.99
	22 1,1-Dichloroethane	63	2.921	2.921	(0.699)	324069	50.0000	51.83
	11 1,1-Dichloroethene	96	1.911	1.911	(0.457)	154737	50.0000	42.49
	32 1,1-Dichloropropene	75	4.282	4.282	(0.862)	227398	50.0000	45.33
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.215)	43342	50.0000	39.00
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.917)	184855	50.0000	52.10(M)
	90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	94843	50.0000	37.81
	79 1,2,4-Trimethylbenzene	105	9.382	9.382	(0.970)	682281	50.0000	48.29
	89 1,2-Dibromo-3-Chloropropane	155	10.658	10.657	(1.102)	22021	50.0000	47.62
	57 1,2-Dibromoethane	107	7.262	7.262	(0.947)	202791	50.0000	50.47
	88 1,2-Dichlorobenzene	146	9.999	9.998	(1.034)	377455	50.0000	47.76

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
33 1,2-Dichloroethane	62	4.562	4.562	(0.918)	258655	50.0000	52.39
42 1,2-Dichloropropane	63	5.436	5.443	(1.094)	185444	50.0000	49.91
75 1,3,5-Trimethylbenzene	105	9.067	9.067	(0.938)	653101	50.0000	48.17
83 1,3-Dichlorobenzene	146	9.605	9.605	(0.993)	415314	50.0000	48.63
54 1,3-Dichloropropane	76	6.983	6.983	(0.910)	302690	50.0000	49.78
84 1,4-Dichlorobenzene	146	9.683	9.683	(1.001)	419658	50.0000	48.36
26 2,2-Dichloropropane	77	3.516	3.516	(0.841)	265398	50.0000	46.77
24 2-Butanone	43	3.573	3.573	(0.854)	135601	100.000	102.85
76 2-Chlorotoluene	91	8.974	8.974	(0.928)	551018	50.0000	51.43
52 2-Hexanone	43	7.090	7.090	(0.924)	234482	100.000	99.64
77 4-Chlorotoluene	91	9.074	9.074	(0.939)	649548	50.0000	50.02
82 p-Isopropyltoluene	119	9.655	9.655	(0.999)	649512	50.0000	44.57
45 4-Methyl-2-Pentanone	43	6.324	6.324	(0.824)	344314	100.000	102.58
10 Acetone	43	1.976	1.976	(0.473)	98912	100.000	88.49
37 Benzene	78	4.512	4.519	(0.908)	723838	50.0000	50.88
74 Bromobenzene	156	8.809	8.809	(0.911)	260922	50.0000	50.42
29 Bromochloromethane	128	3.795	3.795	(0.908)	118264	50.0000	50.80
39 Bromodichloromethane	83	5.729	5.729	(1.153)	263317	50.0000	51.16
66 Bromoform	173	8.415	8.415	(1.097)	160348	50.0000	47.06
6 Bromomethane	94	1.338	1.338	(0.320)	194524	50.0000	45.32
19 Carbon Disulfide	76	2.069	2.069	(0.495)	990912	100.000	100.03
34 Carbon Tetrachloride	117	4.268	4.268	(0.859)	237024	50.0000	43.13
59 Chlorobenzene	112	7.699	7.699	(1.004)	534408	50.0000	47.78
7 Chloroethane	64	1.403	1.403	(0.336)	123572	50.0000	45.67
28 Chloroform	83	3.910	3.910	(0.935)	345448	50.0000	49.64
3 Chloromethane	50	1.073	1.073	(0.257)	183234	50.0000	39.30
27 cis-1,2-Dichloroethene	96	3.530	3.530	(0.844)	216406	50.0000	53.10
46 cis-1,3-Dichloropropene	75	6.159	6.159	(1.239)	308620	50.0000	50.88
55 Dibromochloromethane	129	7.176	7.176	(0.936)	215920	50.0000	49.63
44 Dibromomethane	93	5.557	5.557	(1.118)	132390	50.0000	50.36
2 Dichlorodifluoromethane	85	0.973	0.973	(0.233)	186608	50.0000	47.70
61 Ethylbenzene	106	7.799	7.799	(1.017)	268803	50.0000	46.51
91 Hexachlorobutadiene	225	11.481	11.488	(1.187)	67376	50.0000	28.15
67 Isopropylbenzene	105	8.566	8.566	(1.117)	756350	50.0000	44.19
62 m,p-Xylenes	106	7.907	7.907	(1.031)	647718	100.000	92.89
17 Methylene Chloride	84	2.305	2.305	(0.551)	193913	50.0000	49.91
87 n-Butylbenzene	91	9.999	9.998	(1.034)	524438	50.0000	43.25
73 n-Propylbenzene	91	8.917	8.917	(0.922)	871102	50.0000	47.32
92 Naphthalene	128	11.546	11.546	(1.194)	126368	50.0000	39.28
63 o-Xylene	106	8.244	8.244	(1.075)	322493	50.0000	46.86
81 sec-Butylbenzene	105	9.526	9.526	(0.985)	703785	50.0000	44.01
64 Styrene	104	8.258	8.258	(1.077)	580884	50.0000	48.54
78 tert-Butylbenzene	119	9.340	9.339	(0.966)	527807	50.0000	45.46
56 Tetrachloroethene	164	6.933	6.933	(0.904)	168758	50.0000	41.92
50 Toluene	91	6.446	6.446	(0.840)	776113	50.0000	47.77
20 trans-1,2-Dichloroethene	96	2.527	2.527	(0.604)	180850	50.0000	51.15
51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.344)	281133	50.0000	50.86
38 Trichloroethene	130	5.206	5.206	(1.048)	211436	50.0000	48.61
8 Trichlorofluoromethane	101	1.560	1.560	(0.373)	274327	50.0000	41.15
5 Vinyl Chloride	62	1.138	1.138	(0.272)	195752	50.0000	44.70

QC Flag Legend

M - Compound response manually integrated.



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Date : 06-DEC-2019 18:12
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120602.D Page 4
Report Date: 15-Dec-2019 13:24

ALS Laboratory Group

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: voa6.i Injection Date: 06-DEC-2019 10:56
Lab File ID: X120602.D Init. Cal. Date(s): 18-NOV-2019 18-NOV-2019
Analysis Type: WATER Init. Cal. Times: 13:47 17:46
Lab Sample ID: CCV Quant Type: ISTD
Method: \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 35 1,2-Dichloroethane-d4	50.00000	54.27640	0.51123	0.100	-8.55281	20.00000	Linear
$ 69 4-Bromofluorobenzene	50.00000	52.24889	0.48629	0.100	-4.49777	20.00000	Linear
$ 30 Dibromofluoromethane	50.00000	52.70184	0.47939	0.100	-5.40368	20.00000	Linear
$ 48 Toluene-d8	1.31740	1.26649	1.26649	0.100	3.86439	20.00000	Averaged
60 1,1,1,2-Tetrachloroethane	0.36274	0.36192	0.36192	0.100	0.22638	20.00000	Averaged
31 1,1,1-Trichloroethane	0.67453	0.67997	0.67997	0.100	-0.80601	20.00000	Averaged
68 1,1,2,2-Tetrachloroethane	0.70309	0.71233	0.71233	0.300	-1.31456	20.00000	Averaged
138 Freon TF	0.43530	0.37222	0.37222	0.100	14.49273	20.00000	Averaged
53 1,1,2-Trichloroethane	0.26137	0.26217	0.26217	0.100	-0.30721	20.00000	Averaged
22 1,1-Dichloroethane	0.72751	0.74949	0.74949	0.200	-3.02163	20.00000	Averaged
11 1,1-Dichloroethene	0.42373	0.37256	0.37256	0.100	12.07665	20.00000	Averaged
32 1,1-Dichloropropene	0.40333	0.39308	0.39308	0.100	2.54102	20.00000	Averaged
93 1,2,3-Trichlorobenzene	50.00000	44.92318	0.16728	0.100	10.15364	20.00000	Quadratic
71 1,2,3-Trichloropropane	0.59574	0.61923	0.61923	0.100	-3.94310	20.00000	Averaged
90 1,2,4-Trichlorobenzene	0.42118	0.35807	0.35807	0.200	14.98576	20.00000	Averaged
79 1,2,4-Trimethylbenzene	2.37245	2.48857	2.48857	0.100	-4.89465	20.00000	Averaged
89 1,2-Dibromo-3-Chloropropane	50.00000	48.46558	0.07525	0.050	3.06883	20.00000	Linear
57 1,2-Dibromoethane	0.35068	0.35382	0.35382	0.100	-0.89675	20.00000	Averaged
88 1,2-Dichlorobenzene	1.32702	1.33116	1.33116	0.400	-0.31204	20.00000	Averaged
33 1,2-Dichloroethane	0.39691	0.41359	0.41359	0.100	-4.20265	20.00000	Averaged
42 1,2-Dichloropropane	0.29868	0.30008	0.30008	0.100	-0.46947	20.00000	Averaged
75 1,3,5-Trimethylbenzene	2.27648	2.37273	2.37273	0.100	-4.22794	20.00000	Averaged
83 1,3-Dichlorobenzene	1.43390	1.47316	1.47316	0.600	-2.73735	20.00000	Averaged
54 1,3-Dichloropropane	0.53065	0.53410	0.53410	0.100	-0.65031	20.00000	Averaged
84 1,4-Dichlorobenzene	1.45709	1.48495	1.48495	0.400	-1.91159	20.00000	Averaged
26 2,2-Dichloropropane	0.66029	0.67400	0.67400	0.100	-2.07534	20.00000	Averaged
24 2-Butanone	0.15342	0.15914	0.15914	0.100	-3.72943	20.00000	Averaged
76 2-Chlorotoluene	1.79889	1.97599	1.97599	0.100	-9.84474	20.00000	Averaged
52 2-Hexanone	0.20539	0.20285	0.20285	0.100	1.23904	20.00000	Averaged
77 4-Chlorotoluene	2.18043	2.30542	2.30542	0.100	-5.73239	20.00000	Averaged
82 p-Isopropyltoluene	2.44652	2.49863	2.49863	0.100	-2.13017	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.29296	0.29060	0.29060	0.100	0.80501	20.00000	Averaged
10 Acetone	100	96.41608	0.12498	0.100	3.58392	20.00000	Linear
37 Benzene	1.14377	1.17920	1.17920	0.500	-3.09727	20.00000	Averaged
74 Bromobenzene	0.86897	0.92265	0.92265	0.100	-6.17657	20.00000	Averaged
29 Bromochloromethane	0.27087	0.27612	0.27612	0.100	-1.94024	20.00000	Averaged
39 Bromodichloromethane	0.41377	0.42718	0.42718	0.200	-3.23891	20.00000	Averaged
66 Bromoform	50.00000	47.89568	0.28494	0.100	4.20864	20.00000	Linear
6 Bromomethane	50.00000	45.58490	0.45523	0.100	8.83019	20.00000	Linear
19 Carbon Disulfide	1.15275	1.18066	1.18066	0.100	-2.42148	20.00000	Averaged
34 Carbon Tetrachloride	0.44182	0.41617	0.41617	0.100	5.80445	20.00000	Averaged
59 Chlorobenzene	0.97615	0.95889	0.95889	0.500	1.76735	20.00000	Averaged
7 Chloroethane	0.31481	0.28663	0.28663	0.100	8.94974	20.00000	Averaged

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\X120602.D Page 5
Report Date: 15-Dec-2019 13:24

ALS Laboratory Group

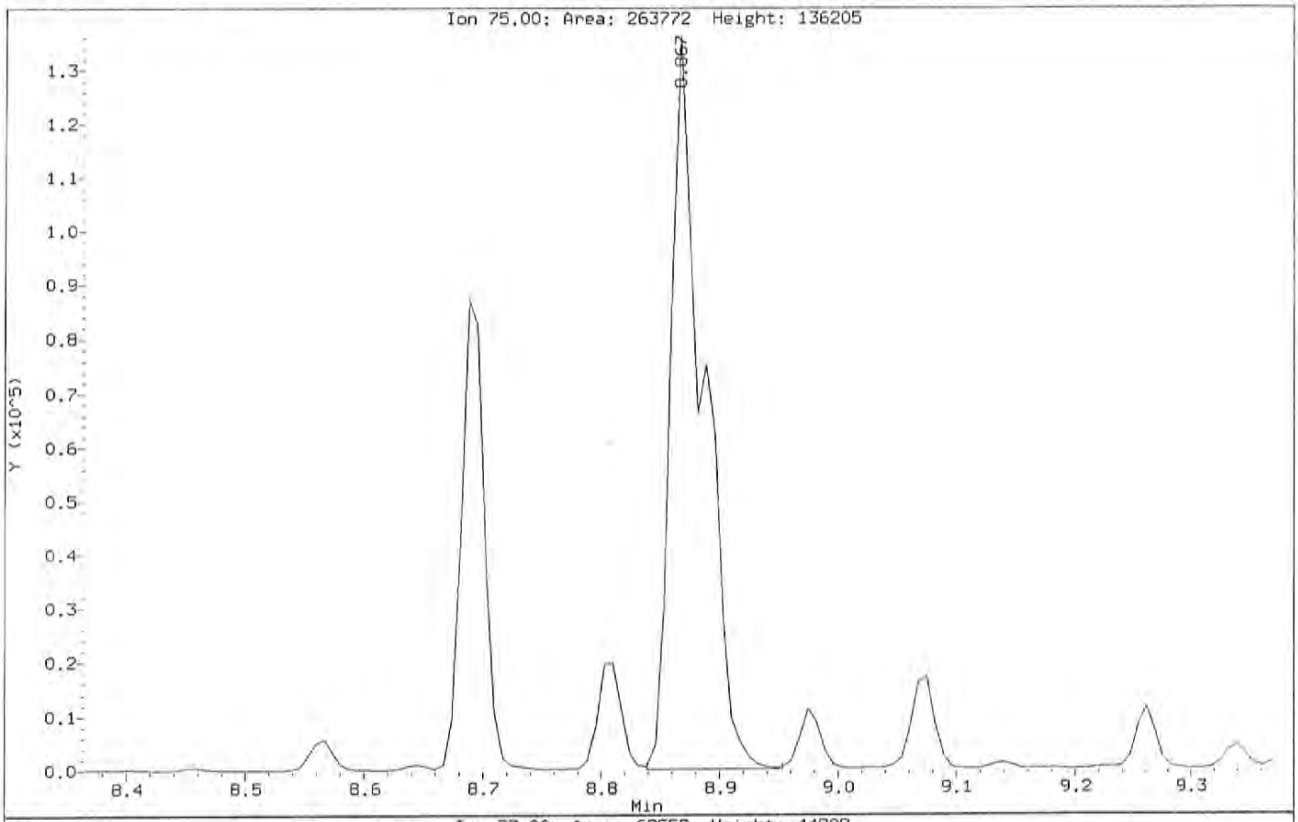
CONTINUING CALIBRATION COMPOUNDS

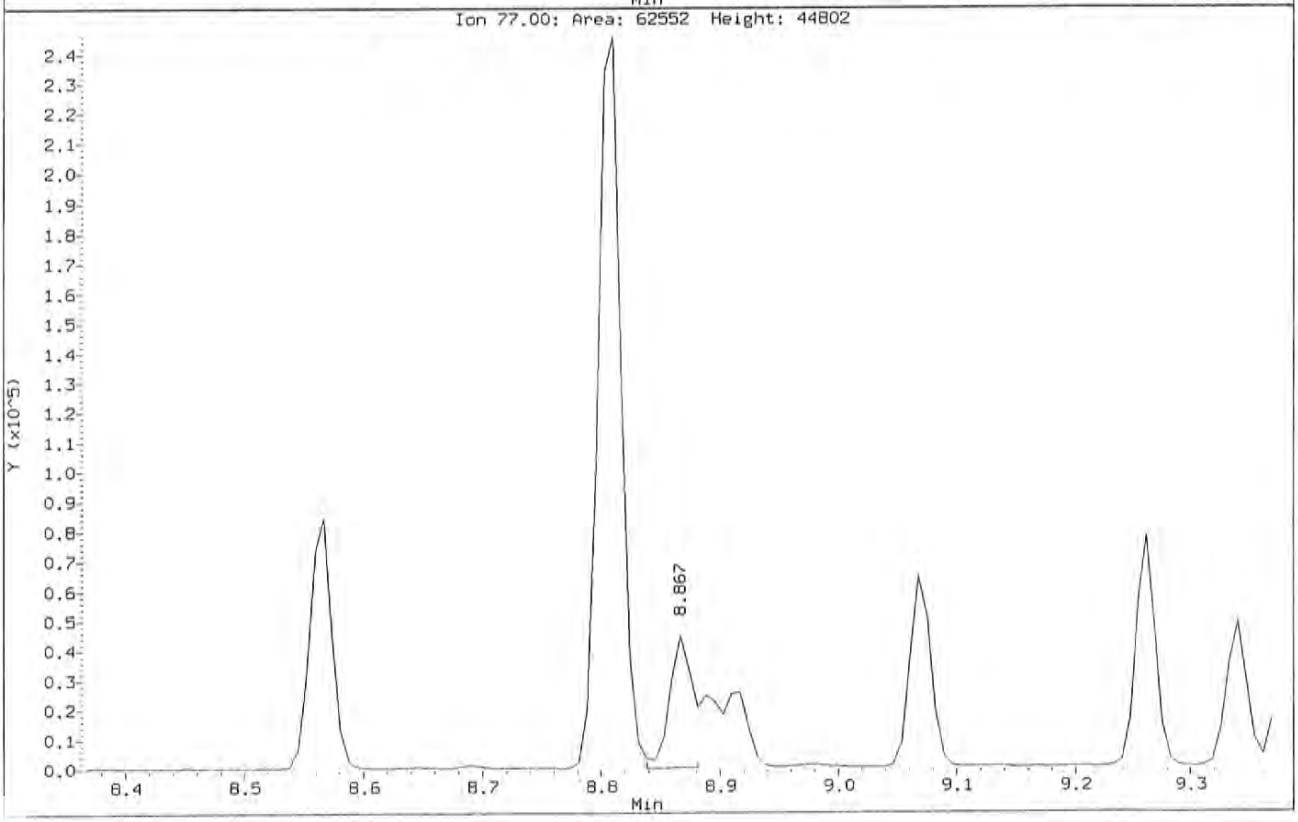
Instrument ID: voa6.i Injection Date: 06-DEC-2019 10:56
Lab File ID: X120602.D Init. Cal. Date(s): 18-NOV-2019 18-NOV-2019
Analysis Type: WATER Init. Cal. Times: 13:47 17:46
Lab Sample ID: CCV Quant Type: ISTD
Method: \\nahstws005\Target\chem\voa6.i\X191206.b\8260W.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
28 Chloroform	0.80975	0.80928	0.80928	0.200	0.05777	20.00000	Averaged
3 Chloromethane	50.00000	40.17075	0.43588	0.100	19.65851	20.00000	Linear
27 cis-1,2-Dichloroethene	0.47417	0.50171	0.50171	0.100	-5.80806	20.00000	Averaged
46 cis-1,3-Dichloropropene	0.48761	0.50744	0.50744	0.200	-4.06603	20.00000	Averaged
55 Dibromochloromethane	0.37971	0.38497	0.38497	0.100	-1.38520	20.00000	Averaged
44 Dibromomethane	0.21136	0.21384	0.21384	0.100	-1.17410	20.00000	Averaged
2 Dichlorodifluoromethane	50.00000	53.10408	0.48440	0.100	-6.20815	20.00000	Linear
61 Ethylbenzene	0.50436	0.49507	0.49507	0.100	1.84103	20.00000	Averaged
91 Hexachlorobutadiene	0.40182	0.32461	0.32461	0.100	19.21517	20.00000	Averaged
67 Isopropylbenzene	1.49390	1.43768	1.43768	0.100	3.76327	20.00000	Averaged
62 m,p-Xylenes	0.60862	0.60363	0.60363	0.100	0.81871	20.00000	Averaged
17 Methylene Chloride	0.45210	0.45158	0.45158	0.100	0.11593	20.00000	Averaged
87 n-Butylbenzene	2.03599	2.11036	2.11036	0.500	-3.65304	20.00000	Averaged
73 n-Propylbenzene	3.09060	3.23615	3.23615	0.100	-4.70959	20.00000	Averaged
92 Naphthalene	0.54020	0.47149	0.47149	0.200	12.71915	20.00000	Averaged
63 o-Xylene	0.60067	0.58264	0.58264	0.300	3.00135	20.00000	Averaged
81 sec-Butylbenzene	2.68486	2.74474	2.74474	0.100	-2.23037	20.00000	Averaged
64 Styrene	1.04451	1.04850	1.04850	0.300	-0.38163	20.00000	Averaged
78 tert-Butylbenzene	1.94918	1.98569	1.98569	0.100	-1.87306	20.00000	Averaged
56 Tetrachloroethene	0.35131	0.32201	0.32201	0.200	8.34171	20.00000	Averaged
50 Toluene	1.41789	1.40866	1.40866	0.400	0.65093	20.00000	Averaged
20 trans-1,2-Dichloroethene	0.41139	0.42150	0.42150	0.100	-2.45678	20.00000	Averaged
51 trans-1,3-Dichloropropene	0.44442	0.45831	0.45831	0.100	-3.12639	20.00000	Averaged
38 Trichloroethene	0.34967	0.35227	0.35227	0.200	-0.74451	20.00000	Averaged
8 Trichlorofluoromethane	0.77562	0.71088	0.71088	0.100	8.34609	20.00000	Averaged
5 Vinyl Chloride	0.50959	0.46835	0.46835	0.100	8.09160	20.00000	Averaged

Data File: \\nahstws005\Target\chem\voa6.i\X191206.b\Before\X120620.D
Injection Date: 06-DEC-2019 18:12
Instrument: voa6.i
Client Sample ID: CCV-END

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





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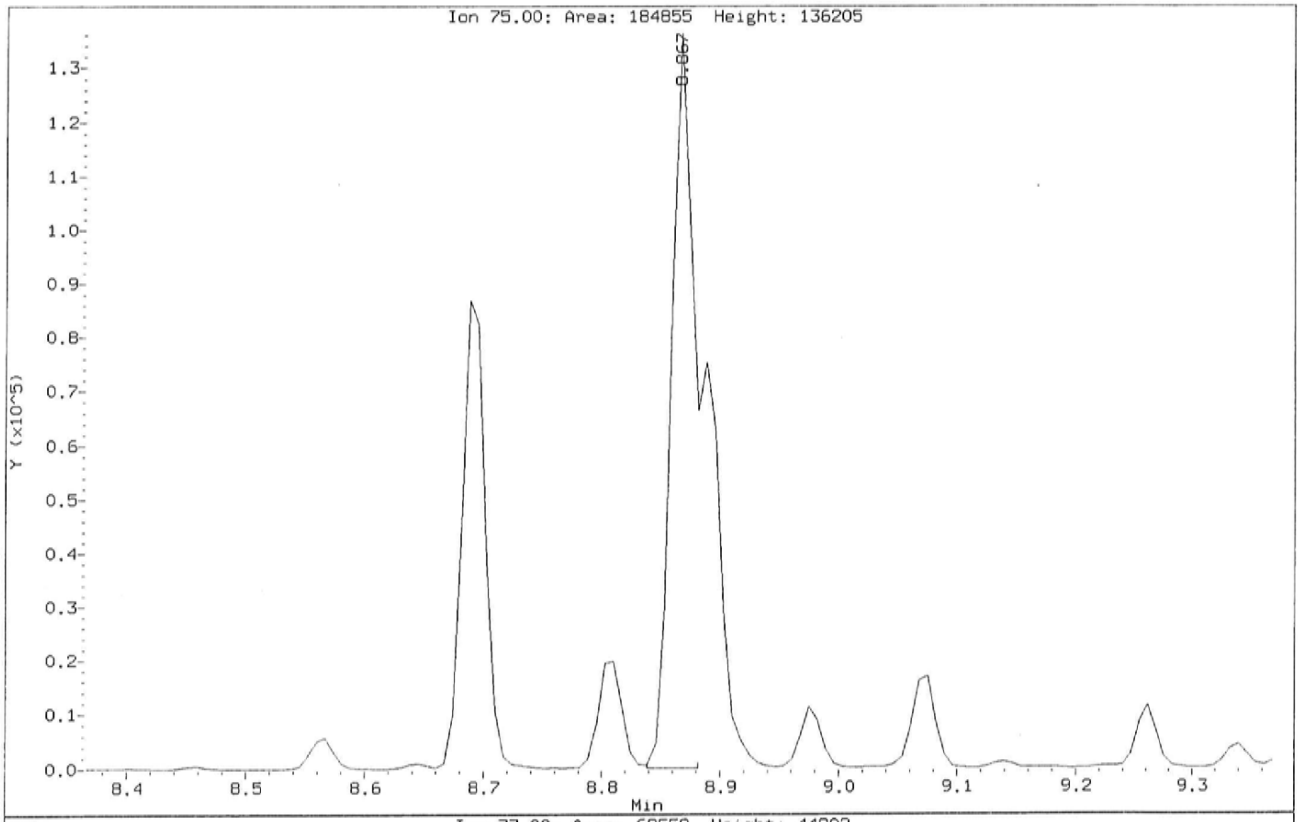
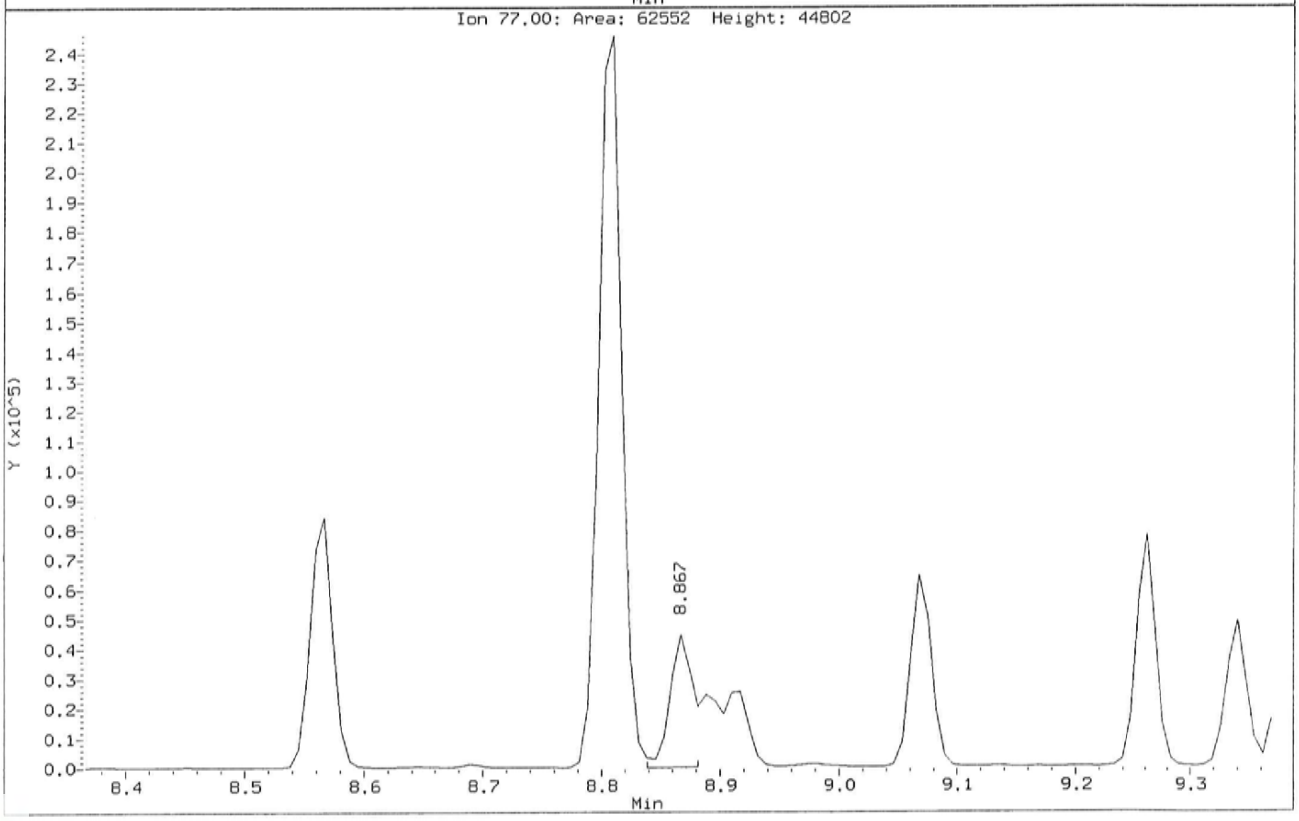
Injection Date: 06-DEC-2019 18:12
Instrument: voa6.i
Client Sample ID: CCV-END

Compound: 1,2,3-Trichloropropane
CAS Number: 96-18-4





10450 Stancliff Rd. Suite 210
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December 09, 2019

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

Work Order: **HS19120153**

Laboratory Results for: **Longhorn Army Ammunition Plant LHAAP - 12**

Dear Susan,

ALS Environmental received 7 sample(s) on Dec 04, 2019 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: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Work Order: HS19120153

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19120153-01	12WW10R-191203	Groundwater		03-Dec-2019 08:30	04-Dec-2019 09:13	☐
HS19120153-02	12WW21-191203	Groundwater		03-Dec-2019 09:20	04-Dec-2019 09:13	☐
HS19120153-03	12WW21-191203-FD	Groundwater		03-Dec-2019 09:20	04-Dec-2019 09:13	☐
HS19120153-04	12WW24-191203	Groundwater		03-Dec-2019 10:10	04-Dec-2019 09:13	☐
HS19120153-05	12WW20-191203	Groundwater		03-Dec-2019 10:55	04-Dec-2019 09:13	☐
HS19120153-06	12WW22-191203	Groundwater		03-Dec-2019 11:45	04-Dec-2019 09:13	☐
HS19120153-07	Trip Blank	Groundwater	CG 111519 -16	03-Dec-2019 00:00	04-Dec-2019 09:13	☐

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Work Order: HS19120153

CASE NARRATIVE

GCMS Volatiles by Method SW8260

Batch ID: R352004

Sample ID: 12WW22-191203 (HS19120153-06MS)

- MS/MSD failed QC limits for several compounds. The RPD between the MS and MSD was outside of the control limit for 1,2,3-Trichlorobenzene

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW10R-191203
Collection Date: 03-Dec-2019 08:30

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-01
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	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 14:12
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Dec-2019 14:12
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Dec-2019 14:12
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 14:12
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Dec-2019 14:12
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW10R-191203
Collection Date: 03-Dec-2019 08:30

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 14:12
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 14:12
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:12
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:12
Surr: 1,2-Dichloroethane-d4	*99.3*			**0**	*81-118*	*%REC*	*1*	*06-Dec-2019 14:12*
Surr: 4-Bromofluorobenzene	*99.8*			**0**	*85-114*	*%REC*	*1*	*06-Dec-2019 14:12*
Surr: Dibromofluoromethane	*100.0*			**0**	*80-119*	*%REC*	*1*	*06-Dec-2019 14:12*
Surr: Toluene-d8	*96.6*			**0**	*89-112*	*%REC*	*1*	*06-Dec-2019 14:12*

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW21-191203
Collection Date: 03-Dec-2019 09:20

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-02
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	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 14:36
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Dec-2019 14:36
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Dec-2019 14:36
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 14:36
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Dec-2019 14:36
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW21-191203
Collection Date: 03-Dec-2019 09:20

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 14:36
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 14:36
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 14:36
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 14:36
Surr: 1,2-Dichloroethane-d4	*101*			**0**	*81-118*	*%REC*	*1*	*06-Dec-2019 14:36*
Surr: 4-Bromofluorobenzene	*99.6*			**0**	*85-114*	*%REC*	*1*	*06-Dec-2019 14:36*
Surr: Dibromofluoromethane	*100*			**0**	*80-119*	*%REC*	*1*	*06-Dec-2019 14:36*
Surr: Toluene-d8	*95.6*			**0**	*89-112*	*%REC*	*1*	*06-Dec-2019 14:36*

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW21-191203-FD
Collection Date: 03-Dec-2019 09:20

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-03
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	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 15:00
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Dec-2019 15:00
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Dec-2019 15:00
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 15:00
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Dec-2019 15:00
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW21-191203-FD
Collection Date: 03-Dec-2019 09:20

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 15:00
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 15:00
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:00
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:00
Surr: 1,2-Dichloroethane-d4	*100*			**0**	*81-118*	*%REC*	*1*	*06-Dec-2019 15:00*
Surr: 4-Bromofluorobenzene	*99.0*			**0**	*85-114*	*%REC*	*1*	*06-Dec-2019 15:00*
Surr: Dibromofluoromethane	*100*			**0**	*80-119*	*%REC*	*1*	*06-Dec-2019 15:00*
Surr: Toluene-d8	*95.8*			**0**	*89-112*	*%REC*	*1*	*06-Dec-2019 15:00*

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW24-191203
Collection Date: 03-Dec-2019 10:10

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-04
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	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 15:24
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Dec-2019 15:24
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Dec-2019 15:24
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 15:24
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Dec-2019 15:24
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW24-191203
Collection Date: 03-Dec-2019 10:10

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
cis-1,2-Dichloroethene	**12**		**0.20**	**0.50**	**1.0**	**UG/L**	1	06-Dec-2019 15:24
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 15:24
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 15:24
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:24
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Trichloroethene	**19**		**0.20**	**0.50**	**1.0**	**UG/L**	1	06-Dec-2019 15:24
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:24
Surr: 1,2-Dichloroethane-d4	*102*			**0**	*81-118*	*%REC*	*1*	*06-Dec-2019 15:24*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*06-Dec-2019 15:24*
Surr: Dibromofluoromethane	*101*			**0**	*80-119*	*%REC*	*1*	*06-Dec-2019 15:24*
Surr: Toluene-d8	*94.7*			**0**	*89-112*	*%REC*	*1*	*06-Dec-2019 15:24*

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW20-191203
Collection Date: 03-Dec-2019 10:55

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-05
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	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 15:48
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Dec-2019 15:48
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Dec-2019 15:48
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 15:48
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Dec-2019 15:48
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW20-191203
Collection Date: 03-Dec-2019 10:55

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 15:48
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 15:48
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 15:48
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 15:48
Surr: 1,2-Dichloroethane-d4	*101*			**0**	*81-118*	*%REC*	*1*	*06-Dec-2019 15:48*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*06-Dec-2019 15:48*
Surr: Dibromofluoromethane	*100*			**0**	*80-119*	*%REC*	*1*	*06-Dec-2019 15:48*
Surr: Toluene-d8	*96.0*			**0**	*89-112*	*%REC*	*1*	*06-Dec-2019 15:48*

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW22-191203
Collection Date: 03-Dec-2019 11:45

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-06
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	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 13:48
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Dec-2019 13:48
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Dec-2019 13:48
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 13:48
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Dec-2019 13:48
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: 12WW22-191203
Collection Date: 03-Dec-2019 11:45

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 13:48
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 13:48
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:48
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:48
Surr: 1,2-Dichloroethane-d4	*100*			**0**	*81-118*	*%REC*	*1*	*06-Dec-2019 13:48*
Surr: 4-Bromofluorobenzene	*98.9*			**0**	*85-114*	*%REC*	*1*	*06-Dec-2019 13:48*
Surr: Dibromofluoromethane	*101*			**0**	*80-119*	*%REC*	*1*	*06-Dec-2019 13:48*
Surr: Toluene-d8	*96.7*			**0**	*89-112*	*%REC*	*1*	*06-Dec-2019 13:48*

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: Trip Blank
Collection Date: 03-Dec-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-07
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	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 13:20
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
2-Hexanone	1.0	U	1.0	1.0	2.0	UG/L	1	06-Dec-2019 13:20
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	UG/L	1	06-Dec-2019 13:20
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 13:20
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Bromobenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Bromoform	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Bromomethane	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	06-Dec-2019 13:20
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Chlorobenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Chloroethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
Sample ID: Trip Blank
Collection Date: 03-Dec-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19120153
Lab ID:HS19120153-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Chloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Dibromochloromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Ethylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Isopropylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	06-Dec-2019 13:20
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	06-Dec-2019 13:20
n-Butylbenzene	0.50	U	0.40	0.50	1.0	UG/L	1	06-Dec-2019 13:20
n-Propylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Naphthalene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
o-Xylene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Styrene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Tetrachloroethene	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	06-Dec-2019 13:20
Surr: 1,2-Dichloroethane-d4	*99.3*			**0**	*81-118*	*%REC*	*1*	*06-Dec-2019 13:20*
Surr: 4-Bromofluorobenzene	*99.9*			**0**	*85-114*	*%REC*	*1*	*06-Dec-2019 13:20*
Surr: Dibromofluoromethane	*99.5*			**0**	*80-119*	*%REC*	*1*	*06-Dec-2019 13:20*
Surr: Toluene-d8	*95.9*			**0**	*89-112*	*%REC*	*1*	*06-Dec-2019 13:20*

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

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R352004 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS19120153-01	12WW10R-191203	03 Dec 2019 08:30			06 Dec 2019 14:12	1
HS19120153-02	12WW21-191203	03 Dec 2019 09:20			06 Dec 2019 14:36	1
HS19120153-03	12WW21-191203-FD	03 Dec 2019 09:20			06 Dec 2019 15:00	1
HS19120153-04	12WW24-191203	03 Dec 2019 10:10			06 Dec 2019 15:24	1
HS19120153-05	12WW20-191203	03 Dec 2019 10:55			06 Dec 2019 15:48	1
HS19120153-06	12WW22-191203	03 Dec 2019 11:45			06 Dec 2019 13:48	1
HS19120153-07	Trip Blank	03 Dec 2019 00:00			06 Dec 2019 13:20	1

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-191206** Units: **UG/L** Analysis Date: **06-Dec-2019 12:56**
Client ID: Run ID: **VOA6_352004** SeqNo: **5378431** 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	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	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	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	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	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-191206** Units: **UG/L** Analysis Date: **06-Dec-2019 12:56**
Client ID: Run ID: **VOA6_352004** SeqNo: **5378431** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bromomethane	0.50	1.0								U
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	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	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	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	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*50.03*	*1.0*	*50*	*0*	*100*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.91*	*1.0*	*50*	*0*	*97.8*	*85 - 114*				
Surr: Dibromofluoromethane	*50.3*	*1.0*	*50*	*0*	*101*	*80 - 119*				

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-191206** Units: **UG/L** Analysis Date: **06-Dec-2019 12:56**
Client ID: Run ID: **VOA6_352004** SeqNo: **5378431** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*48.27*	*1.0*	*50*	*0*	*96.5*	*89 - 112*				

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-191206** Units: **UG/L** Analysis Date: **06-Dec-2019 12:08**
Client ID: Run ID: **VOA6_352004** SeqNo: **5378430** 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	20.5	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	20.16	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	21.74	1.0	20	0	109	71 - 121				
1,1,2-Trichlor-1,2,2-trifluoroethane	15.08	1.0	20	0	75.4	70 - 136				
1,1,2-Trichloroethane	21.19	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	22.05	1.0	20	0	110	77 - 125				
1,1-Dichloroethene	17.69	1.0	20	0	88.5	71 - 131				
1,1-Dichloropropene	19.01	1.0	20	0	95.1	78 - 125				
1,2,3-Trichlorobenzene	16.32	1.0	20	0	81.6	69 - 129				
1,2,3-Trichloropropane	21.53	1.0	20	0	108	73 - 122				
1,2,4-Trichlorobenzene	16.12	1.0	20	0	80.6	69 - 130				
1,2,4-Trimethylbenzene	19.88	1.0	20	0	99.4	76 - 124				
1,2-Dibromo-3-chloropropane	19.14	1.0	20	0	95.7	62 - 128				
1,2-Dibromoethane	21.13	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	20.18	1.0	20	0	101	80 - 119				
1,2-Dichloroethane	22.39	1.0	20	0	112	73 - 128				
1,2-Dichloropropane	21.49	1.0	20	0	107	78 - 122				
1,3,5-Trimethylbenzene	19.66	1.0	20	0	98.3	75 - 124				
1,3-Dichlorobenzene	20.34	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	21.21	1.0	20	0	106	80 - 119				
1,4-Dichlorobenzene	20.36	1.0	20	0	102	79 - 118				
2,2-Dichloropropane	20.73	1.0	20	0	104	60 - 139				
2-Butanone	43.48	2.0	40	0	109	56 - 143				
2-Chlorotoluene	21.59	1.0	20	0	108	79 - 122				
2-Hexanone	41.11	2.0	40	0	103	57 - 139				
4-Chlorotoluene	20.76	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	17.75	1.0	20	0	88.8	77 - 127				
4-Methyl-2-pentanone	41.7	2.0	40	0	104	67 - 130				
Acetone	41.89	2.0	40	0	105	39 - 160				
Benzene	21.59	1.0	20	0	108	79 - 120				
Bromobenzene	21.59	1.0	20	0	108	80 - 120				
Bromochloromethane	22.35	1.0	20	0	112	78 - 123				
Bromodichloromethane	21.83	1.0	20	0	109	79 - 125				
Bromoform	20.25	1.0	20	0	101	66 - 130				

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-191206** Units: **UG/L** Analysis Date: **06-Dec-2019 12:08**
Client ID: Run ID: **VOA6_352004** SeqNo: **5378430** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	20.92	1.0	20	0	105	53 - 141				
Carbon disulfide	41.67	2.0	40	0	104	64 - 133				
Carbon tetrachloride	17.86	1.0	20	0	89.3	72 - 136				
Chlorobenzene	20.25	1.0	20	0	101	82 - 118				
Chloroethane	19.24	1.0	20	0	96.2	60 - 138				
Chloroform	21.45	1.0	20	0	107	79 - 124				
Chloromethane	16.63	1.0	20	0	83.2	50 - 139				
cis-1,2-Dichloroethene	22.76	1.0	20	0	114	78 - 123				
cis-1,3-Dichloropropene	21.99	1.0	20	0	110	75 - 124				
Dibromochloromethane	21.12	1.0	20	0	106	74 - 126				
Dibromomethane	21.74	1.0	20	0	109	79 - 123				
Dichlorodifluoromethane	20.87	1.0	20	0	104	32 - 152				
Ethylbenzene	19.49	1.0	20	0	97.5	79 - 121				
Hexachlorobutadiene	14.25	1.0	20	0	71.2	66 - 134				
Isopropylbenzene	18.25	1.0	20	0	91.3	72 - 131				
m,p-Xylene	38.77	2.0	40	0	96.9	80 - 121				
Methylene chloride	21.52	2.0	20	0	108	74 - 124				
Naphthalene	16.04	1.0	20	0	80.2	61 - 128				
n-Butylbenzene	17.25	1.0	20	0	86.3	75 - 128				
n-Propylbenzene	19.36	1.0	20	0	96.8	76 - 126				
o-Xylene	19.68	1.0	20	0	98.4	78 - 122				
sec-Butylbenzene	17.72	1.0	20	0	88.6	77 - 126				
Styrene	19.89	1.0	20	0	99.4	78 - 123				
tert-Butylbenzene	18.39	1.0	20	0	92.0	78 - 124				
Tetrachloroethene	17.57	1.0	20	0	87.9	74 - 129				
Toluene	20.37	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	21.75	1.0	20	0	109	75 - 124				
trans-1,3-Dichloropropene	21.92	1.0	20	0	110	73 - 127				
Trichloroethene	20.52	1.0	20	0	103	79 - 123				
Trichlorofluoromethane	17.46	1.0	20	0	87.3	65 - 141				
Vinyl chloride	18.51	1.0	20	0	92.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.28*	*1.0*	*50*	*0*	*107*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.73*	*1.0*	*50*	*0*	*99.5*	*85 - 114*				
Surr: Dibromofluoromethane	*51.09*	*1.0*	*50*	*0*	*102*	*80 - 119*				

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-191206** Units: **UG/L** Analysis Date: **06-Dec-2019 12:08**
Client ID: Run ID: **VOA6_352004** SeqNo: **5378430** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*45.75*	*1.0*	*50*	*0*	*91.5*	*89 - 112*				

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19120153-06MS** Units: **UG/L** Analysis Date: **06-Dec-2019 17:24**
Client ID: **12WW22-191203** Run ID: **VOA6_352004** SeqNo: **5378439** 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	12.65	1.0	20	0	63.3	78 - 124			S
1,1,1-Trichloroethane	14.11	1.0	20	0	70.5	74 - 131			S
1,1,2,2-Tetrachloroethane	12.82	1.0	20	0	64.1	71 - 121			S
1,1,2-Trichlor-1,2,2-trifluoroethane	12.23	1.0	20	0	61.1	70 - 136			S
1,1,2-Trichloroethane	12.68	1.0	20	0	63.4	80 - 119			S
1,1-Dichloroethane	13.68	1.0	20	0	68.4	77 - 125			S
1,1-Dichloroethene	12.12	1.0	20	0	60.6	71 - 131			S
1,1-Dichloropropene	13.7	1.0	20	0	68.5	78 - 125			S
1,2,3-Trichlorobenzene	9.047	1.0	20	0	45.2	69 - 129			S
1,2,3-Trichloropropane	12.67	1.0	20	0	63.4	73 - 122			S
1,2,4-Trichlorobenzene	9.809	1.0	20	0	49.0	69 - 130			S
1,2,4-Trimethylbenzene	13.71	1.0	20	0	68.6	76 - 124			S
1,2-Dibromo-3-chloropropane	11.61	1.0	20	0	58.1	62 - 128			S
1,2-Dibromoethane	12.59	1.0	20	0	63.0	77 - 121			S
1,2-Dichlorobenzene	12.63	1.0	20	0	63.1	80 - 119			S
1,2-Dichloroethane	13.27	1.0	20	0	66.3	73 - 128			S
1,2-Dichloropropane	12.81	1.0	20	0	64.0	78 - 122			S
1,3,5-Trimethylbenzene	13.81	1.0	20	0	69.0	75 - 124			S
1,3-Dichlorobenzene	13.21	1.0	20	0	66.0	80 - 119			S
1,3-Dichloropropane	12.65	1.0	20	0	63.3	80 - 119			S
1,4-Dichlorobenzene	12.9	1.0	20	0	64.5	79 - 118			S
2,2-Dichloropropane	13.38	1.0	20	0	66.9	60 - 139			
2-Butanone	24.35	2.0	40	0	60.9	56 - 143			
2-Chlorotoluene	14.27	1.0	20	0	71.4	79 - 122			S
2-Hexanone	24.39	2.0	40	0	61.0	57 - 139			
4-Chlorotoluene	13.72	1.0	20	0	68.6	78 - 122			S
4-Isopropyltoluene	13.53	1.0	20	0	67.7	77 - 127			S
4-Methyl-2-pentanone	24.98	2.0	40	0	62.5	67 - 130			S
Acetone	18.95	2.0	40	0	47.4	39 - 160			
Benzene	13.67	1.0	20	0	68.3	79 - 120			S
Bromobenzene	13.2	1.0	20	0	66.0	80 - 120			S
Bromochloromethane	13.12	1.0	20	0	65.6	78 - 123			S
Bromodichloromethane	13.27	1.0	20	0	66.3	79 - 125			S
Bromoform	12.33	1.0	20	0	61.7	66 - 130			S

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS19120153-06MS** Units: **UG/L** Analysis Date: **06-Dec-2019 17:24**
Client ID: **12WW22-191203** Run ID: **VOA6_352004** SeqNo: **5378439** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Bromomethane	11.25	1.0	20	0	56.2	53 - 141			
Carbon disulfide	28.93	2.0	40	0	72.3	64 - 133			
Carbon tetrachloride	13.36	1.0	20	0	66.8	72 - 136			S
Chlorobenzene	12.68	1.0	20	0	63.4	82 - 118			S
Chloroethane	15.51	1.0	20	0	77.5	60 - 138			
Chloroform	13	1.0	20	0	65.0	79 - 124			S
Chloromethane	9.774	1.0	20	0	48.9	50 - 139			S
cis-1,2-Dichloroethene	14.05	1.0	20	0	70.3	78 - 123			S
cis-1,3-Dichloropropene	13	1.0	20	0	65.0	75 - 124			S
Dibromochloromethane	12.68	1.0	20	0	63.4	74 - 126			S
Dibromomethane	12.93	1.0	20	0	64.7	79 - 123			S
Dichlorodifluoromethane	10.69	1.0	20	0	53.4	32 - 152			
Ethylbenzene	13.12	1.0	20	0	65.6	79 - 121			S
Hexachlorobutadiene	8.799	1.0	20	0	44.0	66 - 134			S
Isopropylbenzene	13.31	1.0	20	0	66.5	72 - 131			S
m,p-Xylene	26.31	2.0	40	0	65.8	80 - 121			S
Methylene chloride	12.87	2.0	20	0	64.3	74 - 124			S
Naphthalene	9.296	1.0	20	0	46.5	61 - 128			S
n-Butylbenzene	13.37	1.0	20	0	66.9	75 - 128			S
n-Propylbenzene	14.18	1.0	20	0	70.9	76 - 126			S
o-Xylene	12.83	1.0	20	0	64.2	78 - 122			S
sec-Butylbenzene	13.95	1.0	20	0	69.8	77 - 126			S
Styrene	12.58	1.0	20	0	62.9	78 - 123			S
tert-Butylbenzene	14.02	1.0	20	0	70.1	78 - 124			S
Tetrachloroethene	13.02	1.0	20	0	65.1	74 - 129			S
Toluene	13.13	1.0	20	0	65.7	80 - 121			S
trans-1,2-Dichloroethene	14.03	1.0	20	0	70.1	75 - 124			S
trans-1,3-Dichloropropene	12.77	1.0	20	0	63.9	73 - 127			S
Trichloroethene	13.5	1.0	20	0	67.5	79 - 123			S
Trichlorofluoromethane	12.46	1.0	20	0	62.3	65 - 141			S
Vinyl chloride	11.28	1.0	20	0	56.4	58 - 137			S
Surr: 1,2-Dichloroethane-d4	*50.82*	*1.0*	*50*	*0*	*102*	*81 - 118*			
Surr: 4-Bromofluorobenzene	*50.72*	*1.0*	*50*	*0*	*101*	*85 - 114*			
Surr: Dibromofluoromethane	*50.48*	*1.0*	*50*	*0*	*101*	*80 - 119*			

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS19120153-06MS** Units: **UG/L** Analysis Date: **06-Dec-2019 17:24**
Client ID: **12WW22-191203** Run ID: **VOA6_352004** SeqNo: **5378439** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*47.25*	*1.0*	*50*	*0*	*94.5*	*89 - 112*				

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19120153-06MSD** Units: **UG/L** Analysis Date: **06-Dec-2019 17:48**
Client ID: **12WW22-191203** Run ID: **VOA6_352004** SeqNo: **5378440** 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	13.6	1.0	20	0	68.0	78 - 124	12.65	7.19	20	S
1,1,1-Trichloroethane	14.46	1.0	20	0	72.3	74 - 131	14.11	2.49	20	S
1,1,2,2-Tetrachloroethane	13.99	1.0	20	0	70.0	71 - 121	12.82	8.73	20	S
1,1,2-Trichlor-1,2,2-trifluoroethane	12.3	1.0	20	0	61.5	70 - 136	12.23	0.603	20	S
1,1,2-Trichloroethane	13.73	1.0	20	0	68.7	80 - 119	12.68	7.97	20	S
1,1-Dichloroethane	14.38	1.0	20	0	71.9	77 - 125	13.68	5.01	20	S
1,1-Dichloroethene	12.36	1.0	20	0	61.8	71 - 131	12.12	1.93	20	S
1,1-Dichloropropene	14.29	1.0	20	0	71.5	78 - 125	13.7	4.27	20	S
1,2,3-Trichlorobenzene	11.35	1.0	20	0	56.7	69 - 129	9.047	22.6	20	SR
1,2,3-Trichloropropane	13.9	1.0	20	0	69.5	73 - 122	12.67	9.27	20	S
1,2,4-Trichlorobenzene	11.44	1.0	20	0	57.2	69 - 130	9.809	15.4	20	S
1,2,4-Trimethylbenzene	14.44	1.0	20	0	72.2	76 - 124	13.71	5.18	20	S
1,2-Dibromo-3-chloropropane	12.27	1.0	20	0	61.3	62 - 128	11.61	5.49	20	S
1,2-Dibromoethane	13.51	1.0	20	0	67.6	77 - 121	12.59	7.04	20	S
1,2-Dichlorobenzene	13.54	1.0	20	0	67.7	80 - 119	12.63	6.97	20	S
1,2-Dichloroethane	14.34	1.0	20	0	71.7	73 - 128	13.27	7.79	20	S
1,2-Dichloropropane	13.8	1.0	20	0	69.0	78 - 122	12.81	7.45	20	S
1,3,5-Trimethylbenzene	14.69	1.0	20	0	73.5	75 - 124	13.81	6.21	20	S
1,3-Dichlorobenzene	14.19	1.0	20	0	71.0	80 - 119	13.21	7.19	20	S
1,3-Dichloropropane	13.63	1.0	20	0	68.1	80 - 119	12.65	7.41	20	S
1,4-Dichlorobenzene	13.91	1.0	20	0	69.6	79 - 118	12.9	7.52	20	S
2,2-Dichloropropane	13.74	1.0	20	0	68.7	60 - 139	13.38	2.67	20	
2-Butanone	26.06	2.0	40	0	65.1	56 - 143	24.35	6.76	20	
2-Chlorotoluene	15.4	1.0	20	0	77.0	79 - 122	14.27	7.58	20	S
2-Hexanone	25.98	2.0	40	0	64.9	57 - 139	24.39	6.3	20	
4-Chlorotoluene	14.61	1.0	20	0	73.1	78 - 122	13.72	6.28	20	S
4-Isopropyltoluene	14.56	1.0	20	0	72.8	77 - 127	13.53	7.31	20	S
4-Methyl-2-pentanone	26.71	2.0	40	0	66.8	67 - 130	24.98	6.69	20	S
Acetone	20.15	2.0	40	0	50.4	39 - 160	18.95	6.17	20	
Benzene	14.36	1.0	20	0	71.8	79 - 120	13.67	4.98	20	S
Bromobenzene	14.19	1.0	20	0	70.9	80 - 120	13.2	7.21	20	S
Bromochloromethane	13.85	1.0	20	0	69.3	78 - 123	13.12	5.45	20	S
Bromodichloromethane	13.96	1.0	20	0	69.8	79 - 125	13.27	5.06	20	S
Bromoform	13.06	1.0	20	0	65.3	66 - 130	12.33	5.69	20	S

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS19120153-06MSD** Units: **UG/L** Analysis Date: **06-Dec-2019 17:48**
Client ID: **12WW22-191203** Run ID: **VOA6_352004** SeqNo: **5378440** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bromomethane	10.88	1.0	20	0	54.4	53 - 141	11.25	3.33	20	
Carbon disulfide	29.74	2.0	40	0	74.4	64 - 133	28.93	2.78	20	
Carbon tetrachloride	14.02	1.0	20	0	70.1	72 - 136	13.36	4.84	20	S
Chlorobenzene	13.47	1.0	20	0	67.3	82 - 118	12.68	6.02	20	S
Chloroethane	18.62	1.0	20	0	93.1	60 - 138	15.51	18.2	20	
Chloroform	13.61	1.0	20	0	68.0	79 - 124	13	4.53	20	S
Chloromethane	9.761	1.0	20	0	48.8	50 - 139	9.774	0.126	20	S
cis-1,2-Dichloroethene	14.45	1.0	20	0	72.3	78 - 123	14.05	2.82	20	S
cis-1,3-Dichloropropene	13.86	1.0	20	0	69.3	75 - 124	13	6.4	20	S
Dibromochloromethane	13.36	1.0	20	0	66.8	74 - 126	12.68	5.23	20	S
Dibromomethane	13.92	1.0	20	0	69.6	79 - 123	12.93	7.35	20	S
Dichlorodifluoromethane	10.8	1.0	20	0	54.0	32 - 152	10.69	1.05	20	
Ethylbenzene	14	1.0	20	0	70.0	79 - 121	13.12	6.51	20	S
Hexachlorobutadiene	10.18	1.0	20	0	50.9	66 - 134	8.799	14.5	20	S
Isopropylbenzene	14.03	1.0	20	0	70.2	72 - 131	13.31	5.3	20	S
m,p-Xylene	27.79	2.0	40	0	69.5	80 - 121	26.31	5.46	20	S
Methylene chloride	13.5	2.0	20	0	67.5	74 - 124	12.87	4.82	20	S
Naphthalene	11.22	1.0	20	0	56.1	61 - 128	9.296	18.7	20	S
n-Butylbenzene	14.44	1.0	20	0	72.2	75 - 128	13.37	7.63	20	S
n-Propylbenzene	15.15	1.0	20	0	75.7	76 - 126	14.18	6.59	20	S
o-Xylene	13.55	1.0	20	0	67.8	78 - 122	12.83	5.46	20	S
sec-Butylbenzene	14.9	1.0	20	0	74.5	77 - 126	13.95	6.56	20	S
Styrene	13.59	1.0	20	0	67.9	78 - 123	12.58	7.71	20	S
tert-Butylbenzene	14.9	1.0	20	0	74.5	78 - 124	14.02	6.08	20	S
Tetrachloroethene	13.62	1.0	20	0	68.1	74 - 129	13.02	4.51	20	S
Toluene	13.97	1.0	20	0	69.8	80 - 121	13.13	6.15	20	S
trans-1,2-Dichloroethene	14.48	1.0	20	0	72.4	75 - 124	14.03	3.17	20	S
trans-1,3-Dichloropropene	13.58	1.0	20	0	67.9	73 - 127	12.77	6.13	20	S
Trichloroethene	14.24	1.0	20	0	71.2	79 - 123	13.5	5.29	20	S
Trichlorofluoromethane	12.68	1.0	20	0	63.4	65 - 141	12.46	1.71	20	S
Vinyl chloride	11.78	1.0	20	0	58.9	58 - 137	11.28	4.28	20	
Surr: 1,2-Dichloroethane-d4	*50.52*	*1.0*	*50*	*0*	*101*	*81 - 118*	*50.82*	*0.592*	*20*	
Surr: 4-Bromofluorobenzene	*50.29*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.72*	*0.851*	*20*	
Surr: Dibromofluoromethane	*50.02*	*1.0*	*50*	*0*	*100*	*80 - 119*	*50.48*	*0.917*	*20*	

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: HS19120153

QC BATCH REPORT

Batch ID: R352004 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS19120153-06MSD** Units: **UG/L** Analysis Date: **06-Dec-2019 17:48**
Client ID: **12WW22-191203** Run ID: **VOA6_352004** SeqNo: **5378440** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*47.51*	*1.0*	*50*	*0*	*95.0*	*89 - 112*	*47.25*	*0.56*	*20*	

The following samples were analyzed in this batch:

HS19120153-01	HS19120153-02	HS19120153-03	HS19120153-04
HS19120153-05	HS19120153-06	HS19120153-07	

ALS Houston, US Date: 09-Dec-19

Client: Aptim Environmental & Infrastucture, Inc.
Project: Longhorn Army Ammunition Plant LHAAP - 12
WorkOrder: **HS19120153**

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: 09-Dec-19

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	19-028-0	27-Mar-2020
California	2919, 2019-2020	30-Apr-2020
Dept of Defense	ANAB L2231	20-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	624-2019	31-Dec-2019
North Dakota	R-193 2019-2020	30-Apr-2020
Oklahoma	2019-067	31-Aug-2020
Texas	TX104704231-19-23	30-Apr-2020

00972798

ALS Houston, US Date: 09-Dec-19

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS19120153
Date/Time Received: **04-Dec-2019 09:13**
Received by: **PMG**

Checklist completed by: *Jared R. Makan* eSignature — 4-Dec-2019 Date
Reviewed by: *RJ Modashia* eSignature — 5-Dec-2019 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 ☐	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):	1.3°C / 1.3°C UC/C	IR25	
Cooler(s)/Kit(s):	42971		
Date/Time sample(s) sent to storage:	12/04/2019 18:15		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

00972799

APTIM

Page 1 of ____

COC ID: 12LHAAP2019-1912__-ALS

TURNAROUND TIME:

RUSH:

PROJECT/CLIENT INFO		LABORATORY		OTHER INFO	
Facility Name	Longhorn AAP	Lab Name	ALS Laboratories	Email Invoice To	FedInvoices@aptim.com
Project Number	501032	Lab Contact	RJ Modashia		
	LHAAP-12	Email	RJ.Modashia@alsglobal.com	Email Report To	Susan.Huang@aptim.com
Address	1203-B East Grand Avenue	Address	10450 Stancliff Rd., Suite 210	Mail Reports To	Susan Huang
	PMB 202			Address	4005 Port Chicago Highway, Suite 200
City	Marshall State TX	City	Houston State TX	City	Concord State CA
Postal Code	75670 Country USA	Postal Code	77099 Country USA	Postal Code	94520 Country USA
Phone Number	713.243.7264	Phone Number	281.575.2279 or 281.530.5656		
Project Manager	Praveen Srivastav			Shipping Company	

SAMPLE DETAILS / ANALYSIS REQUESTED

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	ANALYSIS	VOC by 8260B (3-40ml VOA Vials/HCL)
12WW10R-191203	LHAAP 12				WG	12/3/19	0830	3		X
12WW21-191203	LHAAP 12				WG	12/3/19	0920	3		X
12WW21-191203-FD	LHAAP 12				WG	12/3/19	0920	3		X
12WW24-191203	LHAAP 12				WG	12/3/19	1010	3		X
12WW20-191203	LHAAP 12				WG	12/3/19	1055	3		X
12WW22-191203	LHAAP 12				WG	12/3/19	1145	3		X
12WW22-191203-MS	LHAAP 12				WG	12/3/19	1145	3		X
12WW22-191203-MSD	LHAAP 12				WG	12/3/19	1145	3		X
TRip Blank	LHAAP 12				WG	12/3/19		2		X

HS19120153

Aptim Environmental & Infrastucture, Inc.

Longhorn Army Ammunition Plant LHAAP - 12

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Scott Blessing / BHATE	12/3/19 1430	[signature]	12/4/19 09:13

UIC.

42971 1.3°

+25 (11-0-0°

00972800

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

CUSTODY SEAL

Date: 12/3/10 Time: 1430
Name: Scott Bullinger
Company: Shape

Seal Broken By:
Date: 12/4/10

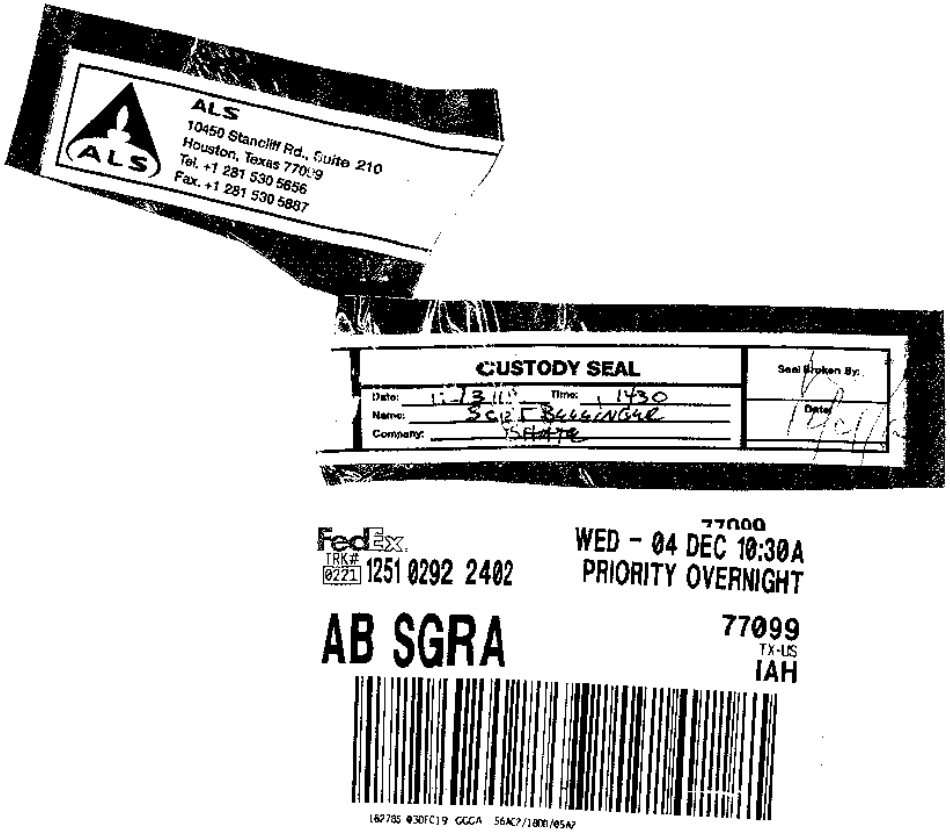
FedEx
TRK# 0221 1251 0292 2402

77099
WED - 04 DEC 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

162785 030FC19 GGCA 56AC2/1800/05A7



Chemical Analytical Data Review/Validation Form

Report Type: { } Preliminary {X} Final

Project Number: 501032 Project Name: LHAAP12 Dec 2019 GW Sampling

Analysis/Method: VOC/SW8260 Laboratory: ALS SDG # HS19120153

Evaluated By: Shuang Date Evaluated: 1/24/2020

Sample Number(s): 12WW10R-191203, 12WW21/FD, 12WW24, 12WW20, 12WW22 (MS/MSD), Trip blank

REVIEW QUESTIONS	YES	NO	COMMENTS
1. Were extraction and analysis holding times met?	X		Sampled on 12/03/2019, analyzed on 12/6/2019
2. Were sample preservation requirements met? (Sample condition, preservation, containers, temperature, headspace etc.)	X		1.3 degree C, preserved with HCL, no headspace in any samples
3. Were QAPP specified LOQs achieved?	X		LOQ>LOD>DL
4. Were measurement results for all QAPP-specific target analytes reported?	X		
5. Was a method blank prepared and analyzed with each batch?	X		
6. Were target analytes reported in the method blank below ½ LOQ for target compounds and below LOQ for common laboratory contaminants such as acetone and MECL2?	X		VOCs ND in the MB
7. Was an equipment blank collected and analyzed at the required frequency stated in the site-specific QAPP?		X	
8. Were target analytes reported in field blank analyses (trip or equipment) below ½ LOQ for target compounds and below LOQ for common laboratory contaminants such as acetone and MECL2?		X	VOCs ND in the trip blank
9. Was a field duplicate analyzed? Were RPDs within QAPP specifications?	X		12WW21: VOCs ND in the pair
10. Surrogate Recoveries – Were all samples spiked prior to purging or preparation?	X		
11. Were surrogate recoveries within QAPP and DoD QSM specifications?	X		Surrogates in all samples within bias control limits
12. Was an LCD/LCSD pair prepared and analyzed with each batch? Was the LCS spiked with full target analytes?	X		
13. Were LCS/LCSD RPDs within recoveries within QAPP and DoD QSM specifications?	X		Full spike and within precision control limits for all VOCs
14. Was a MS/MSD pair prepared with each batch?	X		

REVIEW QUESTIONS	YES	NO	COMMENTS
15. Is the MS/MSD parent sample a project sample? Was the MS/MSD spiked with full target analytes? Were MS/MSD and RPD results with the DoD QSM requirements?		X	12WW22: full spike. Low MS and MSD recoveries were noted for majority of the VOCs, deviation was not significant. UJ/08 VOCs within the goals included 2,2-dichloropropane, MEK, acetone, 2-hexanone, bromomethane, carbon disulfide, freon, chloroethane. No qualification for these VOCs.
16. Were initial calibration standards analyzed at the QAPP and DoD QSM-specific frequency for each instrument?	X		
17. Were these results within the QAPP and DoD QSM specifications?		X	Met IC requirements Hexachlorobutadiene in the ICV was biased high, analyte ND, no qualification needed.
18. Were continuing calibration standards analyzed at the QAPP and DoD QSM specific frequency for each instrument?	X		
19. Were these results within the QAPP and DoD QSM specifications?	X		Met CCV requirements
20. Was the sample re-extracted and re-analyzed due to QC failure or dilution? If multiple runs were reported, list analytes and run (original or reanalysis) should be reported.	X		
21. For metals analysis, was an ICP serial dilution performed and the results within the DoD QSM requirements?		NA	
22. For metals analysis, was an interference check sample analysis performed and the results within the DoD QSM requirements?		NA	
23. For metals analysis, was a post digestion spike analysis performed and the results within the DoD QSM requirements?		NA	
24. During EDD review, select 10% of the data for each method to verify that results in the EDD agreed with the data package.	X		1/24/2020: reviewed EDD. results in the EDD agree with the lab report
25. Were laboratory-generated Quality Control Exception Reports (i.e., QCERs) issued? If yes, summarize contents.		X	
26. Were lab comments included in the report? If yes, summarize contents	X		

Appendix E

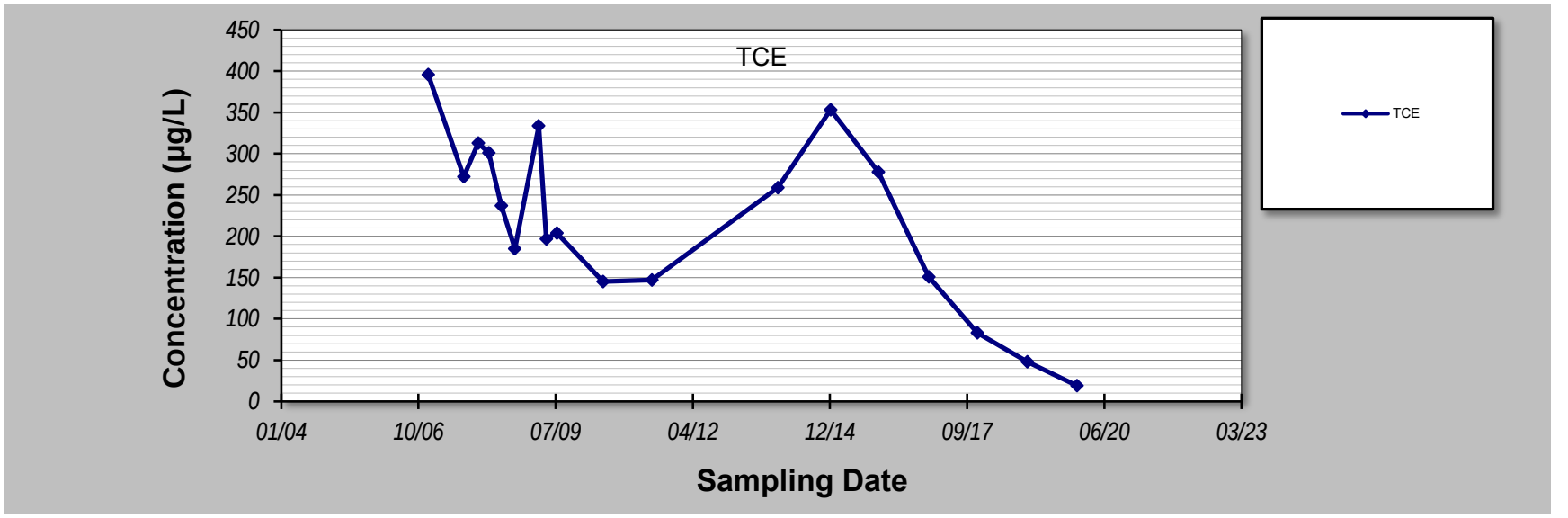
Mann-Kendall Trend Test Results

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	6-Feb-20	Job ID:	501032
Facility Name:	LHAAP-12	Constituent:	12WW24
Conducted By:	Allen Willmore	Concentration Units:	µg/L

Sampling Point ID:	TCE						

Sampling Event	Sampling Date	12WW24 CONCENTRATION (µg/L)						
1	19-Dec-06	396						
2	5-Sep-07	272						
3	19-Dec-07	313						
4	5-Mar-08	301						
5	4-Jun-08	237						
6	11-Sep-08	185						
7	4-Mar-09	334						
8	29-Apr-09	197						
9	14-Jul-09	204						
10	16-Jun-10	145						
11	7-Jun-11	147						
12	11-Dec-13	259						
13	1-Jan-15	353						
14	15-Dec-15	278						
15	16-Dec-16	151						
16	4-Dec-17	83						
17	4-Dec-18	48						
18	3-Dec-19	19						
19								
20								
Coefficient of Variation:		0.49						
Mann-Kendall Statistic (S):		-77						
Confidence Factor:		99.9%						
Concentration Trend:		Decreasing						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

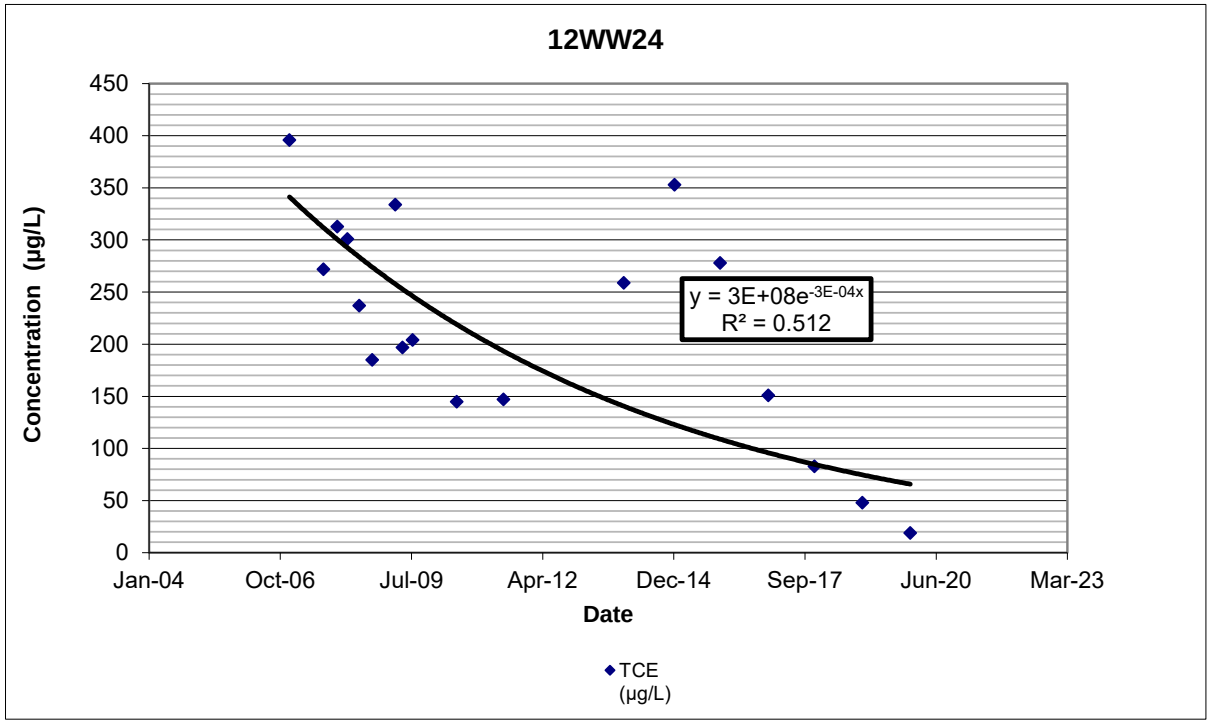
DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

Appendix F

Degradation Rates

Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
12WW24

Date	TCE (µg/L)
19-Dec-06	396
5-Sep-07	272
19-Dec-07	313
5-Mar-08	301
4-Jun-08	237
11-Sep-08	185
4-Mar-09	334
29-Apr-09	197
14-Jul-09	204
16-Jun-10	145
7-Jun-11	147
11-Dec-13	259
1-Jan-15	353
15-Dec-15	278
16-Dec-16	151
4-Dec-17	83
4-Dec-18	48
3-Dec-19	19



Chemical: TCE Well ID	Attenuation Rate Constant (day^{-1})	Attenuation Half-life (days)	Attenuation Half-life (years)	Current Conc. (µg/L)	Target Concentration for TCE (µg/L)	Estimated Cleanup Time (years)
12WW24	0.0003	2310.5	6.3	19	5	12.2

Notes:

The estimated cleanup time was calculated as the time it would take the most recent detected TCE concentration to reach the MCL using the site-specific attenuation rate, and assuming first order degradation kinetics.

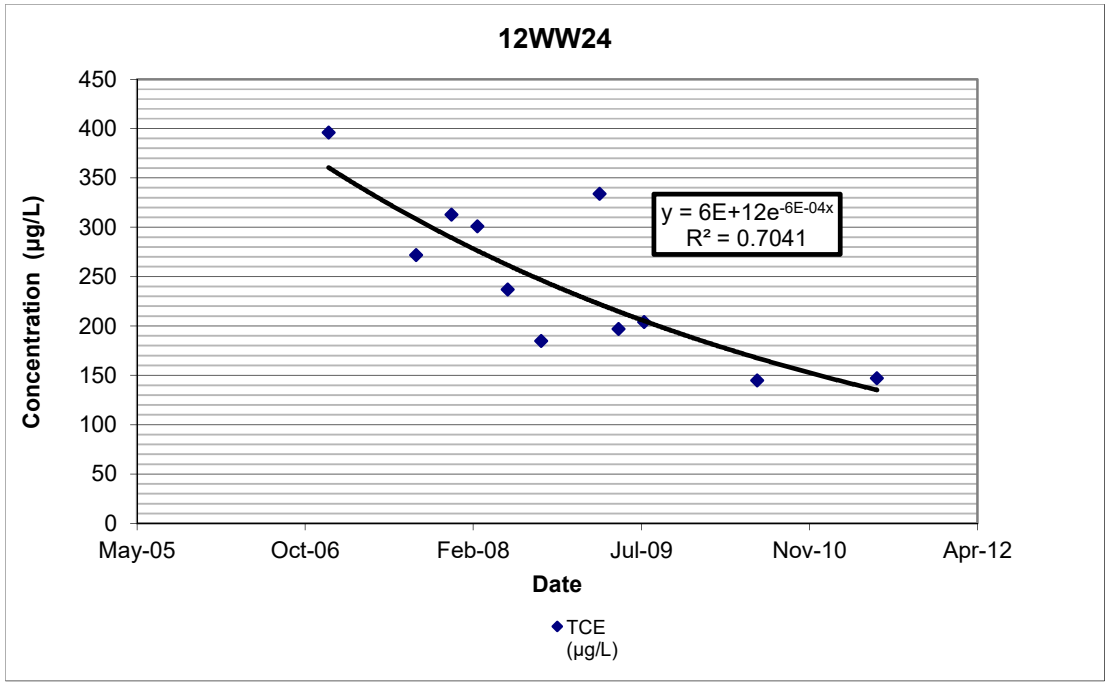
µg/L - micrograms per liter

MCL - maximum contaminant level

TCE - trichloroethene

Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
12WW24

Date	TCE (µg/L)
19-Dec-06	396
5-Sep-07	272
19-Dec-07	313
5-Mar-08	301
4-Jun-08	237
11-Sep-08	185
4-Mar-09	334
29-Apr-09	197
14-Jul-09	204
16-Jun-10	145
7-Jun-11	147
11-Dec-13	259
1-Jan-15	353
15-Dec-15	278
16-Dec-16	151
4-Dec-17	83
4-Dec-18	48
3-Dec-19	19



Chemical: TCE Well ID	Attenuation Rate Constant (day^{-1})	Attenuation Half-life (days)	Attenuation Half-life (years)	Current Conc. (µg/L)	Target Concentration for TCE (µg/L)	Estimated Cleanup Time (years)
12WW24	0.0006	1155.2	3.2	147	5	15.4

Notes:

The estimated cleanup time was calculated as the time it would take the most recent detected TCE concentration to reach the MCL using the site-specific attenuation rate, and assuming first order degradation kinetics.

µg/L - micrograms per liter

MCL - maximum contaminant level

TCE - trichloroethene

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

July 29, 2020

DAIN-ODB-LO

Mr. William Rhotenberry
U.S. Environmental Protection Agency
1201 Elm Street, Suite 500
Dallas, TX 75270-2002

Re: Draft Remedial Action Completion Report, LHAAP-04 Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas, July 2020

Dear Mr. Rhotenberry,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (https://docs.cbifederalservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx). An electronic copy of this letter and download instructions for the electronic file have been sent via email. Review comments are requested by August 29, 2020.

The document was prepared by Bhate Environmental Associates, Inc., (Bhate) team, on behalf of the Army as part of Bhate's Performance Based Remediation contract for the facility. I ask that Kim Nemmers, Bhate's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX (electronic/online)
P. Bruckwicki, Caddo Lake NWR, TX (electronic/online)
R. Smith USACE, Tulsa District, OK (electronic/online)
A. Williams, USACE, Tulsa District, OK (electronic/online)
A. Maly USAEC, San Antonio, TX (electronic/online)
K. Nemmers, Bhate, Lakewood, CO (electronic/online)
P. Srivastav, APTIM, Houston, TX (electronic/online)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

July 29, 2020

DAIN-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality
Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Remedial Action Completion Report, LHAAP-04 Former Pilot Wastewater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas, July 2020

Dear Ms. Palmie,

An electronic copy of the above referenced document has been added to the project portal's "Documents" folder at the following address for your review: (https://docs.cbifederalservices.com/sites/501032/regulators/Shared%20Documents/Forms/AllItems.aspx). An electronic copy of this letter and download instructions for the electronic file have been sent via email. Review comments are requested by August 29, 2020.

The document was prepared by Bhate Environmental Associates, Inc., (Bhate) team, on behalf of the Army as part of Bhate's Performance Based Remediation contract for the facility. I ask that Kim Nemmers, Bhate's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished (letter only):
W. Rhotenberry, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
A. Maly, USAEC, San Antonio, TX
K. Nemmers, Bhate, Lakewood, CO
P. Srivastav, APTIM, Houston, TX

Subject: **Final Monthly Managers' Meeting (MMM), Longhorn Army Ammunition Plant (LHAAP)**
Location of Meeting: **Teleconference**
Date of Meeting: **15 July 2020– 1300 Central Daylight Time (CDT)**

Attendees:
Army BRAC: Rose M. Zeiler (RMZ)
USEPA: Bill Rhotenberry (BR) and Kent Becher-USGS Liaison
AEC: Andrew Maly (AM)
TCEQ: April Palmie (AP)
USACE: Aaron Williams (AW)
Bhate: Kim Nemmers (KN)
APTIM: Praveen Srivastav (PS) and Bill Foss (BF)
USFWS: Paul Bruckwicki (PB)

Defense Environmental Restoration Program (DERP) Performance-Based Remediation (PBR) Update

Groundwater Treatment Plant (GWTP) – KN stated that the GWTP lost power following a storm that damaged the overhead power lines but power was restored, as notified via electronic mail (e-mail). KN stated that the repairs to tanks that are rusting will be completed in late-July or in August 2020. KN stated that the in-line filter, to replace the media capture tank following the fluidized bed reactor, will be completed during this same time frame. KN stated that treated groundwater continues to be discharged to the bayou and that water within the INF Pond was discharged to the bayou earlier this month to allow freeboard when the bayou flow ceases.

July 2020 Groundwater Sampling – KN stated that groundwater sampling was completed at LHAAP-50 and was ongoing at LHAAP-16. BF stated that he had received paperwork from Scott Beesinger for the sampling of the new monitoring well at LHAAP-46.

KN asked everyone to refer to the Document and Issues Tracking Table dated 15 July 2020.

- **Task 1** (Project Management) – KN stated that minutes from the June 2020 MMM had been issued to the Regulators on 1 July 2020. BR stated that he had responded with his approval, and AP indicated that she had also approved of the minutes. KN stated that the Restoration Advisory Board (RAB) meeting will be held later in the day via a conference call. KN stated that the conference line was toll-free and would be open 30 minutes before the call and 30 minutes after the scheduled call. KN stated that the meeting minutes from the January 2020 meeting needed to be approved at the RAB Meeting. AM asked that presenters state what slide they are on before discussing the slides. KN followed that up by asking RMZ to mention that when she does her introduction as well as ask for people to state their name before asking a question.
- **Task 3** (LHAAP-03) – PS said that no documents are in process. Field work (soil excavation) is still on hold awaiting drier weather in late July/early August. RMZ asked if the removal will be completed in August 2020. PS said that the plan is still for the field work to be completed in late July or early August at the same time as LHAAP-17.
- **Task 4** (LHAAP-04) – PS said that the Year 1 Quarter 3 sampling is scheduled for August 2020 and should be validated for presentation at the September 2020 MMM. PS said that the Remedial Action Completion Report (RACR) is in internal review and should be provided to the Regulators in July 2020.

- **Task 5** (LHAAP-12) – PS said that the 2019 Remedial Action Operation (RA-O) Report was submitted to Regulators on 18 June 2020. PS stated that TCEQ approval had been received. BF stated that one comment was received from EPA. BF asked if we can respond to the comment in an email and issue the document as final. RMZ, AP and BR all concurred with this approach.
- **Task 6** (LHAAP-16) – PS said the groundwater sampling Year 1, Quarter 2 sampling was in progress and that the validated data should be available for the September 2020 MMM. LHAAP-16 RACR is internal review similar to the LHAAP-04 schedule. RMZ said that the land use control (LUC) recordation language and boundaries will be sent ahead of the RACR for regulators' review and approval. RMZ said that this recordation is the first one to contain the new language from the dispute. RMZ said that the statutory determination in the Record of Decision (ROD) was reviewed and is different for LHAAP-04 and LHAAP-16 though the intent was the same. RMZ said that TCEQ and EPA need to be reviewers based upon the ROD because it is different than in the past. BF said that the draft language and maps will be sent out by 16 July 2020.
- **Task 7** (LHAAP-17) – PS said that no documents are in process. PS explained that the backfilling of the clean excavations and creating a berm will occur when the site conditions are drier in late July/early August.
- **Task 9** (LHAAP-37) – Semi-Annual Sampling Year 4, Semiannual Sampling Event 1 is schedule for October 2020. The validated data will be provided at the MMM held in December 2020. PS stated that the Year 3 RA-O Report is in progress.
- **Task 10** (LHAAP-46) – PS stated that Year 5 Annual RA-O Report was submitted to Regulators on 10 June 2020. PS stated that EPA and TCEQ comments are being addressed in coordination with the Army. PS stated that the Year 6 Annual RA-O Report is in progress.
- **Task 11** (LHAAP-50) – PS stated the Year 1 Quarter 1 sampling was completed earlier this month. PS stated that the RACR is in progress for submittal in August 2020. PS that that the Year 6 RA-O Report is also in progress. BF stated that the original boundary is not changing but the LUC boundary and language would be provided ahead of the request for RACR review similar to that approach discussed for LHAAP-16 and LHAAP-04. (Note: After further consideration, no LUC changes are being made to LHAAP-50 for the contingency remedy, so LUC notice language will not be included in the RACR.)
- **Task 12** (LHAAP-58) – KN stated that the final sampling event as part of the Year 6 RA-O Report was completed in June and was in the process of being validated. KN stated that the June 2020 validated data would be provided for the August 2020 MMM.
- **Task 13** (LHAAP-67) – PS stated that the Year 6 RA-O Report is in internal review.
- **Task 14** (LHAAP-001-R and –003-R) – KN did not discuss Task 14.
- **Task 16** (GWTP) **–** KN stated that the 1st Quarter 2020 report was submitted to Regulators on 9 June 2020 and only contained data from the GWTP. KN stated that TCEQ comments had been received 30 June 2020. BR confirmed that the EPA had not yet provided comments.
- **Task 17** (LHAAP-18/24) – KN stated that the validated data from the LHAAP-18/24 sampling that was just completed in June 2020 would be available for the August 2020 MMM. After receipt of the validated data, the 2nd Quarter 2020 report would be prepared and the 1st Quarter 2020 comments would be incorporated.
- **Task 18** (Surface Water) – KN stated that the next quarterly surface water sampling event would be completed soon since the bayou is still flowing.

- **Task 19** (LUC Management Plan) – KN stated that the 2020 Comprehensive LUC Management Plan is listed as delayed to allow for recordation in Harrison County of the new LUC boundaries at LHAAP-04 and LHAAP-16.
- **Administrative Record (AR) –** PS stated that the AR for October through December 2019 documents are being compiled for the AR. PS said that the list for the 1st quarter of 2020 is being prepared.

Update on other DERP Sites:

- **LHAAP 18/24 and LHAAP-29** – AW stated that the RODs for the two sites needed to be placed into the AR.
- **LHAAP-47** – AW stated that the report and work plans will be put into the AR and that Addendum No. 2 Post Screening Investigation (PSI) is getting wrapped up. AW stated that monitoring wells are being developed with the two remaining wells to be developed and samples to be collected later in the week. The results will be incorporated into the previously submitted addendum report. AW stated that the RAB slides include the latest data that has resulted in a larger plume area at LHAAP-47. RMZ said that the RAB slides show the next deliverables for each of these sites. RMZ said that October 26, 2020 is the date for the draft PSI Report addendum No. 2. The Draft LHAAP-29 PDI Work Plan is due in November 2020 and the Draft LHAAP-18/24 PDI Work Plan is due in January 2021. RMZ said that documents are hopefully spread-out enough. Late October 2020 is when the draft FS Addendum for LHAAP-47 is anticipated to be provided to the Army and then to the regulators in December 2020. AP asked if there was a Pre-Design Report. AW said that there will be a pre-design investigation for LHAAP-18/24 and -29 following award of that contract. AW explained that there will be a work plan for each of the sites. BR clarified whether these dates were in the RAB sides. RMZ stated that the dates for LHAAP-29 and -18/24 are in the slides, but were not included for LHAAP-47 due to ongoing work in the field.
- **Well Plugging and Abandonment –** PS stated that the well abandonment is planned for the same time as the field work at LHAAP-03 and LHAAP-17 in late July or early August 2020.

Contract updates:

- **LHAAP-18/24 and 29 -** AW stated that LHAAP-18/24 and -29 is close to award and that the documentation is with Office of Counsel
- **LHAAP-17 -** AW said the request for proposal (RFP) package went out to bidders on 8 July 2020, and that proposals are due 7 August 2020. AW stated that the site walk is next Wednesday, 22 July 2020. AW stated that the selection is anticipated to be made this fiscal year. AW stated that there would be a separate visit at a later time to the landfill.

Perchlorate Update - BR said that Caroline Anderson, Region 6 Federal Facilities Representative, may be going to call in. RMZ said that the EPA has decided to not pursue a MCL for perchlorate at this time. RMZ said that this gets reviewed every 5 years. RMZ said that EPA had proposed a national primary drinking water regulation (NPDWR) for perchlorate of 56 µg/L, based upon EPA's analysis for meaningful human health risk reduction. RMZ thought that the evaluation was due to a recent lawsuit in New York that forced the EPA to evaluate perchlorate. RMZ stated that the bottom line is that an MCL is not being pursued due to the lack of a meaningful opportunity to reduce risk to human health from perchlorate in public drinking water systems.

COVID-19 - RMZ said the COVID requirements in Texas have become more stringent, limiting gatherings to 10 or less people. AP said that there have been no changes to TCEQ operations. BR said that EPA has not had any changes and that the EPA is following the CDC guidelines but has

not even met Phase I. RMZ said that BRAC is going back at 20-percent (%) excluding sensitive personnel. AP said that they have a cap of 25% of personnel going into the office within a particular day.

USFWS Update– PB said that USFWS is starting back next week on a staggered schedule.

Schedule Next Managers' Meeting

The next MMM will be held on Wednesday 19 August 2020 at 10:00 am CDT via conference call.

Meeting concluded at approximately 1:45 pm CDT.

ACRONYM LIST

%	percent
µg/L	Micrograms per liter
AM	Andrew Maly
AP	April Palmie
APTIM	APTIM Federal Services, LLC
AR	Administrative Record
AW	Aaron Williams
BF	Bill Foss
Bhate	Bhate Environmental Associates, Inc.
BR	Bill Rhotenberry
BRAC	Base Realignment and Closure
CDT	Central Daylight Time
DERP	Defense Environmental Restoration Program
e-mail	Electronic Mail
GWTP	Groundwater Treatment Plant
KN	Kim Nemmers
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MCL	Maximum contaminant level
MMM	Monthly Managers' Meeting
NPDWR	National Primary Drinking Water Regulation
PB	Paul Bruckwicki
PBR	Performance-Based Remediation
PSI	Post-Screening Investigation
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RA-O	Remedial Action – Operation
RAWP	Remedial Action Work Plan
RD	Remedial Design
RFP	Request for Proposal
RMZ	Rose M. Zeiler
ROD	Record of Decision
TCEQ	Texas Commission on Environmental Quality
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

LHAAP Data Validated
July 2020 MMM Validated Data

GWTP Effluent	*Weekly Perchlorate Sampling – May 2020* Perchlorate (6850)
GWTP Effluent	*Weekly, Bi-Weekly, and Monthly Sampling – May 2020* Ammonia (350.3) Ortho-Phosphate (365.3) Total Organic Carbon (SM5310C) VOC (8260C) Metals (6020A) Hexavalent Chromium (7196A) 1,4-Dioxane (8270D-SIM) Anions (9056)
GWTP Influent	*Monthly Sampling – May 2020* Metals (6020A) Perchlorate (6850) Hexavalent Chromium (7196A)
GWTP Quarterly	*Influent and Effluent – May 2020* Oil and Grease (1664A) Perchlorate (6850) Metals (6020A) 1,4-Dioxane (8270D-SIM) Chemical Oxygen Demand (410.4) VOC (8260C) Anions (9056)

GWTP Weekly/Effluent Perchlorate Sampling - May 2020

Location ID: Sample Date:	Units	Daily Maximum Conc	INF pond (PCL)	LH18/24-SP650_050520-BIX 5/5/20	LH18/24-SP650_050520_BIX 5/5/20	LH18/24-SP650_051220-BIX 5/12/20	LH18/24-SP650_051920-BIX 5/19/20	LH18/24-SP650_051920_BIX 5/19/20	LH18/24-SP650_052820-BIX 5/28/20
Location Description				**Collected from a spigot on the discharge of effluent TK-650.**					
				Weekly	Monthly EFF	Weekly	Weekly	Quarterly EFF	Weekly
Perchlorate (6850)									
Perchlorate	µg/L	589	17	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U

µg/L - micrograms per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

BIX - before ion exchange

GWTP Weekly Sampling - May 2020

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650_050520 5/5/20	LH18/24-SP650_051220 5/12/20	LH18/24-SP650_051920 5/19/20	LH18/24-SP650_052820 5/28/20
Location Description			**GWTP–Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.**			
Ammonia as N (350.3)						
Ammonia as N	mg/L	NV	**3.7**	**11.0**	**11**	**11**
Ortho-Phosphate (365.3)						
Ortho-Phosphate	mg/L	NV	**0.804 J**	**1.89**	**1.89**	**0.96**
Organic Carbon (SM5310C)						
Total Organic Carbon (TOC)	mg/L	NV	**2.34**	**2.63**	**2.19**	**2.96**

mg/L - milligrams per liter

NV - No Value

GWTP Bi-Weekly Sampling - May 2020

Location ID: / Sample Date:	Units	(Bayou) Daily Maximum Conc	(INF pond) MCL	LH 18/24-SP650_051220 5/12/20	LH18/24-SP650_052820 5/28/20
Location Description				**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Biweekly.**	
Volatile Organic Compounds (8260C)					
1,1,1-Trichloroethane	µg/L	7,230	200	< 0.50 U	< 0.50 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	14,032	NV	< 0.50 U	< 0.50 U
1,1-Dichloroethene	µg/L	253	7	< 0.50 U	< 0.50 U
1,2-Dichloroethane	µg/L	181	5	**0.97 J**	**0.82 J**
1,2-Dichloropropane	µg/L	5	5	< 1.0 U	< 1.0 U
Acetone	µg/L	2,395	NV	< 1.0 U	< 1.0 U
Benzene	µg/L	181	5	< 0.50 U	< 0.50 U
Carbon tetrachloride	µg/L	181	5	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	47,180	100	< 1.0 U	< 1.0 U
Chloroform	µg/L	3,615	NV	< 0.50 U	< 0.50 U
cis-1,2-Dichloroethene	µg/L	NV	70	**20**	**15**
Ethylbenzene	µg/L	57,025	700	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 U	< 1.0 U
o-Xylene	µg/L	83.6	NV	< 1.0 U	< 1.0 U
Styrene	µg/L	5,987	100	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	180.7	5	< 1.0 U	< 1.0 U
Toluene	µg/L	4,189	10	< 0.50 U	< 0.50 U
Trichloroethene	µg/L	181	5	**4.0**	**2.7**
Vinyl chloride	µg/L	72	2	< 0.50 U	< 0.50 U
Anions (9056)					
Chloride	mg/L	NV	NV	**400**	**313**
Sulfate	mg/L	NV	NV	**31.6**	**31.5**

µg/L - micrograms per liter

mg/L - milligrams per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

NV - No Value

J -estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

GWTP Monthly Effluent Sampling - May 2020

Location ID: Sample Date:	Units	Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_050520 5/5/20
Location Description				**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled monthly**
Volatile Organic Compounds (8260C)				
1,1,1-Trichloroethane	µg/L	7,230	200	< 0.50 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 1.0 U
1,1-Dichloroethane	µg/L	14,032	NV	< 0.50 U
1,1-Dichloroethene	µg/L	253	7	< 0.50 U
1,2-Dichloroethane	µg/L	181	5	**0.94 J**
1,2-Dichloropropane	µg/L	5	5	< 1.0 U
Acetone	µg/L	2,395	NV	< 1.0 U
Benzene	µg/L	181	5	< 0.50 U
Carbon tetrachloride	µg/L	181	5	< 1.0 U
Chlorobenzene	µg/L	47,180	100	< 1.0 U
Chloroform	µg/L	3,615	NV	< 0.50 U
cis-1,2-dichloroethene	µg/L	NV	70	**21**
Ethylbenzene	µg/L	57,025	700	< 1.0 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 U
o-Xylene	µg/L	83.6	NV	< 1.0 U
Styrene	µg/L	5,987	100	< 1.0 U
Tetrachloroethene	µg/L	180.7	5	< 1.0 U
Toluene	µg/L	4,189	10	< 0.50 U
Trichloroethene	µg/L	181	5	**3.8**
Vinyl chloride	µg/L	72	2	< 0.50 U
Metals (6020A)				
Barium	mg/L	2	2	**0.0644**
Lead	mg/L	0.0046	0.015	< 0.00100 U
Selenium	mg/L	0.012	0.05	< 0.00250 U
Silver	mg/L	0.003	0.1	< 0.000500 U
Hexavalent Chromium (7196A)				
Hexavalent Chromium	mg/L	0.1244	NV	< 0.0100 U
Semi-Volatile Organic Compounds (8270D SIM)				
1,4-Dioxane	µg/L	134.2	NV	**34**

µg/L - micrograms per liter

mg/L - milligrams per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

NV - no value

J -estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

GWTP Monthly Influent Sampling - May 2020

Location ID: / Sample Date:	Units	LH18/24-SP140_050520 5/5/20
Location Description		**GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.**
Metals (6020A)		
Selenium	mg/L	< 0.00250 U
Silver	mg/L	< 0.000500 U
Hexavalent Chromium (7196A)		
Hexavalent Chromium	mg/L	**0.00600 J**
Perchlorate (6850)		
Perchlorate	µg/L	**6,740**

mg/L - milligrams per liter

µg/L - micrograms per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

J -estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

GWTP Quarterly Effluent Sampling - May 2020

Location ID: / Sample Date:	Units	Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_051920 5/19/20
Location Description				**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Quarterly.**
Oil and Grease (1664A)				
Oil & Grease	mg/L	15	NV	**0.612 J**
Chemical Oxygen Demand (410.4)				
Chemical Oxygen Demand	mg/L	200	NV	**17**
Volatile Organic Compounds (8260C)				
1,1,1-Trichloroethane	µg/L	7,230	200	< 0.5 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 1.0 U
1,1-Dichloroethane	µg/L	14,032	NV	< 0.5 U
1,1-Dichloroethene	µg/L	253	7	< 0.5 U
1,2-Dichloroethane	µg/L	181	5	**0.91 J**
1,2-Dichloropropane	µg/L	5	5	< 1.0 U
Acetone	µg/L	2,395	NV	< 1.0 U
Benzene	µg/L	181	5	< 0.5 U
Carbon tetrachloride	µg/L	181	5	< 1.0 U
Chlorobenzene	µg/L	47,180	100	< 1.0 U
Chloroform	µg/L	3,615	NV	< 0.5 U
cis-1,2-dichloroethene	mg/L	NV	70	**20**
Ethylbenzene	µg/L	57,025	700	< 1.0 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 U
o-Xylene	µg/L	83.6	NV	< 1.0 U
Styrene	µg/L	5,987	100	< 1.0 U
Tetrachloroethene	µg/L	180.7	5	< 1.0 U
Toluene	µg/L	4,189	10	< 0.5 U
Trichloroethene	µg/L	181	5	**4.0**
Vinyl chloride	µg/L	72	2	< 0.5 U
Metals (6020A)				
Aluminum	mg/L	1.644	NV	**0.0440**
Antimony	mg/L	NV	0.006	**0.000560 J**
Arsenic	mg/L	0.722	0.01	**0.000722 J**
Barium	mg/L	2	2	**0.0980**
Beryllium	mg/L	NV	0.004	< 0.000500 U
Cadmium	mg/L	0.0034	0.005	< 0.000500 U
Calcium	mg/L	NV	NV	**8.42**
Chromium	mg/L	0.752	0.1	**0.00262 J**
Cobalt	mg/L	11.495	NV	**0.00148 J**
Iron	mg/L	2.395	NV	**0.248**
Lead	mg/L	0.0046	0.015	< 0.00100 U
Magnesium	mg/L	NV	NV	**11.9**
Manganese	mg/L	15.494	NV	**0.0987**

Nickel	mg/L	0.184	NV	**0.00369 J**
Potassium	mg/L	NV	NV	**1.48**
Selenium	mg/L	0.012	0.05	< 0.00250 U
Silver	mg/L	0.003	NV	< 0.000500 U
Sodium	mg/L	NV	NV	**320**
Thallium	mg/L	NV	NV	< 0.000500 U
Vanadium	mg/L	3.592	NV	< 0.00100 U
Zinc	mg/L	0.31	NV	**0.0341**
Mercury	mg/L	NV	0.002	**0.0000410 J**
Anions (9056)				
Chloride	mg/L	NV	NV	**326**
Sulfate	mg/L	NV	NV	**32.5**
Semi-Volatile Organic Compounds (8270D SIM)				
1,4-Dioxane	µg/L	134.2	NV	**33.0**

µg/L - micrograms per liter

mg/L - milligrams per liter

J - estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

NV - No Value

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

GWTP Quarterly Influent Sampling - May 2020

Location ID: / Sample Date:	Units	LH18/24-SP140_051920 5/19/20
Location Description		**GWTP – Collected from a spigot on the influent to TK-140. Sampled Quarterly.**
Oil and Grease (1664A)		
Oil & Grease	mg/L	< 2.00 U
Chemical Oxygen Demand (410.4)		
Chemical Oxygen Demand	mg/L	**19**
Perchlorate (6850)		
Perchlorate	µg/L	**9,250**
Volatile Organic Compounds (8260C)		
1,1,1,2-Tetrachloroethane	µg/L	< 1.0 U
1,1,1-Trichloroethane	µg/L	**2.3**
1,1,2,2-Tetrachloroethane	µg/L	< 1.0 U
1,1,2-Trichloroethane	µg/L	**2.1**
1,1-Dichloroethane	µg/L	**9.6**
1,1-Dichloroethene	µg/L	< 0.5 U
1,1-Dichloropropene	µg/L	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	< 1.0 UJ
1,2,3-Trichloropropane	µg/L	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	< 0.5 U
1,2-Dibromoethane	µg/L	< 0.5 U
1,2-Dichlorobenzene	µg/L	< 1.0 U
1,2-Dichloroethane	µg/L	**50**
1,2-Dichloropropane	µg/L	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	< 1.0 U
1,3-Dichlorobenzene	µg/L	< 1.0 U
1,3-Dichloropropane	µg/L	< 1.0 U
1,4-Dichlorobenzene	µg/L	< 1.0 U
2,2-Dichloropropane	µg/L	< 0.5 U
2-Butanone	µg/L	< 1.0 U
2-Chlorotoluene	µg/L	< 1.0 U
2-Hexanone	µg/L	< 2.0 U
4-Chlorotoluene	µg/L	< 1.0 U
4-Isopropyltoluene	µg/L	< 1.0 U
4-Methyl-2-pentanone	µg/L	< 2.0 U
Acetone	µg/L	< 1.0 U
Benzene	µg/L	**2.5**
Bromobenzene	µg/L	< 1.0 U
Bromochloromethane	µg/L	**17 J**
Bromodichloromethane	µg/L	< 0.5 U

Bromoform	µg/L	< 1.0 U
Bromomethane	µg/L	< 1.0 U
Carbon disulfide	µg/L	< 1.0 U
Carbon tetrachloride	µg/L	**7.3**
Chlorobenzene	µg/L	< 1.0 U
Chloroethane	µg/L	< 1.0 U
Chloroform	µg/L	**13**
Chloromethane	µg/L	< 0.5 U
cis-1,2-Dichloroethene	µg/L	**3,000**
cis-1,3-Dichloropropene	µg/L	< 0.5 U
Dibromochloromethane	µg/L	< 1.0 U
Dibromomethane	µg/L	< 0.5 U
Dichlorodifluoromethane	µg/L	< 1.0 U
Ethylbenzene	µg/L	**1.5**
Hexachlorobutadiene	µg/L	< 1.0 U
Isopropylbenzene	µg/L	< 1.0 U
m,p-Xylene	µg/L	**1.0 J**
Methylene chloride	µg/L	**4,300**
Naphthalene	µg/L	< 1.0 U
n-Butylbenzene	µg/L	< 1.0 U
n-Propylbenzene	µg/L	< 1.0 U
o-Xylene	µg/L	**0.76 J**
sec-Butylbenzene	µg/L	< 1.0 U
Styrene	µg/L	**1.7**
tert-Butylbenzene	µg/L	< 1.0 U
Tetrachloroethene	µg/L	**77 J**
Toluene	µg/L	**2.3**
trans-1,2-Dichloroethene	µg/L	**11**
trans-1,3-Dichloropropene	µg/L	< 0.5 U
Trichloroethene	µg/L	**5,900**
Trichlorofluoromethane	µg/L	< 1.0 U
Vinyl chloride	µg/L	**99**
Metals (6020A)		
Aluminum	mg/L	**0.187**
Antimony	mg/L	**0.00116 J**
Arsenic	mg/L	**0.00118 J**
Barium	mg/L	**0.417**
Beryllium	mg/L	< 0.000500 U
Cadmium	mg/L	< 0.000500 U
Calcium	mg/L	**24.2**
Chromium	mg/L	**0.00118 J**
Cobalt	mg/L	**0.00597**
Iron	mg/L	**0.896**
Lead	mg/L	< 0.00100 U
Magnesium	mg/L	**18.5**
Manganese	mg/L	**0.376**

Nickel	mg/L	**0.00839**
Potassium	mg/L	**1.05**
Selenium	mg/L	< 0.00250 U
Silver	mg/L	< 0.000500 U
Sodium	mg/L	**139**
Thallium	mg/L	< 0.000500 U
Vanadium	mg/L	< 0.00100 U
Zinc	mg/L	**0.0227**
Mercury	mg/L	**0.0000310 J**
Anions (9056)		
Chloride	mg/L	**239**
Sulfate	mg/L	**31.6**
Semi-Volatile Organic Compounds (8270D SIM)		
1,4-Dioxane	µg/L	**37**

µg/L - micrograms per liter

mg/L - milligrams per liter

J -estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

UJ - estimated non-detect due to quality control discrepancies

QUARTERLY EVALUATION REPORT
2ND QUARTER (APRIL-JUNE) 2020
GROUNDWATER TREATMENT PLANT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

August 2020

Prepared For:

U.S. Army Corps of Engineers
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ACRONYMS AND ABBREVIATIONS

A/C	Air Conditioning
AMCV(s)	Air Monitoring Comparison Value(s)
amsl	Above mean sea level
bgs	Below ground surface
Bhate	Bhate Environmental Associates, Inc.
COC(s)	Chemical(s) of concern
COD	Chemical oxygen demand
DCE	Dichloroethene
ESD	Explanation of Significant Difference
ESL(s)	Effects Screening Level(s)
FBR	Fluidized bed reactor
ft	Feet or foot
gpd	Gallons per day
gph	Gallons per hour
gpm	Gallons per minute
GWTP	Groundwater Treatment Plant
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCl	Hydrochloric acid
HDPE	High density polyethylene
ICT(s)	Interception-collection trench(es)
IRA	Interim Remedial Action
J	Estimated concentration
lbs/hr	Pounds per hour
LHAAP	Longhorn Army Ammunition Plant
MCL(s)	Maximum Contaminant Level(s)
µg/L	Micrograms per liter
MC	Methylene chloride
$Mg(OH)_2$	Magnesium hydroxide
MSC(s)	Medium Specific Concentration(s)
mV	Millivolts
NA	Not applicable

NaOH	Sodium hydroxide
No.	Number
ORP	Oxidation-reduction potential
PCE	Tetrachloroethene
PCL(s)	Protective Concentration Level(s)
PID	Photoionization detector
ppmv	Parts per million by volume
psi	Pounds per square inch
ROD	Record of Decision
SWEPCO	Southwestern Electric Power Company
TAC	Texas Administrative Code
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
tpy	Tons per year
UEP	Unlined Evaporation Pond
USEPA	United States Environmental Protection Agency
VC	Vinyl chloride
VOC(s)	Volatile Organic Compound(s)

EXECUTIVE SUMMARY

The operation of the Groundwater Treatment Plant (GWTP) is part of the Interim Remedial Action (IRA) at Burning Ground Number (No.) 3, also referred to as Longhorn Army Ammunition Plant (LHAAP)-18/24. A historical pilot test for nearby landfill LHAAP-16 resulted in the installation of eight extraction wells which also contributed groundwater to the GWTP but ceased after implementation of the final remedy in September 2019. Groundwater extraction, treatment, and monitoring activities consist of:

- Continuous extraction of groundwater from multiple interception-collection trenches (ICTs) and extraction wells at LHAAP-18/24;
- Treatment of extracted groundwater for heavy metals, chlorinated compounds, and perchlorate using precipitation, air stripping, and biological methods, respectively;
- Evaluation of the hydraulic effectiveness of the extraction system by groundwater monitoring;
- Monitoring of treated groundwater to ensure compliance with the discharge limits; and
- Discharge of treated water to Harrison Bayou, or to a holding pond (INF Pond), or the treated water may be released as irrigation water on LHAAP-18/24.

The location of the extraction wells and ICTs are shown on **Figure A-1** in **Appendix A**. The process flow diagram of the GWTP is shown on **Figure A-2** in **Appendix A**.

Figure ES-1 depicts the monthly total volume of groundwater that was extracted from the ICTs and extraction wells at LHAAP-18/24 and LHAAP-16 between January 2014 and June 2020.

The GWTP was not operational during June, July, and August 2012. This was related to meltdown of the scrubber system, associated with the catalytic oxidizer, due to system overheating. Overheating occurred when the blower became inoperable after the bearing on the scrubber blower unit was shattered and damaged the blower. This occurred around 1:00 PM on 21 May 2012.

After developing an interim air monitoring plan and obtaining concurrence from the Texas Commission on Environmental Quality (TCEQ) and the United States Environmental Protection Agency (USEPA) to operate the GWTP without use of air abatement equipment, a pilot run of the GWTP was conducted on 6 September 2012. In that first pilot run, 85,170 gallons of water that had been stored in the influent equalization tank (TK-140) were treated. The treated water was re-circulated through the fluidized bed reactor (FBR) to revive the FBR after 3 months of dormancy. Treated groundwater and air samples were collected and analyzed respectively for perchlorate, metals, and Volatile Organic Compounds (VOCs); and VOCs only. On 19 September 2012, a second pilot run was performed at the GWTP and 107,264 gallons of water were treated. Based on the successful re-start of the GWTP, continuous groundwater extraction began again on 24 September 2012. While groundwater extraction occurs on a continuous basis, operation of the GWTP occurs intermittently due to the low volume of water available for treatment with respect to the design capacity of the GWTP. During the 3rd quarter of 2012, groundwater extraction occurred only from LHAAP-18/24. Groundwater extraction from LHAAP-16 was not performed due to equipment failure. However, extraction from LHAAP-16 began in October 2012

and the extraction volumes increased steadily throughout the 4th quarter of 2012, as pumping equipment was gradually repaired/replaced. The GWTP operated under normal conditions until September 2015.

On 14 September 2015, at 11:15 AM, the blower on the air stripper (BL-340) malfunctioned during routine operation. The wiring on the blower was repaired and the blower operated for less than 2 hours on 17 September 2015, when the blower malfunctioned again. It was determined that the blower needed to be replaced, and groundwater extraction and operation of the GWTP ceased beginning 18 September 2015, as the influent equalization tank (TK-140) became full. Beginning on 2 October 2015, it was determined that the GWTP could operate without the blower at a reduced extraction rate. The operation of the GWTP allowed extraction of groundwater from ICTs 12E, 13A, 13B, and 13C (13C was changed to ICT 13E on 12 October 2015), which were considered critical ICTs to prevent migration of contaminants to Harrison Bayou. Groundwater extraction was switched frequently between ICTs 12E, 13A, 13B, and 13E to ICTs 14B, 14C, and 14D beginning on 14 December 2015.

On 12 December 2016, flange bolts at TK-380 failed and allowed hydrochloric acid (HCl) to drain into the sump. The containment area was washed down and the sump contents were transferred into the equalization tank (TK-140). Because of the acid release, extraction of groundwater from the ICTs was halted, and the GWTP was put into recycle mode (effluent sent back as influent) until the acid was neutralized and perchlorate, metals, and VOCs were below discharge criteria on 17 March 2017.

On 12 August 2017, severe storms caused a power outage at LHAAP-18/24. When electrical service was restored, the main transformer failed due to a manufacturing defect. A portable emergency generator was brought on-site on 21 August 2017, to allow the FBR to operate in full recycle mode. After a replacement transformer was installed on 12 September 2017, extraction began from ICT-13B, 13C, 13D, 13E, 13F, 7, and EW01 and the FBR was put into normal operation. Beginning on 21 September 2017, groundwater was extracted from all of the ICTs.

On 27 December 2018, severe storms caused a power outage in Karnack, Texas including LHAAP. When electrical service was restored, the main transformer failed due to a manufacturing defect. A portable emergency generator was brought on-site on 28 December 2018, to allow the FBR to operate in full recycle mode. After a temporary generator was connected to the well field on 11 February 2019, extraction began from LHAAP-18/24, and the GWTP was put into normal operation.

From 11 to 17 June 2019, a double walled pipe in the burning grounds (ICT-14C and ICT-14D) was found to be leaking at a joint and repaired. In addition, the line to 18WW17 was cut off due to leaks identified following repair of the other section of pipe. The ground was too wet to dig and replace the other double-walled pipe at that time. From 28 October to 31 October 2019, a new double walled pipe to 18WW17 was installed.

Groundwater is no longer extracted from LHAAP-16 because injections were completed as part of the final remedial action, which commenced in September 2019. The only groundwater treated and discussed within this report is from LHAAP-18/24.

On 11 January 2020, a possible tornado and straight line winds came through the area and broke the power lines. The breaker was shut off at the transformer until power lines could be repaired on 14 and 15 January 2020, by Ark-La-Tex. On 18 January 2020, power was lost to the GWTP and it was discovered that there was a blown fuse on the power lines. Ark-La-Tex Electric was called to the site to replace the fuse and power was restored to the GWTP the same day.

On 29 March 2020, there was a power glitch that caused the air compressors to shut down. The air compressors and FBR were restarted on the same day.

On 13 April 2020, two trees fell across a power line and caused a loss of power to the plant. Ark–La-Tex was onsite to remove the trees and power was restored on 14 April 2020 at 9:45 AM.

On 2 May 2020, a tree fell across Southwestern Electric Power Company's (SWEPCO's) line inside the plant that feeds the GWTP. SWEPCO came out and removed the tree from the line. Power was restored the same day.

As shown on **Figure ES-1**, the total extracted groundwater volume from LHAAP-18/24 during the 2nd quarter of 2020 was 1,406,094 gallons. The extracted groundwater volume was measured on a monthly basis as the sum of the difference between the flow meter totalizer reading at each ICT between the beginning and end of each month. Extraction quantities in LHAAP-18/24 were 432,293 gallons in April 2020; 482,617 gallons in May 2020; and 491,184 gallons in June 2020.

The typical discharge flowrate from the GWTP was calculated as 20 gallons per minute (gpm) during the 2nd quarter of 2020. Approximately 1,467,448 gallons of groundwater was treated and discharged from the GWTP to the Harrison Bayou and no water was discharged from the INF Pond to the Harrison Bayou.

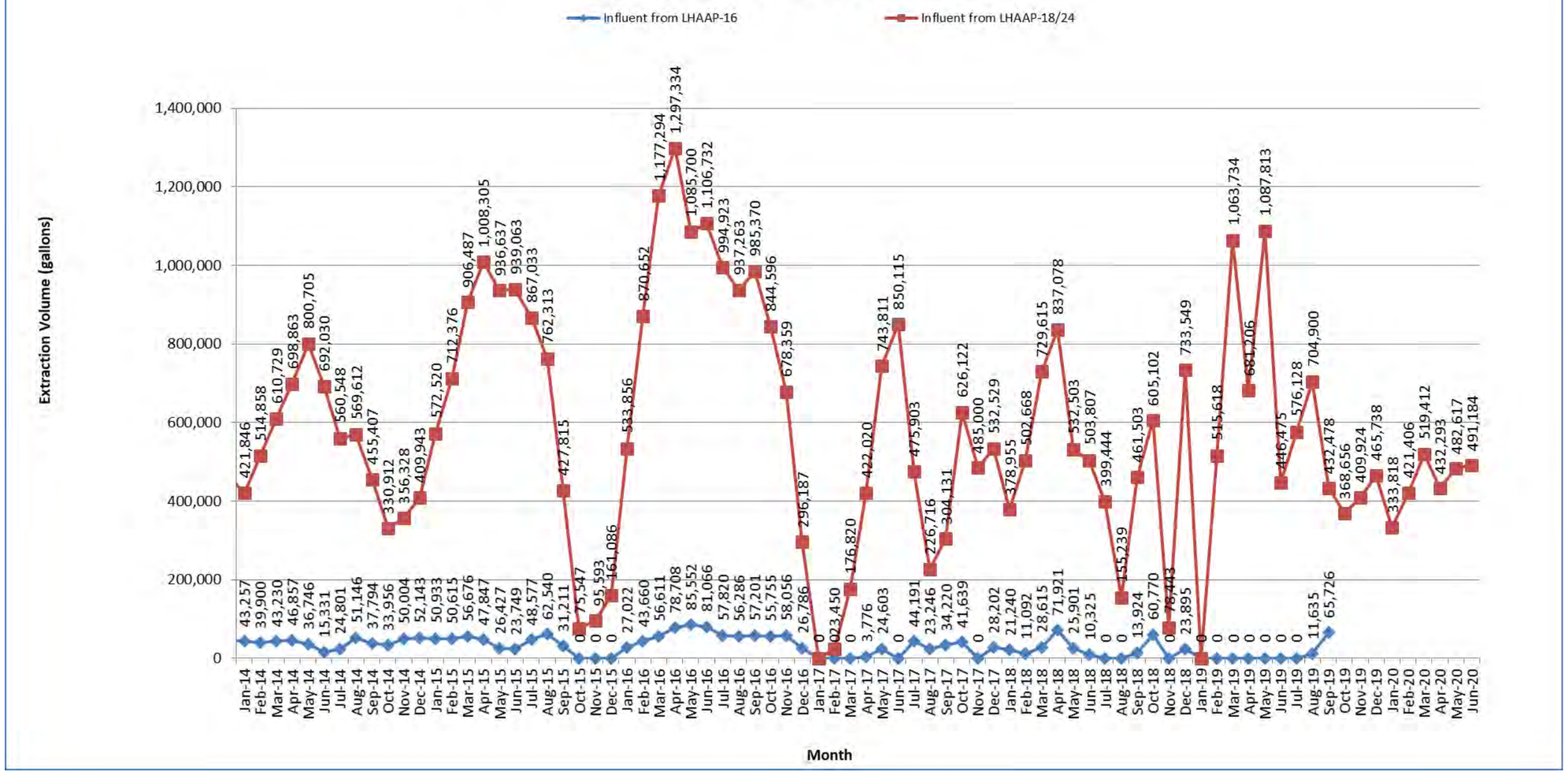
Grab perchlorate samples from the GWTP influent were collected on 7 April, 5 May, and 2 June 2020, and the following concentrations were reported: 10,600 micrograms per liter (µg/L); 6,740 µg/L; and 8,290 µg/L, respectively. A quarterly influent sample was collected and analyzed for perchlorate on 19 May 2020, and had a detection of 9,250 µg/L. Considering all four perchlorate results, the average perchlorate concentration in the GWTP influent during the quarter was 8,720 µg/L. None of the perchlorate concentrations in any effluent (TK-650) samples discharged to the Harrison Bayou exceeded the daily maximum effluent limit of 589 µg/L during the quarter.

As shown in **Table ES-1**, 1,467,448 gallons of treated groundwater was discharged directly to the Harrison Bayou. No treated groundwater was discharged from the INF Pond to the Harrison Bayou in the 2nd quarter of 2020. **Table ES-1** also presents the INF Pond staff gauge readings by date, which is used to determine the freeboard available in the pond.

The groundwater volume extracted for treatment at the GWTP ranged from a low of 432,293 gallons in April 2020 to a high of 491,184 gallons in June 2020. The total water extracted for treatment by the GWTP in the 2nd quarter of 2020 was approximately 1,406,094. The 3 month average was approximately 468,698 gallons per month. The water quantities treated each month since June 2012 are shown on **Figure ES-2**. The total volume of water extracted based upon the sum of the individual extraction wells and ICTs from LHAAP-18/24 in 2nd quarter of 2020 (1,406,094) is slightly lower than the volume of water discharged to the Harrison Bayou (1,467,448). Typically the reason for the difference is identified as the change in volume stored

in the GWTP, the amount of water lost with the removed metals precipitation sludge, and the amount of evaporative water lost in the air stripper (which is included in the volume processed, but not in the volume discharged).

Figure ES-1: Groundwater Recovery Between January 2014 & June 2020
LHAAP-18/24 & LHAAP-16



Note: Starting in September 2019 no groundwater was extracted subsequent to the final remedy of injections being implemented at LHAAP-16.

Figure ES-2
Treated Groundwater Discharged Monthly from June 2012 through June 2020

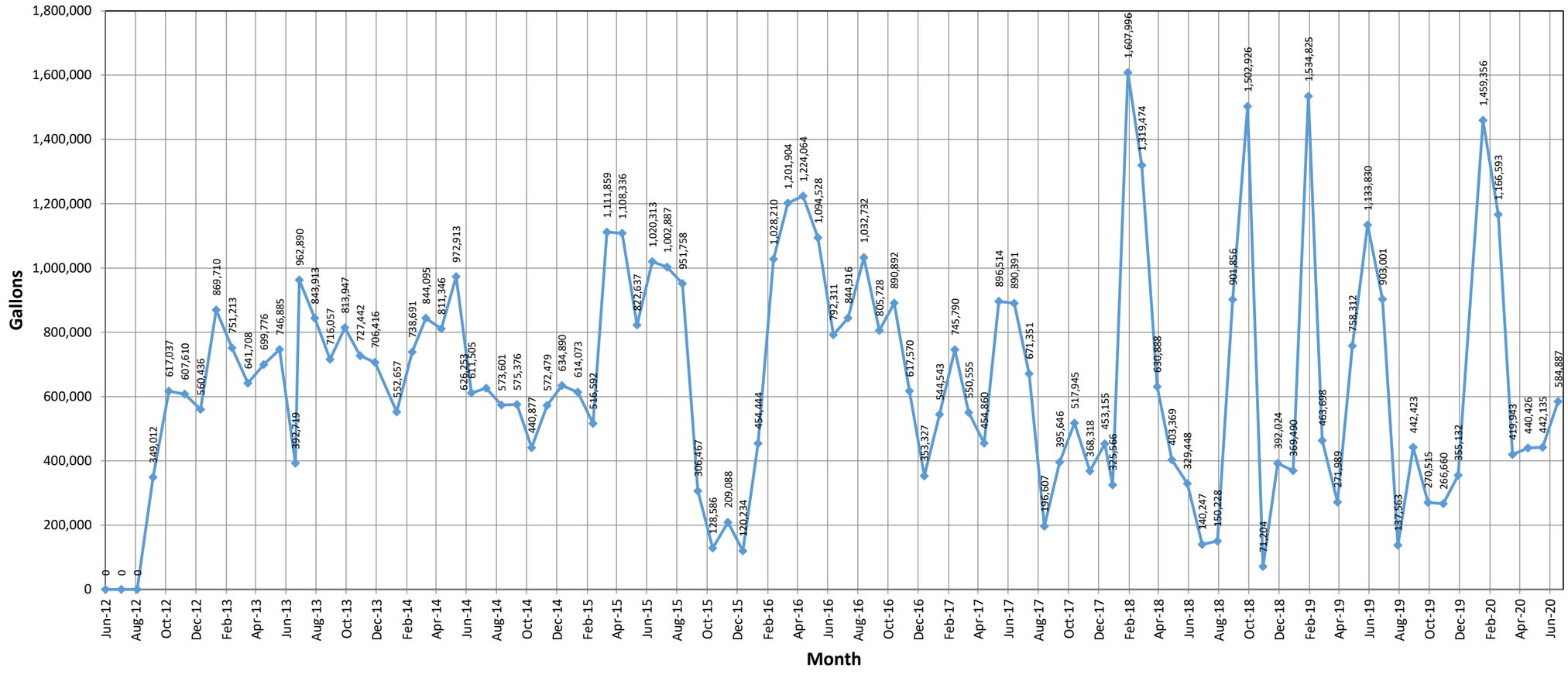


Table ES-1: Discharge Information to Harrison Bayou During 2nd Quarter 2020

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
04/01/2020	FLOOD STAGE	MAXIMUM	15,159	0	0	15,159	4.00
04/02/2020	16,405	4,793	15,801	0	0	15,801	3.99
04/03/2020	14,233	4,159	14,125	0	0	14,125	3.99
04/04/2020	10,286	2,982	0	0	0	0	3.99
04/05/2020	8,523	2,471	0	0	0	0	4.00
04/06/2020	6,300	1,840	55,125*	0	0	55,125	4.00
04/07/2020	5,773	1,687	14,485	0	0	14,485	4.00
04/08/2020	4,848	1,416	14,636	0	0	14,636	3.99
04/09/2020	3,693	1,235	13,674	0	0	13,674	3.99
04/10/2020	3,185	923	0	0	0	0	3.99
04/11/2020	2,798	811	0	0	0	0	4.03
04/12/2020	FLOOD STAGE	MAXIMUM	0	0	0	0	4.58
04/13/2020	NA	NA	0	0	0	0	4.58
04/14/2020	FLOOD STAGE	MAXIMUM	57,004*	0	0	57,004	4.58
04/15/2020	FLOOD STAGE	MAXIMUM	9,582	0	0	9,582	4.70
04/16/2020	16,154	4,720	11,555	0	0	11,555	4.70
04/17/2020	12,329	3,575	0	0	0	0	4.70
04/18/2020	9,542	2,767	0	0	0	0	4.69
04/19/2020	7,863	2,280	0	0	0	0	4.69
04/20/2020	6,613	1,932	56,514*	0	0	56,514	4.73
04/21/2020	5,084	1,485	16,487	0	0	16,487	4.73
04/22/2020	4,180	1,221	17,913	0	0	17,913	4.73
04/23/2020	FLOOD STAGE	MAXIMUM	17,589	0	0	17,589	4.82
04/24/2020	16,724	4,849	0	0	0	0	4.82
04/25/2020	14,538	4,216	0	0	0	0	4.82
04/26/2020	11,259	3,265	0	0	0	0	4.81
04/27/2020	9,213	2,692	71,507*	0	0	71,507	4.81
04/28/2020	7,856	2,295	15,704	0	0	15,704	4.93
04/29/2020	FLOOD STAGE	MAXIMUM	16,060	0	0	16,060	4.98

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
04/30/2020	FLOOD STAGE	MAXIMUM	7,506	0	0	7,506	4.98
05/01/2020	16,029	4,648	0	0	0	0	4.98
05/02/2020	12,536	3,635	0	0	0	0	4.97
05/03/2020	8,896	2,579	0	0	0	0	4.96
05/04/2020	6,953	2,326	75,531*	0	0	75,531	4.95
05/05/2020	4,495	1,504	14,495	0	0	14,495	4.94
05/06/2020	3,898	1,304	17,037	0	0	17,037	4.93
05/07/2020	3,328	972	15,318	0	0	15,318	4.92
05/08/2020	FLOOD STAGE	MAXIMUM	0	0	0	0	4.91
05/09/2020	15,672	4,579	0	0	0	0	5.19
05/10/2020	12,533	3,634	0	0	0	0	5.18
05/11/2020	9,798	2,863	74,134*	0	0	74,134	5.17
05/12/2020	7,644	2,233	15,239	0	0	15,239	5.16
05/13/2020	5,723	1,672	17,130	0	0	17,130	5.15
05/14/2020	4,402	1,286	14,578	0	0	14,578	5.14
05/15/2020	3,698	1,072	0	0	0	0	5.13
05/16/2020	12,569	3,645	0	0	0	0	5.22
05/17/2020	10,663	3,092	0	0	0	0	5.21
05/18/2020	8,718	2,547	69,916*	0	0	69,916	5.19
05/19/2020	6,333	1,850	17,023	0	0	17,023	5.18
05/20/2020	5,434	1,587	14,536	0	0	14,536	5.17
05/21/2020	4,145	1,211	14,497	0	0	14,497	5.16
05/22/2020	3,578	1,037	0	0	0	0	5.15
05/23/2020	3,129	907	0	0	0	0	5.14
05/24/2020	2,874	833	0	0	0	0	5.29
05/25/2020	FLOOD STAGE	MAXIMUM	0	0	0	0	5.34
05/26/2020	FLOOD STAGE	MAXIMUM	58,959*	0	0	58,959	5.33
05/27/2020	FLOOD STAGE	MAXIMUM	11,075	0	0	11,075	5.68
05/28/2020	FLOOD STAGE	MAXIMUM	12,667	0	0	12,667	5.67

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
05/29/2020	16,528	4,793	0	0	0	0	5.66
05/30/2020	12,984	3,768	0	0	0	0	5.65
05/31/2020	9,897	2,870	0	0	0	0	5.64
06/01/2020	5,941	1,736	56,609*	0	0	56,609	5.60
06/02/2020	5,306	1,550	18,578	0	0	18,578	5.58
06/03/2020	4,367	1,276	19,750	0	0	19,750	5.56
06/04/2020	3,580	1,046	15,555	0	0	15,555	5.54
06/05/2020	3,054	885	0	0	0	0	5.52
06/06/2020	2,675	775	0	0	0	0	5.50
06/07/2020	2,298	667	0	0	0	0	5.48
06/08/2020	2,068	691	73,419*	0	0	73,419	5.46
06/09/2020	1,679	562	17,541	0	0	17,541	5.44
06/10/2020	1,439	481	19,835	0	0	19,835	5.42
06/11/2020	1,198	400	17,332	0	0	17,332	5.40
06/12/2020	987	302	0	0	0	0	5.38
06/13/2020	865	269	0	0	0	0	5.36
06/14/2020	749	248	0	0	0	0	5.34
06/15/2020	654	218	76,009*	0	0	76,009	5.32
06/16/2020	562	188	17,266	0	0	17,266	5.30
06/17/2020	501	167	19,314	0	0	19,314	5.28
06/18/2020	432	144	15,988	0	0	15,988	5.26
06/19/2020	398	131	0	0	0	0	5.24
06/20/2020	340	112	0	0	0	0	5.22
06/21/2020	305	100	0	0	0	0	5.39
06/22/2020	481	160	78,971*	0	0	78,971	5.37
06/23/2020	551	184	14,448	0	0	14,448	5.35
06/24/2020	4,683	1,566	8,877	0	0	8,877	6.48
06/25/2020	5,099	1,706	21,002	0	0	21,002	6.49
06/26/2020	4,823	1,591	0	0	0	0	6.47
06/27/2020	4,591	1,515	0	0	0	0	6.45

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
06/28/2020	6,325	2,087	0	0	0	0	6.58
06/29/2020	5,710	1,910	75,722*	0	0	75,722	6.56
06/30/2020	5,097	1,705	18,671	0	0	18,671	6.54
TOTALS			1,467,448	0	0	1,467,448	

Notes: The maximum discharge rate from the INF Pond is 170 gallons per minute (gpm) and the maximum discharge rate from the GWTP is 30 gpm.
NA = Not applicable
Treated groundwater volume released over the weekend is included in the total for the next working day. These volumes are marked with an asterisk (*).

1 EVALUATION OF GROUNDWATER TREATMENT PLANT

The Groundwater Treatment Plant (GWTP) was constructed as part of the Interim Remedial Action (IRA) at Burning Ground Number (No.) 3, also referred to as Longhorn Army Ammunition Plant (LHAAP)-18/24, to treat groundwater extracted from interception-collection trenches (ICTs) and extraction wells. **Figure A-1** located in **Appendix A** presents the layout of the ICTs and extraction wells at LHAAP-18/24. The groundwater contamination at LHAAP-18/24 likely resulted from infiltration from an Unlined Evaporation Pond (UEP) that was used to store manufacturing wastewater, and from burning trenches and other industrial processes used to flash pyrotechnic, propellant, and explosive waste streams. The groundwater at LHAAP-18/24 is contaminated mainly with chlorinated ethenes and perchlorate, with lesser concentrations of 1,4-dioxane.

The GWTP no longer receives flow from LHAAP-16 due to injections completed as a part of the final remedy implementation, which commenced in September 2019. The GWTP had previously received flow from eight extraction wells installed at LHAAP-16 as part of a historic treatability study. The extraction wells were installed in 1996 and 1997.

1.1 Treatment Configuration

The process flow diagram for the GWTP is presented in **Appendix A, Figure A-2**. The GWTP was not operational between 24 May 2012, and 6 September 2012, due to malfunction of the scrubber unit associated with the catalytic oxidizer. Since 6 September 2012, the GWTP has operated without air abatement equipment. Although major repairs were conducted on the GWTP (e.g., replacement of level alarms, repair of the hydrochloric acid [HCl] tank, replacement of TK-650, replacement of malfunctioning valves and flow meters, replacement of metering pumps, repair or replacement of various system pumps, rust removal and repainting of various tanks, and replacement and repair of various extraction pumps, motors, and level switches), the GWTP treatment configuration has remained relatively unchanged. The only exception to this is that ion exchange vessels were installed in November 2018 following the fluidized bed reactor (FBR) to further remove perchlorate prior to discharging to the INF pond.

Malfunction of the blower on the air stripper (BL-340) on 14 September 2015, and on 17 September 2015, disrupted continuous extraction and routine operations of the GWTP, which lasted through 7 January 2016. Prior to this occurrence, the GWTP performed as designed and the GWTP was operated on an as needed basis (i.e., semi-continuous operational basis). During the 4th quarter of 2015, groundwater was extracted from a limited number of ICTs (ICTs 12E, 13A, 13B, 13C, and/or 13E, or ICTs 14B, 14C, and 14D). Operation of the GWTP occurred on a batch basis through the FBR. After replacement of the blower, attempts were made to restore continuous operations to the FBR but remained predominantly on a batch basis throughout January 2016.

In December 2016, an HCl spill caused plant operations to shut down until the issue could be properly addressed. The FBR performance was challenged by the increased chlorides in the

neutralized wastewater, but performance gradually returned to normal in the 1st quarter of 2017. Groundwater extraction was gradually increased to full rates during the 2nd quarter of 2017.

On 12 August 2017, severe storms caused a power outage at LHAAP-18/24. When electrical service was restored, the main transformer failed due to a manufacturing defect. A portable emergency generator was brought on-site on 21 August 2017, to allow the FBR to operate in full recycle mode. After a replacement transformer was installed on 12 September 2017, extraction began from ICT-13B, 13C, 13D, 13E, 13F, 7, and EW01 and the FBR was put into normal operation. Beginning on 21 September 2017, groundwater was extracted from all of the ICTs.

On 27 December 2018, severe storms caused a power outage in Karnack, Texas. When electrical service was restored, the main transformer was determined to have failed. A portable emergency generator was brought on-site on 28 December 2018, to allow the FBR to operate in full recycle mode. On 5 February 2019, the smaller generator mobilized in December 2018 was replaced with a larger generator capable of powering the LHAAP-18/24 well field and the entire GWTP. On 8 February 2019, the transformer at the GWTP was tested to ensure that it could handle backfeeding necessary to power the LHAAP-18/24 well field due to the necessary step-down in power from the generator. Following additional system modifications based upon the testing, the well field at LHAAP-18/24 had power restored on 11 February 2019, using the generator and transformer at the GWTP.

From 28 October through 31 October 2019, Palmetto Services was onsite to install new double walled pipe to 18WW17. The previous pipe had a leak and so the line had been stubbed off on 17 June 2019.

On 11 January 2020, a possible tornado and straight line winds came through the area and broke the power lines. The breaker was shut off at the transformer until power lines could be repaired on 14 and 15 January 2020, by Ark-La-Tex. On 18 January 2020, power was lost to the GWTP and it was discovered that there was a blown fuse on the power lines. Ark-La-Tex Electric was called to the site to replace the fuse and power was restored to the GWTP the same day.

On 29 March 2020, there was a power glitch that caused the air compressors to shut down. The air compressors and FBR were restarted on the same day.

On 13 April 2020, two trees fell across a power line and caused a loss of power to the plant. Ark-La-Tex removed the trees and restored power at 9:45 AM on 14 April 2020.

On 2 May 2020, a tree fell across Southwestern Electric Power Company's (SWEPCO's) line inside the plant that feeds the GWTP. SWEPCO came out and removed the tree from the line. Power was restored the same day.

Flow rates for the treatment processes for metals and Volatile Organic Compounds (VOCs) ranged between 180 and 200 gallons per minute (gpm) with an average of approximately 190 gpm for the operating hours (i.e., this flow rate does not represent continuous flows). The GWTP operated for 212.50 hours during the quarter. The treatment configuration of the plant at these rates (with minor variations) is shown in the following tables.

GWTP Metals Precipitation Operating Parameters

Pretreatment Settings	Tank 200-A $Mg(OH)_2$ Mixing	Tank 200-B NaOH Mixing	Tank 200-C Polymer Mixing	Tank 300 feed line to Air Stripper
pH Adjustment	9.0	10.5	NA	5.0 to meet ≤ 8.0 release from stripper
Feed Pump Settings	Speed 100% Stroke 100% 10 gph $Mg(OH)_2$	Speed 100% Stroke 100% 9.0 gph NaOH	Speed 90% Stroke 100% 40 gph water	Speed 80% Stroke 80% 10 gph HCl
Notes: gph - gallons per hour, NaOH - sodium hydroxide, $Mg(OH)_2$ - magnesium hydroxide, NA - not applicable				

GWTP Air Compressors Operating Parameters

Air Compressors	K-700A	K-700B	K-701
Air Pressure Settings	88 psi	88 psi	105 psi
Note: psi - pounds per square inch			

GWTP Stripper Operating Parameters

pH Setting	7.4
Inlet Pressure Gauge	Not operational
Stripper Pressure Gauge	Not operational
Air Flow Rate	Not operational

GWTP Fluidized Bed Reactor Operating Parameters

Carbon Bed Height	12 feet & 8 to 11 inches
Recycle Flow Rate	200 gpm
pH	7.1 to 7.4
Recycle oxidation-reduction potential (ORP)	<-430 mV
Note: mV – millivolts	

1.2 Work Performed at the GWTP

Work performed at the GWTP during the 2nd quarter of 2020 is described in the following subsections.

1.2.1 Major Maintenance

The major maintenance items that were completed at the GWTP during this quarterly reporting period are:

- On 10 April 2020, Ark-La-Tex Electric was onsite to replace a blown fuse on circuit #7.
- On 14 April 2020, Ark-La-Tex Electric was onsite to repair broken power lines which were broken due to severe storms on 12 and 13 April.
- On 15 April 2020, Bloc Design was onsite to repair walkway lights and flood lights at the GWTP and also to replace a blown fuse in ICT 12D.

- On 28 April 2020, Rogers Air Conditioning (A/C) & Heat was onsite to repair the air conditioner in the GWTP office.
- On 5 May 2020, Bloc Design was onsite to repair electrical problems at the potable water pump house and also to replace bad coils in ICT 12B and 14D.
- On 13 May 2020, Rogers A/C & Heat was onsite to replace the coil in the A/C unit at the GWTP office.
- On 20 May 2020, Bloc Design was onsite to replace the reset relay at the potable water pump house and also to replace a bad coil in 18WW17 and contactors in ICT 12D.
- On 24 June 2020, Ark-La-Tex Electric was onsite to replace a blown fuse on the power line.

1.2.2 Routine Maintenance

The following routine maintenance items were completed at the GWTP during this quarterly reporting period:

- Performed housekeeping in GWTP office
- Performed housekeeping in Army trailer
- Performed housekeeping around GWTP and containment area
- Performed housekeeping in GWTP Shop
- Mowed grass around GWTP and GWTP office
- Bush hogged and conducted weed eating around wells at LHAAP-18/24 and around ICT wells
- Used trackhoe to clear fallen trees at LHAAP-18/24
- Used trackhoe to clear debris blocking flow at discharge location in Harrison Bayou
- Rebuilt Grundfos pumps
- Backwashed granular activated carbon vessel
- Performed acid wash of media in air stripper
- Replaced ¼-inch tubing on suction side of P-103
- Replaced broken ½-inch tubing on suction side of P-225
- Removed two fallen trees from roadway and power lines by Harrison Bayou
- Repaired chain on roll up door in GWTP Shop
- Met with Mr. Dale Vodak of Texas Commission on Environmental Quality (TCEQ) about waste and used oil on 28 April 2020
- Replaced battery in automatic gate at entrance of GWTP
- Collected annual ICT well samples
- Removed fallen trees that were blocking access to well 18CPTMW1

1.2.2.1 Safety

Mr. Scott Beesinger and Mr. Kennie Moore both completed the required 8-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher on 20 April 2020.

1.2.2.2 Lubrication

No lubrication maintenance was conducted during the reporting period.

1.2.2.3 Air Compressors

No air compressor maintenance was conducted during the reporting period.

1.2.2.4 Belt Press and Waste Disposal

No belt press or waste disposal was conducted during the reporting period.

1.2.2.5 Sand Filter

No maintenance or repairs were conducted on the sand filter during the reporting period.

1.2.2.6 Well Field at LHAAP-18/24

- Collected monthly water levels
- Collected semi-annual samples from wells
- Replaced blown fuse in ICT 12D
- Replaced broken 1-inch union on ICT 11
- Replaced broken 1-inch union on ICT 13E
- Replaced broken 1-inch tee on ICT 14A
- Cleaned level probes on ICTs 7, 14A, & 14C
- Replaced pump, 1-inch union, and 1-inch nipple on ICT 13C
- Replaced pump and flow meter on ICT 13B
- Replaced pump in ICT 2
- Replaced coil in electrical panel for ICTs 12B and 14D

1.2.2.7 Miscellaneous Activities

- On 10 April 2020, the center phase fuse blew and Ark-La-Tex Electric was called out to replace the fuse and power was restored to the GWTP.
- On 11 April 2020, there was power glitch which caused the air compressors to shut down. The air compressors were restarted and FBR was restarted.
- On 12 April 2020, power was lost on Southwestern Electric Power Company's (SWEPCO's) side at 10:00 AM. SWEPCO was called and power was restored at 12:15 PM.

- On 12 April and 13 April 2020, there were severe thunderstorms at the plant which caused two tress to fall and break a power line. The trees were removed and power was restored on 14 April 2020 at 9:45 AM.
- On 2 May 2020, a tree fell across SWEPCO's line inside the plant that feeds the GWTP. SWEPCO was called and they came out and removed the tree from the line and power was restored at 12:00 AM.
- On 8 May 2020, there was a power glitch. Air compressors were restarted and the FBR was restarted.
- On 16 May 2020, there was a power glitch. Air compressors were restarted and the FBR was restarted.
- On 31 May 2020, the acetic acid pump lost prime. The pump was re-primed and the FBR was restarted.
- On 21 June 2020, there was a power glitch at the GWTP which caused the air compressors to shut down. The air compressors were restarted and the FBR was restarted.

1.2.3 Routine Maintenance (Potable Water Wells)

- Flushed potable water lines.

1.3 Filter Cake Operations and Management

No filter cake operations took place during this reporting period.

1.4 Fluidized Bed Reactor Operations

The operating parameters for the GWTP FBR are presented in **Table 1**. There were a few instances noted in gray in the table below where either the pH or the ORP fell outside of the optimal range. No measurements were taken on 13 April 2020, due to the aforementioned power outage caused by falling trees that day.

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 2nd Quarter 2020

Date	pH (7.1-7.4)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
4/1/2020	7.1	-436	67
4/2/2020	7.1	-443	66
4/3/2020	7.1	-434	66
4/4/2020	7.1	-435	66
4/5/2020	7.1	-441	66
4/6/2020	7.0	-443	67
4/7/2020	7.0	-438	69
4/8/2020	7.0	-429	71
4/9/2020	7.0	-445	73
4/10/2020	7.1	-440	73

Date	pH (7.1-7.4)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
4/11/2020	7.1	-429	73
4/12/2020	7.1	-434	72
4/13/2020	No power	No power	No power
4/14/2020	7.0	-437	68
4/15/2020	7.1	-447	65
4/16/2020	7.2	-439	63
4/17/2020	7.2	-445	64
4/18/2020	7.1	-450	65
4/19/2020	7.1	-453	66
4/20/2020	7.2	-455	66
4/21/2020	7.2	-451	67
4/22/2020	7.2	-467	67
4/23/2020	7.2	-455	67
4/24/2020	7.2	-450	67
4/25/2020	7.2	-444	68
4/26/2020	7.2	-439	68
4/27/2020	7.2	-437	71
4/28/2020	7.2	-437	70
4/29/2020	7.2	-445	71
4/30/2020	7.2	-442	70
5/1/2020	7.2	-433	71
5/2/2020	7.2	-440	72
5/3/2020	7.2	-445	73
5/4/2020	7.3	-441	76
5/5/2020	7.3	-440	75
5/6/2020	7.3	-424	75
5/7/2020	7.3	-441	73
5/8/2020	7.3	-433	73
5/9/2020	7.3	-440	73
5/10/2020	7.3	-429	73
5/11/2020	7.3	-442	71
5/12/2020	7.3	-446	70
5/13/2020	7.4	-429	71
5/14/2020	7.4	-435	74
5/15/2020	7.4	-440	74
5/16/2020	7.4	-431	74
5/17/2020	7.4	-439	74
5/18/2020	7.4	-433	75

Date	pH (7.1-7.4)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
5/19/2020	7.4	-445	75
5/20/2020	7.4	-438	75
5/21/2020	7.3	-440	76
5/22/2020	7.3	-435	76
5/23/2020	7.3	-441	76
5/24/2020	7.3	-437	77
5/25/2020	7.3	-429	77
5/26/2020	7.2	-449	79
5/27/2020	7.3	-467	77
5/28/2020	7.3	-429	75
5/29/2020	7.3	-430	77
5/30/2020	7.4	-433	78
5/31/2020	7.4	-435	79
6/1/2020	7.3	-440	77
6/2/2020	7.3	-423	76
6/3/2020	7.3	-441	78
6/4/2020	7.2	-461	78
6/5/2020	7.2	-442	79
6/6/2020	7.2	-446	80
6/7/2020	7.2	-450	81
6/8/2020	7.2	-453	83
6/9/2020	7.3	-440	82
6/10/2020	7.3	-436	82
6/11/2020	7.2	-451	79
6/12/2020	7.2	-449	80
6/13/2020	7.1	-452	81
6/14/2020	7.1	-458	82
6/15/2020	7.2	-460	83
6/16/2020	7.2	-446	81
6/17/2020	7.2	-445	82
6/18/2020	7.2	-436	81
6/19/2020	7.2	-439	82
6/20/2020	7.2	-447	83
6/21/2020	7.2	-450	84
6/22/2020	7.2	-457	81
6/23/2020	7.2	-450	81
6/24/2020	7.2	-436	81
6/25/2020	7.2	-458	81

Date	pH (7.1-7.4)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
6/26/2020	7.2	-450	81
6/27/2020	7.2	-445	82
6/28/2020	7.3	-453	83
6/29/2020	7.2	-446	83
6/30/2020	7.2	-435	82

1.5 Process Chemical Usage at GWTP

Approximate chemical consumption and the quantity delivered during the 2nd quarter of 2020 are shown in **Table 2**.

Table 2. Chemical Usage and Delivery Table

Chemical	Usage 2nd Quarter 2020	Quantity Delivered 2nd Quarter 2020
Hydrochloric acid	480 gallons	0
Sodium hydroxide (35%)	800 gallons	0
Acetic acid (50%)	1 2/3 drums = 95 gallons	12 drums = 660 gallons
Phosphoric acid (75%)	42.0 liters	1 drum = 55 gallons
Magnesium hydroxide	240 gallons	0
Urea	310.6 pounds	10 bags = 500 pounds
Polymer (magnafloc 110-L)	9.6 liters	0

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2 EVALUATION OF LHAAP-18/24 ICT EFFECTIVENESS

The ICT system at Burning Ground No. 3 is composed of 14 sections ranging in length from 100 feet (ft) to 1,300 ft. A total of approximately 5,000 linear ft of trench was installed within and around three sides of Burning Ground No. 3. The trench sections extend approximately 22 ft to 45 ft below ground surface (bgs). Most, but not all of the trenches are as deep as the confining clay layer of the shallow groundwater zone. High density polyethylene (HDPE) liners were installed in ICTs 12 and 13, located on the western and northern boundaries of LHAAP-18/24, respectively. The locations of the liners are shown on **Figure A-1** in **Appendix A**. **Table A-1** in **Appendix A** presents the depths of the ICTs.

2.1 Groundwater Elevation

Water levels from 94 monitoring wells and 11 piezometers (piezometer 12 was damaged and plugged and abandoned in May 2013) are measured monthly to generate potentiometric surface maps that assist in monitoring the effectiveness of the groundwater extraction system on plume containment. The groundwater contours are generated using the water levels from the shallow zone and Wilcox Formation wells. The water level data are presented in **Table 3**. No reinjection of treated groundwater or reapplication to LHAAP-18/24 grounds via the existing irrigation system occurred during the 2nd quarter of 2020. Potentiometric surface maps are presented in **Appendix B** and groundwater elevations from the 2nd quarter of 2020 are discussed in Section 2.2.

2.2 Performance of Plume Capture

The intent of the ICTs is to control groundwater gradients, prevent off-site migration of contaminated groundwater, extract the most highly contaminated groundwater, and reduce the mass of contaminants in groundwater. Liners were installed in the ICTs on the northern (ICT 13) and western (ICT 12) site boundaries to limit migration of contaminated water from the site towards Harrison Bayou. At the same time, the liners reduce or prevent removal of contaminated groundwater that is outside the containment zone, between the site and Harrison Bayou. The ICTs are installed within the shallow subsurface at the site and capture primarily shallow groundwater (e.g., < 40 ft bgs).

In 2007 and 2008, in consultation with the TCEQ and the United States Environmental Protection Agency (USEPA), the Army ceased operations of ICTs 1, 3, 5, 10, 12A and 13G for groundwater extraction (note that extraction from ICT 12A was resumed after pump replacement in December 2012). Two other ICTs (ICT 6 and ICT 9) were changed from extraction ICTs to re-injection ICTs which ceased in July 2012. Groundwater extraction from well EW-1 located in the northeast central portion of the site began in October 2008 and well 18WW17 located to the northeast of the ICT containment area began in January 2008. **Table A-2** in **Appendix A** presents a summary of extraction equipment replacement since 2011, as dictated by poor extraction performance (malfunctioning pumps, poor pump positioning with respect to groundwater, non-operational

level probes, scale build up, etc.). Further discussion of extraction performance of various ICTs and extraction wells is presented in Section 2.3.

Potentiometric surface maps of the shallow zone groundwater in the vicinity of LHAAP-18/24, based on groundwater elevations measured on 29 April, 28 May, and 30 June 2020, are shown on **Figures B-1, B-2, and B-3 in Appendix B**, respectively. The potentiometric surface maps of the shallow zone were contoured using the Kriging geostatistical interpolation method included in the Golden Software Surfer® data analysis software.

The HDPE liners in the ICTs, where present, were interpreted as groundwater flow barriers. The potentiometric surface maps for April through June of 2020 continue to reflect high groundwater elevations in the northern/northwestern portion of the site with groundwater flow occurring radially from groundwater highs at monitoring well AWD-2 (174.55 ft above mean sea level [amsl] in April 2020, 174.70 ft amsl in May 2020, and 174.95 ft amsl in June 2020) inside the ICT containment area.

The elevated potentiometric surface contours within the ICTs compared to the lower potentiometric surface contours on the outside of the ICTs is likely due to a no flow boundary condition caused by the ICT liners and groundwater extraction along the ICTs. From the groundwater high at monitoring well AWD-2, groundwater flows radially towards the surrounding ICTs which include ICT 13 to the north and northwest, and ICT 12 to the west and southwest.

Groundwater extraction volumes from the ICTs were 432,293 gallons in April 2020; 482,617 gallons in May 2020; and 491,184 gallons in June 2020. Rainfall amounts recorded at the GWTP were 7.07 inches in April 2020, 9.15 inches in May 2020, and 5.16 inches in June 2020. This amount of rainfall resulted in over 164,422 gallons of additional water treated and discharged but not metered with the influent totals.

During the reporting period, approximately 1,467,448 gallons of treated groundwater was discharged to Harrison Bayou from the GWTP. No water was released from the INF pond to the Harrison Bayou. No treated groundwater from the GWTP was returned to LHAAP-18/24 via the sprinkler system. No treated groundwater was released to the INF Pond from the GWTP in the 2nd quarter 2020. **Table 4** presents the daily discharge rates and volume for the 2nd quarter of 2020.

Groundwater levels in Wilcox Formation wells (generally > 40 to 50 ft bgs) were measured during the 2nd quarter of 2020 groundwater gauging events. Wilcox Formation wells correspond generally to those wells previously identified as “Intermediate” and “Deep” wells. “Intermediate” wells are designated as Upper Wilcox Formation wells and “Deep” wells are designated as Lower Wilcox Formation wells. Generally, groundwater in the Upper and Lower Wilcox Formation wells are in hydraulic communication and so can be treated as a single hydrogeologic unit. Therefore, the groundwater elevations in Upper Wilcox wells were used to construct the potentiometric surface maps for the Wilcox Formation. **Figures B-4, B-5, and B-6** in **Appendix B** show the locations of the Wilcox Formation monitoring wells and the potentiometric surface of the Wilcox Formation, based on static water levels measured during

the April, May, and June 2020 gauging events, respectively. Groundwater in the Wilcox Formation generally flows in a northerly direction, towards Caddo Lake and there is a downward vertical gradient between the overlying shallow zone and the Wilcox Formation. However, a groundwater high in the Wilcox Formation occurs in the area of MW-14.

2.3 Quantity of Water Extracted from LHAAP-18/24

The average daily extraction rates from the ICTs were 14,410 gallons per day (gpd) in April 2020, approximately 15,568 gpd in May 2020, and approximately 16,373 gpd in June 2020.

The volume of groundwater removed from LHAAP-18/24 during the 2nd quarter of 2020 measured approximately 1,406,094 gallons, based on total flow measured from the extraction wells and ICT wells. **Figure 2-1** shows the historical trends of extracted volumes based on the influent totalizer by quarter.

In contrast to the approximate total extracted volume based on total flow measured at the GWTP, the total estimated volume discharged to the Harrison Bayou (**Table 4**) following treatment by the GWTP was 440,426 gallons in April 2020; 442,135 gallons in May 2020; and 584,887 gallons in June 2020 for a total of 1,467,448 gallons discharged in the 2nd quarter of 2020. The difference between the total extracted and total discharged volumes is approximately 4%. Approximately 360,324 gallons of water within the treatment plant as of June 30, 2020. The repairs to the double-walled distribution lines from LHAAP-18/24 have increased the influent flow and reduced the influent/effluent volume discrepancy.

As indicated by **Table 5**, 16 of 27 ICTs and wells produced water for the entirety of the 2nd quarter 2020. Wells 1, 3, 5, 10, and 14E did not produce water in the 2nd quarter of 2020. ICTs 13B, 13C, and 14A did not produce water in April 2020 due to replacement of broken pipe. Due to trouble with level probes, ICT 13D did not produce water in May 2020. ICT 14C only produced water in April 2020 because of a bad pump.

2.4 Sampling Activities at LHAAP-18/24

Groundwater sampling was completed at LHAAP-18/24 in accordance with the requirements documented in the Final Revised Installation-Wide Work Plan (Bhate Environmental Associates, Inc. [Bhate], May 2018). The following 79 monitoring wells were sampled for the 2nd quarter of 2020: AWD-1, AWD-3, AWD-4, 18CPTMW01DW, 18CPTMW01SW, 18CPTMW03SW, 18CPTMW04, 18CPTMW04SW, 18CPTMW06, 18CPTMW07, 18CPTMW08SW, 18CPTMW08DW, 18CPTMW10SW, 18CPTMW10DW, 18CPTMW12SW, 18CPTMW12DW, 18CPTMW14, 18CPTMW15, 18CPTMW16, 18CPTMW18, 18CPTMW19, 18CPTMW19SW, 18CPTMW22R, 18CPTMW22SW, 18CPTMW22DW, 18CPTMW23, 18CPTMW23SW, 18CPTMW24, 18CPTMW26SW, 17WW08, 18WW02, 18WW03, 18WW06, 18WW08, 18WW09, 18WW10, 18WW14, 18WW16, 18WW17, 18WW18, 18WW19, 18WW20, 18WW22, 18WW24, 18WW25, C-01, C-02, C-03, C-04, C-06, C-08, C-09, MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-12, MW-13, MW-14, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, MW-102, MW-109, MW-120, MW-125, MW-126, MW-129, and MW-130.

These were sampled between 1 June and 17 June 2020. The following 17 ICTs were sampled on 30 June 2020: ICT-2, 4, 7, 8, 11, 12B, 12C, 12D, 12E, 13A, 13B, 13D, 13E, 13F, 14B, 14C, and 14D.

The analytical results are presented in **Table 6**. Laboratory data packages are provided within **Appendix C**. Parameters exceeding their respective Maximum Contaminant Levels (MCLs), Medium Specific Concentrations (MSCs), or Protective Concentration Levels (PCLs) are as follows: perchlorate; 1,1,2-trichloroethane; 1,1-dichloroethene (DCE); 1,2-dichloroethane; benzene; carbon tetrachloride; cis-1,2-DCE; methylene chloride; tetrachloroethene (PCE); trichloroethene (TCE); trans-1,2-DCE; vinyl chloride (VC); arsenic; barium; chromium; manganese; nickel; and 1,4-dioxane.

Groundwater chemicals of concern (COCs) maps depicting the results of the June 2020 groundwater sampling event for perchlorate, TCE, and methylene chloride are presented by shallow aquifer zone and Wilcox Formation as **Figures D-1 through D-6** in **Appendix D**.

2.4.1 LHAAP-18/24 Analytical Results

The highest perchlorate concentrations in the shallow zone are observed in MW-23, MW-5, MW-7, MW-21, 18WW17, 120, and MW-3, with concentrations in these wells ranging between 12,300 micrograms per liter (µg/L) in 120 to 763,000 µg/L in 18WW17 (**Figure D-1**). The perchlorate concentration in 18CPTMW23, which is located northwest just outside of the LHAAP-18/24 boundary, was reported at 732 µg/L. Meanwhile, the perchlorate concentration was 73 µg/L in December 2019 and 2,500 µg/L in June 2019. The December detections are regularly orders of magnitude lower due to decreased rainfall. Historical data for 18CPTMW23 demonstrates the more typical fluctuation with measurements of perchlorate as follows: 140 µg/L in December 2017, 3,220 µg/L in June 2017, 91.3 µg/L in December 2016, and 2,310 µg/L in June 2016. These changes in concentration are likely influenced by groundwater level fluctuations, rain amounts, and performance of the ICTs.

Perchlorate in the Wilcox Formation was detected in monitoring well 18CPTMW08SW at a concentration of 18,400 µg/L (**Figure D-2**), which is less than the concentration reported in December 2019 (24,000 µg/L) and the June 2019 concentration of 23,000 µg/L. Perchlorate concentration decreases rapidly away from this well. Another area where perchlorate in the Wilcox Formation was identified at an elevated concentration is in MW-14, with a reported June 2020 concentration of 158,000 µg/L. This detection is slightly greater than the detection in December 2019 of 130,000 µg/L. The June 2020 result is roughly 35% less than the detections of 240,000 µg/L (primary sample)/230,000 µg/L (duplicate) in June 2019. Monitoring well 18CPTMW08DW contained an elevated concentration of perchlorate at 2,260 µg/L compared to 310 µg/L in December of 2019 but is less than the detection of 4,300 µg/L in June 2019 and historical detections in this monitoring well.

The highest TCE detection in the shallow aquifer was 31,000 µg/L in monitoring well MW-1 (**Figure D-3**), which was not sampled in December 2019. In June 2020, monitoring well 120 had a TCE concentration of 6,100 µg/L compared to 9,200 µg/L measured in December 2019, and

7,900 µg/L in June 2019. This is a marked decrease compared to the June 2018 concentration of 17,000 µg/L and the December 2018 concentration of 22,000 µg/L.

TCE in the Wilcox Formation is generally present at low concentrations (**Figure D-4**). The highest TCE concentration of 7,700 µg/L in June 2020 was observed in MW-14. This concentration decreased from a concentration of 9,200 µg/L in December 2019 and 11,000 µg/L in June 2019. The previous year the comparable December 2018 concentration was 9,000 µg/L and June 2018 reported 7,300 µg/L. A TCE concentration of 72 µg/L was reported in June 2020 in 18CPTMW01SW, a slight increase from 64 µg/L in December 2019 and an increase from the concentration of 32 µg/L in June 2019. The June 2020 concentration in this well was comparable to the concentration in December 2018 (76 µg/L).

The elevated concentration of methylene chloride (MC) in the shallow zone remains centered on MW-2 with a concentration of 290,000 µg/L (280,000 µg/L in the duplicate). The concentrations of MC in MW-2 have fluctuated since June 2017. The extent of MC in the shallow formation is depicted on **Figure D-5**.

MC in the Wilcox Formation was not detected in 18CPTMW01SW in June 2020. This was a marked decrease from the December 2019 MC concentration of 10 µg/L and a decrease from the concentration of 100 µg/L reported in June 2019 and of 1,600 µg/L in December 2018. This decrease shows a clear reducing trend. MC in MW-14 has not been detected since June 2018. The concentrations of MC in the Wilcox Formation are depicted on **Figure D-6**.

2.4.2 LHAAP-18/24 Trend Analysis

Time-series graphs for the shallow zone and Wilcox Formation wells are presented in **Appendix E**. Graphs for shallow zone wells C-08, MW-2, MW-7, MW-8, MW-16, MW-17, MW-20, MW-21, MW-22, MW-23, 18WW08, 109, 120, 126, and AWD-3 are included. Graphs for Wilcox wells C-03 and MW-14 are also included. The following observations were made, based on the June 2020 groundwater monitoring results:

- MW-2 is located inside the containment in the shallow zone. MC significantly increased to 290,000 µg/L in June 2020 from 42,000 µg/L in December 2019 and was roughly 45% less than 510,000 µg/L in June 2019. The TCE concentration in June 2020 decreased to 1,200 µg/L from 4,800 µg/L in December 2019 and was slightly less than the June 2019 TCE concentration of 1,400 µg/L continuing its downward trrend. Perchlorate was non-detect in June 2020 as well as in December 2019, June 2019, and December 2018.
- The perchlorate concentration in MW-21 increased to 33,200 µg/L in June 2020 compared to 13,000 µg/L in December 2019 and the June 2019 detection of 24,000 µg/L. TCE in MW-21 increased to 7,200 µg/L in June 2020 from the December 2019 concentration of 3,200 µg/L and slightly above the June 2019 concentration of 6,300 µg/L. MC remained below the detection limit.
- The TCE concentration in MW-22 increased in June 2020 to 400 µg/L compared to the concentrations in December 2019 (240 µg/L) and June 2019 (230 µg/L). This variability in the TCE detection has been observed since 2013. MC remained below the detection

limit. Perchlorate increase in June 2020 to a concentration of 493 µg/L compared to 210 µg/L in December 2019 and 95 µg/L in June 2019.

- Perchlorate detected in groundwater at MW-23 decreased to 63,100 µg/L in June 2020 from a concentration of 80,000 µg/L in December 2019 and 67,000 µg/L in June 2019. TCE decreased to 2,300 µg/L in June 2020 from 3,000 µg/L in December 2019 and 2,600 µg/L in June 2019.
- Perchlorate in monitoring well 120 increased from 13,000 µg/L in June 2019 to 23,000 µg/L in December 2019 and then decreased to 12,300 µg/L in June 2020. TCE also increased from 7,900 µg/L in June 2019 to 9,200 µg/L in December 2019 and then decreased to 6,100 µg/L in June 2020 continuing the downward trend.
- MC and perchlorate remained below the detection limits in C-08, to the northeast of the containment area. TCE decreased below the detection limit in June 2020 from the December 2019 concentration of 2.0 µg/L and 1.1 µg/L in June 2019.
- The northeastern well, 109, saw an increase of perchlorate to 10,500 µg/L in June 2020 from the December 2019 concentration of 1,000 µg/L and was slightly above the June 2019 concentration of 10,000 µg/L. TCE decreased to 310 µg/L in June 2020 from the December 2019 concentration of 400 µg/L and increased compared to 130 µg/L in June 2019. MC remained below the detection limit.
- Monitoring wells to the southwest of the containment area include MW-7, MW-8, and MW-17. Perchlorate continued to decrease in MW-7 to 20,300 µg/L in June 2020 from 25,000 µg/L in December 2019 and 26,000 µg/L in June 2019. This well has seen an upward swing in TCE from the June 2019 sampling event (1,300 µg/L) to 3,200 µg/L in December 2019 and then downward to 2,100 µg/L in June 2020. Perchlorate further decreased in MW-8 to 2,150 µg/L in June 2020 from 4,100 µg/L in December 2019 and 7,100 µg/L in June 2019. TCE in MW-8 decreased to 120 µg/L in June 2020 compared to 180 µg/L in December 2019 and was the same as the concentration of 120 µg/L in June 2019. The perchlorate concentration in MW-17 has remained below the detection limit since June 2016. MC remained below the detection limit in both MW-7 and MW-8 and is not analyzed for in MW-17.
- Perchlorate in MW-16 saw an increase to 848 µg/L in June 2020 from a low concentration of 1.8 J (estimated value) µg/L in December 2019 but below the concentration of 2,900 µg/L in June 2019. TCE also increased to 1,200 µg/L from 550 µg/L in December 2019 but was the same as the concentration of 1,200 µg/L in June 2019. This variability in the TCE detection has been observed since 2014. MC remained below the detection limit.
- Perchlorate in AWD-3 decreased from 32 µg/L in December 2019 to 4.07 µg/L in June 2020. Inversely, TCE increased from 230 µg/L in December 2019 to 340 µg/L in June 2020. MC remained below the detection limit.

- C-03 is a Wilcox Formation well located northeast of the containment area, which has remained non-detect for TCE and methylene chloride since December 2014. Perchlorate increased to 141 µg/L in June 2020 from 15 µg/L in June 2019.
- The current concentration of perchlorate in Wilcox Formation well MW-14 increased to 158,000 µg/L in June 2020 from 130,000 µg/L in December 2019. The concentration of TCE decreased to 7,700 µg/L in June 2020 from 9,200 µg/L in December 2019 and 11,000 µg/L in June 2019. MC remained below the detection limit.
- The concentration of MC continues to be non-detect in 18WW08. TCE was below the detection limit in June 2020 from a concentration of 3.2 µg/L in December 2019. Perchlorate increased from non-detect in June 2019 to 3,200 µg/L in December 2019 and decreased to 0.425 µg/L in June 2020. The water level dropped nearly 4 ft in the 4th quarter of 2019 to 167.77 ft amsl. The water level was comparable in June 2019 (172.00 ft amsl), when there were non-detect results for 18WW08, to June 2020 (171.36 ft amsl). Therefore, the concentration in monitoring well 18WW08 appears to be directly influenced by groundwater levels.

Monitoring well MW-20 continues to have no detections of MC, TCE, and perchlorate. While 126 had a very slight increase in perchlorate and TCE from non-detects in December 2019 to 1.08 J µg/L and 0.88 J µg/L, respectively in June 2020. These wells confirm that the plume is delineated to the south.

In general, other than the changes observed above in perchlorate, TCE, and MC concentrations, the COC concentration trends indicate that the plumes are stable, supporting that the extraction system is effective in containing the plumes.

2.5 Groundwater Treatment Plant Sampling and Analysis

Sampling and analysis is completed in accordance with the requirements documented in the Final Revised Sampling and Analysis Plan (AECOM Technical Services, Inc., September 2017). Besides the Record of Decision (ROD) sampling requirement, additional sample analyses are typically performed on the influent and effluent samples to monitor the effectiveness of the perchlorate treatment (FBR and/or ion exchange vessels) process. Sections 2.5.1 through 2.5.4 present the results of analyses conducted during the 2nd quarter of 2020. The complete laboratory results are provided electronically as a separate file (**Appendix F**).

2.5.1 Perchlorate Sampling

Table 7 presents the weekly effluent perchlorate results for the 2nd quarter of 2020. A low level of perchlorate was present in one of the effluent samples collected during the 2nd quarter of 2020, but it did not exceed the screening criteria. Perchlorate was not detected in the remaining weekly effluent samples.

2.5.2 VOC Sampling

Tables 8, 9, and 10 present the effluent VOC results for April, May, and June 2020. Sampling of the effluent for VOCs was conducted on a biweekly basis. The results were below the discharge limits. The tables also provide monthly influent concentrations for VOCs and perchlorate.

2.5.3 Monthly Metals Sampling

As per the Final Installation-Wide Work Plan (Bhate, May 2018), the monthly metals sampling is reported in **Tables 8, 9, and 10**. None of the metals exceeded the effluent discharge limits.

2.5.4 Quarterly Sampling

Sampling of the effluent for VOCs, anions, chemical oxygen demand (COD), oil and grease, perchlorate, and metals was conducted during this quarter and the results were below the discharge limits. **Table 11** presents the analytical results for the 2nd quarter of 2020.

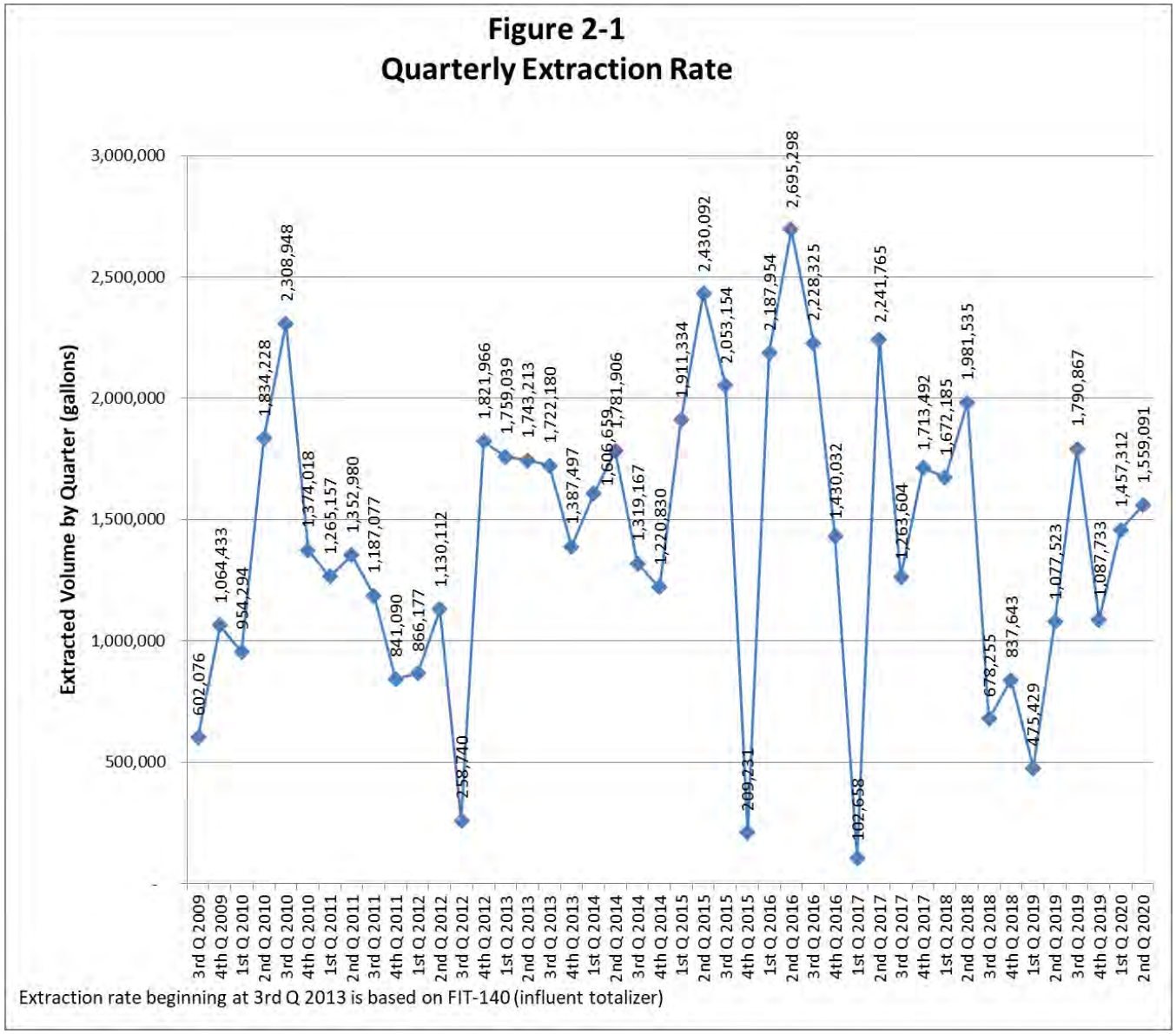
Figure 2-1
Quarterly Extraction Rate
Extracted Volume by Quarter (gallons)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
602,076
1,064,433
954,294
1,834,228
2,308,948
1,374,018
1,265,157
1,352,980
1,187,077
841,090
866,177
1,130,112
258,740
1,821,966
1,759,039
1,743,213
1,722,180
1,387,497
1,606,659
1,781,906
1,319,167
1,220,830
1,911,334
2,430,092
2,053,154
209,231
2,187,954
2,695,298
2,228,325
1,430,032
102,658
2,241,765
1,263,604
1,713,492
1,672,185
1,981,535
678,255
837,643
475,429
1,077,523
1,790,867
1,087,733
1,457,312
1,559,091
3rd Q 2009
4th Q 2009
1st Q 2010
2nd Q 2010
3rd Q 2010
4th Q 2010
1st Q 2011
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3rd Q 2011
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2nd Q 2018
3rd Q 2018
4th Q 2018
1st Q 2019
2nd Q 2019
3rd Q 2019
4th Q 2019
1st Q 2020
2nd Q 2020
Extraction rate beginning at 3rd Q 2013 is based on FIT-140 (influent totalizer)

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Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (feet amsl)	Depth to Water (feet) 4/29/2020	Groundwater Elevation (feet amsl) 4/29/2020	Depth to Water (feet) 5/28/2020	Groundwater Elevation (feet amsl) 5/28/2020	Depth to Water (feet) 6/30/2020	Groundwater Elevation (feet amsl) 6/30/2020
BGPZ-1	Piezometer	184.99	7.22	177.77	6.88	178.11	5.95	179.04
BGPZ-2	Piezometer	184.39	13.66	170.73	13.49	170.90	13.60	170.79
BGPZ-3	Piezometer	180.35	7.39	172.96	6.91	173.44	7.08	173.27
BGPZ-4	Piezometer	177.77	7.09	170.68	6.60	171.17	6.85	170.92
BGPZ-5	Piezometer	180.76	12.44	168.32	12.17	168.59	11.89	168.87
BGPZ-6	Piezometer	197.82	26.83	170.99	26.70	171.12	26.45	171.37
BGPZ-7	Piezometer	195.96	26.50	169.46	26.37	169.59	26.20	169.76
BGPZ-8	Piezometer	197.08	28.55	168.53	28.40	168.68	28.15	168.93
BGPZ-9	Piezometer	196.45	27.25	169.20	27.10	169.35	26.87	169.58
BGPZ-10	Piezometer	197.00	27.42	169.58	27.25	169.75	27.10	169.90
BGPZ-11	Piezometer	196.99	27.54	169.45	27.37	169.62	27.08	169.91
BGPZ-12	Piezometer	188.17	NA	Plugged	NA	Plugged	NA	Plugged
AWD-1	Monitoring Well	182.27	9.95	172.32	9.81	172.46	7.23	175.04
AWD-2	Monitoring Well	186.78	12.23	174.55	12.08	174.70	11.83	174.95
AWD-3	Monitoring Well	200.13	27.70	172.43	27.51	172.62	26.60	173.53
AWD-4	Monitoring Well	193.89	22.53	171.36	22.40	171.49	20.75	173.14
MW-1	Monitoring Well	199.22	26.72	172.50	26.57	172.65	25.55	173.67
MW-2	Monitoring Well	196.73	26.41	170.32	26.25	170.48	25.55	171.18
MW-3	Monitoring Well	196.54	26.08	170.46	25.88	170.66	24.83	171.71
MW-4	Monitoring Well	197.27	26.17	171.10	25.97	171.30	25.05	172.22
MW-5	Monitoring Well	194.97	24.39	170.58	24.20	170.77	22.95	172.02
MW-6	Monitoring Well	192.18	22.13	170.05	21.98	170.20	20.71	171.47
MW-7	Monitoring Well	188.47	18.04	170.43	17.85	170.62	17.00	171.47

Location Identification	Type	Reference Elevation (feet amsl)	Depth to Water (feet) 4/29/2020	Groundwater Elevation (feet amsl) 4/29/2020	Depth to Water (feet) 5/28/2020	Groundwater Elevation (feet amsl) 5/28/2020	Depth to Water (feet) 6/30/2020	Groundwater Elevation (feet amsl) 6/30/2020
MW-8	Monitoring Well	187.13	14.81	172.32	14.70	172.43	15.00	172.13
MW-9	Monitoring Well	184.73	14.14	170.59	13.97	170.76	12.16	172.57
MW-10	Monitoring Well	178.12	9.83	168.29	9.69	168.43	6.52	171.60
MW-11	Monitoring Well	184.65	14.65	170.00	14.50	170.15	13.95	170.70
MW-12	Monitoring Well	178.33	7.12	171.21	6.95	171.38	7.00	171.33
MW-13	Monitoring Well	176.72	6.35	170.37	6.03	170.69	5.17	171.55
MW-14	Monitoring Well	186.19	12.93	173.26	12.80	173.39	11.29	174.90
MW-16	Monitoring Well	178.59	7.94	170.65	7.59	171.00	7.10	171.49
MW-17	Monitoring Well	179.03	9.15	169.88	8.95	170.08	7.40	171.63
MW-18	Monitoring Well	178.58	8.00	170.58	7.82	170.76	7.00	171.58
MW-19	Monitoring Well	178.60	7.72	170.88	7.60	171.00	7.05	171.55
MW-20	Monitoring Well	186.64	11.11	175.53	10.96	175.68	8.15	178.49
MW-21	Monitoring Well	198.70	29.77	168.93	29.60	169.10	31.37	167.33
MW-22	Monitoring Well	197.51	26.85	170.66	26.68	170.83	26.90	170.61
MW-23	Monitoring Well	198.79	26.88	171.91	26.71	172.08	26.69	172.10
101	Monitoring Well	197.53	6.75	190.78	6.51	191.02	5.88	191.65
102	Monitoring Well	193.94	19.33	174.61	19.15	174.79	17.45	176.49
109	Monitoring Well	197.02	27.60	169.42	27.43	169.59	27.34	169.68
120	Monitoring Well	184.19	12.92	171.27	12.80	171.39	10.11	174.08
123	Monitoring Well	186.21	12.95	173.26	12.78	173.43	12.45	173.76
125	Monitoring Well	196.28	24.33	171.95	24.19	172.09	24.90	171.38
126	Monitoring Well	199.37	28.25	171.12	28.12	171.25	27.08	172.29
129	Monitoring Well	197.24	25.42	171.82	25.29	171.95	25.17	172.07
130	Monitoring Well	177.73	6.31	171.42	6.05	171.68	5.48	172.25
C-01	Monitoring Well	193.89	23.47	170.42	23.30	170.59	22.12	171.77

Location Identification	Type	Reference Elevation (feet amsl)	Depth to Water (feet) 4/29/2020	Groundwater Elevation (feet amsl) 4/29/2020	Depth to Water (feet) 5/28/2020	Groundwater Elevation (feet amsl) 5/28/2020	Depth to Water (feet) 6/30/2020	Groundwater Elevation (feet amsl) 6/30/2020
C-02	Monitoring Well	175.95	5.17	170.78	4.93	171.02	3.65	172.30
C-03	Monitoring Well	196.34	26.20	170.14	26.03	170.31	25.05	171.29
C-04	Monitoring Well	194.64	23.84	170.80	23.70	170.94	23.27	171.37
C-04A	Monitoring Well	194.61	23.59	171.02	23.44	171.17	23.19	171.42
C-05	Monitoring Well	180.74	10.90	169.84	10.77	169.97	9.59	171.15
C-06	Monitoring Well	192.22	24.09	168.13	23.94	168.28	22.52	169.70
C-07	Monitoring Well	196.80	27.34	169.46	27.17	169.63	27.25	169.55
C-08	Monitoring Well	193.10	22.94	170.16	22.79	170.31	23.23	169.87
C-09	Monitoring Well	202.35	31.52	170.83	31.39	170.96	31.48	170.87
C-10	Monitoring Well	201.86	31.07	170.79	30.88	170.98	30.80	171.06
17WW08	Monitoring Well	179.72	8.87	170.85	8.70	171.02	7.95	171.77
18WW01	Monitoring Well	201.31	30.45	170.86	30.28	171.03	30.05	171.26
18WW02	Monitoring Well	179.30	8.22	171.08	8.07	171.23	8.03	171.27
18WW03	Monitoring Well	195.59	26.05	169.54	25.89	169.70	25.00	170.59
18WW04	Monitoring Well	183.74	15.15	168.59	14.79	168.95	14.40	169.34
18WW05	Monitoring Well	189.59	20.40	169.19	20.27	169.32	19.93	169.66
18WW06	Monitoring Well	179.70	8.94	170.76	8.81	170.89	8.75	170.95
18WW07	Monitoring Well	183.67	NM	NM	NM	NM	NM	NM
18WW08	Monitoring Well	177.77	8.05	169.72	7.75	170.02	6.41	171.36
18WW09	Monitoring Well	177.51	8.39	169.12	8.12	169.39	6.10	171.41
18WW10	Monitoring Well	182.26	12.65	169.61	12.52	169.74	9.68	172.58
18WW11	Monitoring Well	182.29	13.00	169.29	12.86	169.43	10.09	172.20
18WW14	Monitoring Well	186.47	14.96	171.51	14.85	171.62	14.00	172.47
18WW15	Monitoring Well	186.24	14.50	171.74	14.37	171.87	13.83	172.41
18WW16	Monitoring Well	201.88	31.64	170.24	31.50	170.38	31.00	170.88

Location Identification	Type	Reference Elevation (feet amsl)	Depth to Water (feet) 4/29/2020	Groundwater Elevation (feet amsl) 4/29/2020	Depth to Water (feet) 5/28/2020	Groundwater Elevation (feet amsl) 5/28/2020	Depth to Water (feet) 6/30/2020	Groundwater Elevation (feet amsl) 6/30/2020
18WW18	Monitoring Well	196.82	26.55	170.27	26.39	170.43	25.90	170.92
18WW19	Monitoring Well	179.56	10.98	168.58	10.84	168.72	8.65	170.91
18WW20	Monitoring Well	180.42	11.71	168.71	11.60	168.82	9.34	171.08
18WW21	Monitoring Well	195.20	25.35	169.85	25.16	170.04	24.91	170.29
18WW22	Monitoring Well	195.37	25.40	169.97	25.22	170.15	24.14	171.23
18WW24	Monitoring Well	176.40	5.93	170.47	5.59	170.81	4.80	171.60
18WW25	Monitoring Well	175.15	5.08	170.07	4.70	170.45	5.00	170.15
18CPTMW01SW	Monitoring Well	198.20	26.99	171.21	26.83	171.37	25.80	172.40
18CPTMW01DW	Monitoring Well	197.92	27.63	170.29	27.70	170.22	26.98	170.94
18CPTMW03SW	Monitoring Well	198.53	28.70	169.83	28.55	169.98	27.02	171.51
18CPTMW04	Monitoring Well	196.60	24.10	172.50	23.92	172.68	22.25	174.35
18CPTMW04SW	Monitoring Well	196.42	26.29	170.13	26.14	170.28	25.03	171.39
18CPTMW06	Monitoring Well	198.12	28.11	170.01	27.96	170.16	26.81	171.31
18CPTMW07	Monitoring Well	197.32	27.07	170.25	26.92	170.40	25.98	171.34
18CPTMW08SW	Monitoring Well	196.38	26.20	170.18	26.04	170.34	24.77	171.61
18CPTMW08DW	Monitoring Well	196.59	26.57	170.02	26.63	169.96	25.30	171.29
18CPTMW10SW	Monitoring Well	186.98	16.63	170.35	16.50	170.48	15.72	171.26
18CPTMW10DW	Monitoring Well	187.38	17.12	170.26	16.97	170.41	16.47	170.91
18CPTMW12SW	Monitoring Well	190.90	20.38	170.52	20.23	170.67	19.40	171.50
18CPTMW12DW	Monitoring Well	190.25	19.81	170.44	19.67	170.58	18.94	171.31
18CPTMW14	Monitoring Well	196.69	25.75	170.94	25.61	171.08	25.90	170.79
18CPTMW15	Monitoring Well	179.79	7.91	171.88	7.70	172.09	8.89	170.90
18CPTMW16	Monitoring Well	175.37	4.89	170.48	4.53	170.84	5.24	170.13
18CPTMW18	Monitoring Well	194.53	25.72	168.81	25.60	168.93	26.00	168.53
18CPTMW19	Monitoring Well	193.59	22.27	171.32	22.15	171.44	20.03	173.56

Location Identification	Type	Reference Elevation (feet amsl)	Depth to Water (feet) 4/29/2020	Groundwater Elevation (feet amsl) 4/29/2020	Depth to Water (feet) 5/28/2020	Groundwater Elevation (feet amsl) 5/28/2020	Depth to Water (feet) 6/30/2020	Groundwater Elevation (feet amsl) 6/30/2020
18CPTMW19SW	Monitoring Well	193.29	25.31	167.98	25.17	168.12	21.80	171.49
18CPTMW22SW	Monitoring Well	187.79	17.62	170.17	17.47	170.32	16.62	171.17
18CPTMW22R	Monitoring Well	187.23	8.88	178.35	8.65	178.58	5.55	181.68
18CPTMW22DW	Monitoring Well	188.00	18.60	169.40	18.45	169.55	16.90	171.10
18CPTMW23	Monitoring Well	177.47	7.14	170.33	6.91	170.56	5.43	172.04
18CPTMW23SW	Monitoring Well	177.43	7.45	169.98	7.28	170.15	6.02	171.41
18CPTMW24	Monitoring Well	194.89	25.53	169.36	25.37	169.52	25.05	169.84
18CPTMW26	Monitoring Well	182.60	15.31	167.29	15.20	167.40	15.00	167.60
18CPTMW26SW	Monitoring Well	182.00	11.83	170.17	11.67	170.33	10.65	171.35
1824HBSW7	Surface Water Sample	167.92	5.66	162.26	6.20	161.72	1.80	166.12
Notes: NM-not measured								

Table 4. Treated Groundwater Discharged –April through June 2020

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
04/01/2020	FLOOD STAGE	MAXIMUM	15,159	0	0	15,159	4.00
04/02/2020	16,405	4,793	15,801	0	0	15,801	3.99
04/03/2020	14,233	4,159	14,125	0	0	14,125	3.99
04/04/2020	10,286	2,982	0	0	0	0	3.99
04/05/2020	8,523	2,471	0	0	0	0	4.00
04/06/2020	6,300	1,840	55,125*	0	0	55,125	4.00
04/07/2020	5,773	1,687	14,485	0	0	14,485	4.00
04/08/2020	4,848	1,416	14,636	0	0	14,636	3.99
04/09/2020	3,693	1,235	13,674	0	0	13,674	3.99
04/10/2020	3,185	923	0	0	0	0	3.99
04/11/2020	2,798	811	0	0	0	0	4.03
04/12/2020	FLOOD STAGE	MAXIMUM	0	0	0	0	4.58
04/13/2020	NA	NA	0	0	0	0	4.58
04/14/2020	FLOOD STAGE	MAXIMUM	57,004*	0	0	57,004	4.58
04/15/2020	FLOOD STAGE	MAXIMUM	9,582	0	0	9,582	4.70
04/16/2020	16,154	4,720	11,555	0	0	11,555	4.70
04/17/2020	12,329	3,575	0	0	0	0	4.70
04/18/2020	9,542	2,767	0	0	0	0	4.69
04/19/2020	7,863	2,280	0	0	0	0	4.69
04/20/2020	6,613	1,932	56,514*	0	0	56,514	4.73
04/21/2020	5,084	1,485	16,487	0	0	16,487	4.73
04/22/2020	4,180	1,221	17,913	0	0	17,913	4.73
04/23/2020	FLOOD STAGE	MAXIMUM	17,589	0	0	17,589	4.82
04/24/2020	16,724	4,849	0	0	0	0	4.82
04/25/2020	14,538	4,216	0	0	0	0	4.82
04/26/2020	11,259	3,265	0	0	0	0	4.81
04/27/2020	9,213	2,692	71,507*	0	0	71,507	4.81
04/28/2020	7,856	2,295	15,704	0	0	15,704	4.93

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
04/29/2020	FLOOD STAGE	MAXIMUM	16,060	0	0	16,060	4.98
04/30/2020	FLOOD STAGE	MAXIMUM	7,506	0	0	7,506	4.98
05/01/2020	16,029	4,648	0	0	0	0	4.98
05/02/2020	12,536	3,635	0	0	0	0	4.97
05/03/2020	8,896	2,579	0	0	0	0	4.96
05/04/2020	6,953	2,326	75,531*	0	0	75,531	4.95
05/05/2020	4,495	1,504	14,495	0	0	14,495	4.94
05/06/2020	3,898	1,304	17,037	0	0	17,037	4.93
05/07/2020	3,328	972	15,318	0	0	15,318	4.92
05/08/2020	FLOOD STAGE	MAXIMUM	0	0	0	0	4.91
05/09/2020	15,672	4,579	0	0	0	0	5.19
05/10/2020	12,533	3,634	0	0	0	0	5.18
05/11/2020	9,798	2,863	74,134*	0	0	74,134	5.17
05/12/2020	7,644	2,233	15,239	0	0	15,239	5.16
05/13/2020	5,723	1,672	17,130	0	0	17,130	5.15
05/14/2020	4,402	1,286	14,578	0	0	14,578	5.14
05/15/2020	3,698	1,072	0	0	0	0	5.13
05/16/2020	12,569	3,645	0	0	0	0	5.22
05/17/2020	10,663	3,092	0	0	0	0	5.21
05/18/2020	8,718	2,547	69,916*	0	0	69,916	5.19
05/19/2020	6,333	1,850	17,023	0	0	17,023	5.18
05/20/2020	5,434	1,587	14,536	0	0	14,536	5.17
05/21/2020	4,145	1,211	14,497	0	0	14,497	5.16
05/22/2020	3,578	1,037	0	0	0	0	5.15
05/23/2020	3,129	907	0	0	0	0	5.14
05/24/2020	2,874	833	0	0	0	0	5.29
05/25/2020	FLOOD STAGE	MAXIMUM	0	0	0	0	5.34
05/26/2020	FLOOD STAGE	MAXIMUM	58,959*	0	0	58,959	5.33
05/27/2020	FLOOD STAGE	MAXIMUM	11,075	0	0	11,075	5.68
05/28/2020	FLOOD STAGE	MAXIMUM	12,667	0	0	12,667	5.67

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
05/29/2020	16,528	4,793	0	0	0	0	5.66
05/30/2020	12,984	3,768	0	0	0	0	5.65
05/31/2020	9,897	2,870	0	0	0	0	5.64
06/01/2020	5,941	1,736	56,609*	0	0	56,609	5.60
06/02/2020	5,306	1,550	18,578	0	0	18,578	5.58
06/03/2020	4,367	1,276	19,750	0	0	19,750	5.56
06/04/2020	3,580	1,046	15,555	0	0	15,555	5.54
06/05/2020	3,054	885	0	0	0	0	5.52
06/06/2020	2,675	775	0	0	0	0	5.50
06/07/2020	2,298	667	0	0	0	0	5.48
06/08/2020	2,068	691	73,419*	0	0	73,419	5.46
06/09/2020	1,679	562	17,541	0	0	17,541	5.44
06/10/2020	1,439	481	19,835	0	0	19,835	5.42
06/11/2020	1,198	400	17,332	0	0	17,332	5.40
06/12/2020	987	302	0	0	0	0	5.38
06/13/2020	865	269	0	0	0	0	5.36
06/14/2020	749	248	0	0	0	0	5.34
06/15/2020	654	218	76,009*	0	0	76,009	5.32
06/16/2020	562	188	17,266	0	0	17,266	5.30
06/17/2020	501	167	19,314	0	0	19,314	5.28
06/18/2020	432	144	15,988	0	0	15,988	5.26
06/19/2020	398	131	0	0	0	0	5.24
06/20/2020	340	112	0	0	0	0	5.22
06/21/2020	305	100	0	0	0	0	5.39
06/22/2020	481	160	78,971*	0	0	78,971	5.37
06/23/2020	551	184	14,448	0	0	14,448	5.35
06/24/2020	4,683	1,566	8,877	0	0	8,877	6.48
06/25/2020	5,099	1,706	21,002	0	0	21,002	6.49
06/26/2020	4,823	1,591	0	0	0	0	6.47
06/27/2020	4,591	1,515	0	0	0	0	6.45

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
06/28/2020	6,325	2,087	0	0	0	0	6.58
06/29/2020	5,710	1,910	75,722*	0	0	75,722	6.56
06/30/2020	5,097	1,705	18,671	0	0	18,671	6.54
TOTALS			1,467,448	0	0	1,467,448	

Notes: The maximum discharge rate from the INF Pond is 170 gpm and the maximum discharge rate from the GWTP is 30 gpm.
NA = Not applicable
Treated groundwater volume released over the weekend is included in the total for the next working day. These volumes are marked with an asterisk (*).

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Table 5. Monthly Groundwater Extraction Quantities – April through June 2020

ICT or Well Number	April 2020 (gallons)	May 2020 (gallons)	June 2020 (gallons)	Total
1	0	0	0	0
2	0	8,036	3,516	11,552
3	0	0	0	0
4	21,736	7,766	376	29,878
5	0	0	0	0
EW-01	41	38	9	88
7	14,864	3,253	1,842	19,959
8	68,085	89,907	138,622	296,614
18WW17	3,164	1,885	3,740	8,789
10	0	0	0	0
11	30,874	29,077	12,612	72,563
12A	1,559	6,113	5,459	13,131
12B	9,223	26,778	32,846	68,847
12C	45,763	44,977	31,116	121,856
12D	57,617	66,361	26,622	150,600
12E	33,988	26,225	20	60,233
13A	61,996	45,566	7,077	114,639
13B	0	19,269	57,021	76,290
13C	0	5,347	5,458	10,805
13D	402	0	61	463
13E	256	844	3,688	4,788
13F	9,974	11,629	2,359	23,962
14A	0	800	640	1,440
14B	593	1,843	134	2,570
14C	43,423	0	0	43,423
14D	28,735	86,903	157,966	273,604
14E	0	0	0	0
LHAAP-18/24 Total	***432,293***	***482,617***	***491,184***	***1,406,094***
Site 16	0	0	0	0
LHAAP-16 Total	***0***	***0***	***0***	***0***
	432,293	***482,617***	***491,184***	***1,406,094***

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Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	AWD1_060920 6/09/20	AWD3_0621120 6/11/20	AWD3_0621120-a 6/11/20	AWD4_061520 6/15/20	18CPTMW01DW_061020 6/10/20	18CPTMW01SW_061020 6/10/20	18CPTMW03SW_060920 6/09/20	18CPTMW04_061020 6/10/20	18CPTMW04_061020-a 6/10/20	18CPTMW04SW_061020 6/10/20	18CPTMW06_061020 6/10/20	18CPTMW07_060920 6/09/20	18CPTMW08SW-060920 6/09/20	18CPTMW08DW-060920 6/09/20	18CPTMW10SW_061520 6/15/20	18CPTMW10DW_061520 6/15/20	18CPTMW10DW_061520-a 6/15/20	18CPTMW12SW_060220 6/02/20
Aquifer Zone:			Shallow	Shallow		Shallow	Wilcox	Wilcox	Wilcox	Shallow		Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox		Wilcox
Lab Package:			HS20060495-02	HS20060659-02	HS20060659-03	HS20060849-07	HS20060545-03	HS20060545-04	HS20060495-01	HS20060547-02	HS20060547-03	HS20060547-01	HS20060545-06	HS20060495-04	HS20060498-03	HS20060498-02	HS20060849-04	HS20060849-02	HS20060849-03	HS20060135-01
Well Identification:			AWD-1	AWD-3	AWD-3	AWD-4	18CPTMW01DW	18CPTMW01SW	18CPTMW03SW	18CPTMW04	18CPTMW04	18CPTMW04SW	18CPTMW06	18CPTMW07	18CPTMW08SW	18CPTMW08DW	18CPTMW10SW	18CPTMW10DW	18CPTMW10DW	18CPTMW12SW
Perchlorate (6850)																				
Perchlorate	µg/L	17*	NA	**4.07**	**4.04**	< 0.0500 U	< 0.0500 U	< 0.0500 U	**0.38**	**261**	**235**	**0.889**	< 0.0500 U	**0.41**	**18,400**	**2,260**	< 0.0500 U	**12.8**	**12.6**	**0.464**
Volatile Organic Compounds (8260C)																				
1,1,1,2-Tetrachloroethane	µg/L	110	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2,2-Tetrachloroethane	µg/L	14	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**2.9**	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloroethene	µg/L	7	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**0.63 J**	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloropropene	µg/L	2.9	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
1,2,3-Trichloropropane	µg/L	0.041	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dibromoethane	µg/L	0.05	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichlorobenzene	µg/L	600	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	**0.91 J**	**0.71 J**	**0.72 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	µg/L	5	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.51 J**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	µg/L	61,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
4-Chlorotoluene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Acetone	µg/L	92,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	µg/L	5	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**4.8 J**	**1.7**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromobenzene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	µg/L	4.6	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromoform	µg/L	36	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	µg/L	140	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon tetrachloride	µg/L	5	NA	**12**	**11**	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	µg/L	41,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	µg/L	1,000	NA	**1.1**	**1.0**	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	µg/L	220	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,2-Dichloroethene	µg/L	70	NA	**2.4**	**2.3**	< 0.5 U	< 0.5 U	**100**	**4.2**	**11**	**11**	< 0.5 U	< 0.5 U	< 0.5 U	**9.2**	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,3-Dichloropropene	µg/L	5.3	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dibromochloromethane	µg/L	34	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromomethane	µg/L	380	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dichlorodifluoromethane	µg/L	20,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	µg/L	700	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	µg/L	2,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
n-Butylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
sec-Butylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene	µg/L	100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	NA	**1.7**	**1.4**	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	µg/L	1,000	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,2-Dichloroethene	µg/L	100	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	**1.1**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	µg/L	29	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichloroethene	µg/L	5	NA	**340**	**330**	< 0.5 U	< 0.5 U	**72**	**28**	**300**	**310**	< 0.5 U	**1.1**	< 0.5 U	**33**	NA	< 0.5 U	**1.2**	**1.5**	**0.86 J**
Trichlorofluoromethane	µg/L	31,000	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	µg/L	2	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**2.7**	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	AWD1_060920 6/09/20	AWD3_0621120 6/11/20	AWD3_0621120-a 6/11/20	AWD4_061520 6/15/20	18CPTMW01DW_061020 6/10/20	18CPTMW01SW_061020 6/10/20	18CPTMW03SW_060920 6/09/20	18CPTMW04_061020 6/10/20	18CPTMW04_061020-a 6/10/20	18CPTMW04SW_061020 6/10/20	18CPTMW06_061020 6/10/20	18CPTMW07_060920 6/09/20	18CPTMW08SW-060920 6/09/20	18CPTMW08DW-060920 6/09/20	18CPTMW10SW_061520 6/15/20	18CPTMW10DW_061520 6/15/20	18CPTMW10DW_061520-a 6/15/20	18CPTMW12SW_060220 6/02/20
Aquifer Zone:			Shallow	Shallow		Shallow	Wilcox	Wilcox	Wilcox	Shallow		Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox		Wilcox
Metals (6020A/7470A)																				
Aluminum	mg/L	100	NA	**0.317**	**0.310**	**14.7**	**0.0260**	**0.0251**	**0.0599**	NA	NA	**0.0272**	**0.0334**	NA	NA	NA	NA	**0.0143**	**0.0160**	**0.0233**
Antimony	mg/L	0.006	NA	< 0.000500 U	< 0.000500 U	**0.000468 J**	**0.000584 J**	< 0.000500 U	**0.000592 J**	NA	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	**0.000459 J**
Arsenic	mg/L	0.01	NA	< 0.000500 U	< 0.000500 U	**0.00281 J**	**0.00106 J**	**0.00682**	**0.00367 J**	NA	NA	**0.00132 J**	**0.00577**	NA	NA	NA	NA	**0.00183 J**	**0.00183 J**	**0.000653 J**
Barium	mg/L	2	NA	**0.0256**	**0.0242**	**0.249**	**0.315**	**0.884**	**0.602**	NA	NA	**0.396**	**1.79**	NA	NA	NA	NA	**0.0742**	**0.0750**	**0.675**
Beryllium	mg/L	0.004	NA	< 0.000500 U	< 0.000500 U	**0.000962 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Cadmium	mg/L	0.005	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	**0.000302 J**	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Calcium	mg/L	NV	NA	**0.507**	**0.512**	**10.1**	**30.6**	**27.1**	**159**	NA	NA	**19.1**	**157**	NA	NA	NA	NA	**6.85**	**6.91**	**51.3**
Chromium	mg/L	0.1	NA	**0.184**	**0.200**	**0.509**	**0.0163**	**0.00436 J**	**0.0179**	NA	NA	**0.0197**	**0.0182**	NA	NA	NA	NA	**0.00294 J**	**0.00257 J**	**0.0266**
Cobalt	mg/L	6.1	NA	**0.00152 J**	**0.00147 J**	**0.0135**	**0.000613 J**	**0.000245 J**	**0.00291 J**	NA	NA	**0.00182 J**	**0.0140**	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	**0.00106 J**
Copper	mg/L	1.3	NA	**0.00271 J**	**0.00214 J**	**0.0214**	**0.00149 J**	< 0.00250 U	**0.00103 J**	NA	NA	< 0.00250 U	**0.00101 J**	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U
Iron	mg/L	NV	NA	**0.834**	**0.887**	**18.9**	**0.812**	**40.4**	**5.81**	NA	NA	**2.03**	**19.4**	NA	NA	NA	NA	**0.786**	**0.777**	**0.265**
Lead	mg/L	0.015	NA	< 0.00100 U	< 0.00100 U	**0.00778**	< 0.00100 U	< 0.00100 U	**0.00103 J**	NA	NA	< 0.00100 U	< 0.00100 U	NA	NA	NA	NA	< 0.00100 U	< 0.00100 U	< 0.00100 U
Magnesium	mg/L	NV	NA	**0.358**	**0.352**	**4.68**	**11**	**17.8**	**16.3**	NA	NA	**15.4**	**31**	NA	NA	NA	NA	**4.01**	**3.86**	**33.8**
Manganese	mg/L	1.1*	NA	**0.0165**	**0.0165**	**0.0965**	**0.0814**	**0.485**	**0.649**	NA	NA	**0.117**	**0.915**	NA	NA	NA	NA	**0.0151**	**0.0145**	**0.122**
Nickel	mg/L	0.49*	NA	**0.0205**	**0.0209**	**0.550**	**0.00348 J**	**0.000856 J**	**0.00465 J**	NA	NA	**0.00110 J**	**0.00850**	NA	NA	NA	NA	**0.000692 J**	**0.000657 J**	**0.00147 J**
Potassium	mg/L	NV	NA	**0.455**	**0.455**	**1.08**	**70.8**	**12.5**	**87**	NA	NA	**137**	**57.3**	NA	NA	NA	NA	**78.7**	**77.8**	**98.4**
Selenium	mg/L	0.05	NA	**0.00402 J**	**0.00416 J**	**0.00290 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U	< 0.00250 U	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U
Silver	mg/L	0.51	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Sodium	mg/L	NV	NA	**21.9**	**21.5**	**53.2**	**371**	**92**	**192**	NA	NA	**137**	**152**	NA	NA	NA	NA	**168**	**167**	**219**
Thallium	mg/L	0.002	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	NA	**0.00325 J**	**0.00369 J**	**0.0295**	< 0.00100 U	< 0.00100 U	< 0.00100 U	NA	NA	< 0.00100 U	< 0.00100 U	NA	NA	NA	NA	< 0.00100 U	< 0.00100 U	**0.000625 J**
Zinc	mg/L	31	NA	**0.00252 J**	**0.00202 J**	**0.0533**	**0.00358 J**	**0.00503**	**0.0150**	NA	NA	**0.00536**	**0.0152**	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U	**0.00374 J**
Mercury	mg/L	0.002	NA	< 0.000100 U	< 0.000100 U	**0.0000490 J**	< 0.000100 U	< 0.000100 U	< 0.000100 U	NA	NA	< 0.000100 U	< 0.000100 U	NA	NA	NA	NA	< 0.000100 U	< 0.000100 U	< 0.000100 U
1,4-Dioxane (8270D SIM)																				
1,4-Dioxane	µg/L	9.1	**0.88**	NA	NA	**0.11**	**0.22**	**0.23**	**0.15**	**1.9**	**2.9**	**0.25**	**0.19**	**0.2**	**0.68**	**0.28**	**0.092**	NA	NA	**0.99**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

***The large perchlorate amount is due to a 20,000X dilution

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	18CPTMW12DW_060220 6/02/20	18CPTMW14_060420 6/04/20	18CPTMW15_061620 6/16/20	18CPTMW16_061720 6/17/20	18CPTMW18_060920 6/09/20	18CPTMW19_060320 6/03/20	18CPTMW19_060320-a 6/03/20	18CPTMW19SW_060320 6/03/20	18CPTMW22R_060120 6/01/20	18CPTMW22SW_060120 6/01/20	18CPTMW22DW_060120 6/01/20	18CPTMW23_060220 6/02/20	18CPTMW23SW_060220 6/02/20	18CPTMW24_060420 6/04/20	18CPTMW26SW_060120 6/01/20	17WW08_061520 6/15/20	18WW02_061520 6/15/20
Aquifer Zone:			Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow		Wilcox	Shallow	Wilcox	Wilcox	Wilcox	Wilcox	Shallow	Wilcox	Shallow	Wilcox
Lab Package:			HS20060135-02	HS20060251-01	HS20060898-02	HS20060898-03	HS20060498-07	HS20060202-03	HS20060202-04	HS20060202-05	HS20060133-04	HS20060133-01	HS20060133-03	HS20060135-06	HS20060135-05	HS20060251-02	HS20060133-05	HS20060849-01	HS20060849-06
Well Identification:			18CPTMW12DW	18CPTMW14	18CPTMW15	18CPTMW16	18CPTMW18	18CPTMW19	18CPTMW19	18CPTMW19SW	18CPTMW22R	18CPTMW22SW	18CPTMW22DW	18CPTMW23	18CPTMW23SW	18CPTMW24	18CPTMW26SW	17WW08	18WW02
Perchlorate (6850)																			
Perchlorate	µg/L	17*	**0.795**	**1,660**	**274**	< 0.0500 U	**0.206**	**16.6**	**17.8**	**45.5**	< 0.0500 U	**383**	< 0.0500 U	**732**	< 0.0500 U	**5.86**	< 0.0500 U	**0.0450 J**	< 0.0500 U
Volatile Organic Compounds (8260C)																			
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloroethene	µg/L	7	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**4.7 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 UJ	< 1.0 UJ	< 1.0 U	NA	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 0.5 U	< 0.5 UJ	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dibromoethane	µg/L	0.05	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	< 0.5 U	**3.0**	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**120**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	µg/L	61,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
4-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Acetone	µg/L	92,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	µg/L	5	< 0.5 U	**2.2**	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromobenzene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	µg/L	4.6	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	µg/L	41,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	µg/L	1,000	< 0.5 U	**8.9**	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**3.1 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	µg/L	220	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,2-Dichloroethene	µg/L	70	< 0.5 U	**51**	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**120**	< 0.5 U	**25**	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,3-Dichloropropene	µg/L	5.3	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromomethane	µg/L	380	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	µg/L	2,000	< 1.0 UJ	< 1.0 UJ	< 1.0 U	NA	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
n-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	< 1.0 U	**1.4**	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	µg/L	1,000	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,2-Dichloroethene	µg/L	100	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**2.0 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	µg/L	29	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichloroethene	µg/L	5	< 0.5 U	**840**	**2.4**	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**2,300**	< 0.5 U	**8.4**	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	µg/L	2	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**2.1 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	18CPTMW12DW_060220 6/02/20	18CPTMW14_060420 6/04/20	18CPTMW15_061620 6/16/20	18CPTMW16_061720 6/17/20	18CPTMW18_060920 6/09/20	18CPTMW19_060320 6/03/20	18CPTMW19_060320-a 6/03/20	18CPTMW19SW_060320 6/03/20	18CPTMW22R_060120 6/01/20	18CPTMW22SW_060120 6/01/20	18CPTMW22DW_060120 6/01/20	18CPTMW23_060220 6/02/20	18CPTMW23SW_060220 6/02/20	18CPTMW24_060420 6/04/20	18CPTMW26SW_060120 6/01/20	17WW08_061520 6/15/20	18WW02_061520 6/15/20
Aquifer Zone:			Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow		Wilcox	Shallow	Wilcox	Wilcox	Shallow	Wilcox	Shallow	Wilcox	Shallow	Wilcox
Metals (6020A/7470A)																			
Aluminum	mg/L	100	**0.0103**	**0.393**	NA	NA	**0.0185**	NA	NA	**0.0447**	**0.566**	**0.187**	**0.0421**	NA	NA	NA	NA	**0.0420 J**	**0.294**
Antimony	mg/L	0.006	**0.000421 J**	< 0.000500 U	NA	NA	**0.000671 J**	NA	NA	**0.000556 J**	**0.00185 J**	**0.000475 J**	< 0.000500 U	NA	NA	NA	NA	**0.000444 J**	**0.000570 J**
Arsenic	mg/L	0.01	**0.00349 J**	**0.00168 J**	NA	NA	**0.000889 J**	NA	NA	**0.00368 J**	**0.000807 J**	**0.00286 J**	**0.00396 J**	NA	NA	NA	NA	**0.00667**	**0.000581 J**
Barium	mg/L	2	**0.103**	**6.90**	NA	NA	**0.669**	NA	NA	**0.156**	**0.0211**	**0.0520**	**0.0880**	NA	NA	NA	NA	**0.540**	**0.0397**
Beryllium	mg/L	0.004	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	**0.000307 J**	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U
Cadmium	mg/L	0.005	< 0.000500 U	**0.000307 J**	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U
Calcium	mg/L	NV	**7.48**	**459**	NA	NA	**261**	NA	NA	**9.32**	**0.293 J**	**9.29**	**11**	NA	NA	NA	NA	**129**	**6.64**
Chromium	mg/L	0.1	**0.00413 J**	**0.00994**	NA	NA	**0.00191 J**	NA	NA	**0.00118 J**	**0.000618 J**	**0.0382**	< 0.000500 U	NA	NA	NA	NA	**0.671**	**0.0124**
Cobalt	mg/L	6.1	< 0.000500 U	**0.0146**	NA	NA	**0.0131**	NA	NA	**0.00709**	**0.00292 J**	< 0.000500 U	**0.000132 J**	NA	NA	NA	NA	**0.0144**	**0.000331 J**
Copper	mg/L	1.3	< 0.00250 U	**0.00129 J**	NA	NA	< 0.00250 U	NA	NA	**0.00126 J**	< 0.00250 U	**0.00134 J**	< 0.00250 U	NA	NA	NA	NA	**0.0125**	**0.00472 J**
Iron	mg/L	NV	**0.900**	**2.16**	NA	NA	**0.729**	NA	NA	**11.3**	**0.600**	**0.0540 J**	**1.31**	NA	NA	NA	NA	**27.9**	**1.59**
Lead	mg/L	0.015	< 0.00100 U	< 0.00100 U	NA	NA	< 0.00100 U	NA	NA	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	NA	NA	NA	NA	< 0.00100 U	**0.000635 J**
Magnesium	mg/L	NV	**4.19**	**160**	NA	NA	**187**	NA	NA	**5.11**	**0.327**	**0.292**	**5.39**	NA	NA	NA	NA	**83.9**	**1.23**
Manganese	mg/L	1.1*	**0.0266**	**0.785**	NA	NA	**2.03**	NA	NA	**0.393**	**0.0266**	**0.00768**	**0.0401**	NA	NA	NA	NA	**1.47**	**0.0857**
Nickel	mg/L	0.49*	< 0.00100 U	**0.00820**	NA	NA	**0.0131**	NA	NA	**0.00192 J**	**0.00190 J**	**0.00101 J**	**0.00120 J**	NA	NA	NA	NA	**0.412**	**0.0104**
Potassium	mg/L	NV	**77**	**15.3**	NA	NA	**3.07**	NA	NA	**1.29**	**0.139 J**	**238**	**2.39**	NA	NA	NA	NA	**2.13**	**1.80**
Selenium	mg/L	0.05	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U
Silver	mg/L	0.51	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.00500 U
Sodium	mg/L	NV	**151**	**583**	NA	NA	**696**	NA	NA	**25.9**	**16.7**	**217**	**211**	NA	NA	NA	NA	**518**	**24**
Thallium	mg/L	0.002	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	**0.000623 J**	**0.000256 J**	< 0.000500 U	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	< 0.00100 U	**0.00167 J**	NA	NA	< 0.00100 U	NA	NA	**0.00123 J**	**0.00195 J**	**0.00764**	**0.00133 J**	NA	NA	NA	NA	**0.00188 J**	**0.00196 J**
Zinc	mg/L	31	**0.00502**	**0.00769**	NA	NA	**0.0149**	NA	NA	**0.0160**	**0.00452 J**	**0.00449 J**	**0.00342 J**	NA	NA	NA	NA	**0.0119**	**0.00405 J**
Mercury	mg/L	0.002	< 0.000100 U	< 0.000100 U	NA	NA	< 0.000100 U	NA	NA	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	NA	NA	NA	NA	< 0.000100 U	< 0.000100 U
1,4-Dioxane (8270D SIM)																			
1,4-Dioxane	µg/L	9.1	**2.7**	**2.30**	**0.09**	**0.080**	**0.220**	**1.20**	**1.40**	**0.91**	**0.44**	**2.5**	**0.92**	**16**	**1.3**	**0.96**	**1.20**	NA	**0.11**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

***The large perchlorate amount is due to a 20,000X dilution

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	18WW03_061120 6/11/20	18WW03_061120_a 6/11/20	18WW06_061520 6/15/20	18WW08_060320 6/03/20	18WW09_060320 6/03/20	18WW10_060420 6/04/20	18WW14_060220 6/02/20	18WW16_061520 6/15/20	18WW17_061520 6/15/20	18WW18_061520 6/15/20	18WW19_060320 6/3/20	18WW20_060320 6/3/20	18WW22_060120 6/021/20	18WW24_060220 6/02/20	18WW25_060420 6/04/20	C01_060920 6/09/20	C02_060420 6/04/20	C03_060920 6/09/20
Aquifer Zone:			Wilcox		Wilcox	Shallow	Wilcox	Shallow	Shallow	Shallow	Shallow	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Wilcox	Shallow	Wilcox
Lab Package:			HS20060659-08	HS20060659-09	HS20060849-05	HS20060202-06	HS20060202-07	HS20060251-04	HS20060135-08	HS20060849-11	HS20060849-09	HS20060849-08	HS20060202-01	HS20060202-02	HS20060133-07	HS20060135-07	HS20060251-03	HS20060498-05	HS20060251-06	HS20060498-08
Well Identification:			18WW03	18WW03	18WW06	18WW08	18WW09	18WW10	18WW14	18WW16	18WW17	18WW18	18WW19	18WW20	18WW22	18WW24	18WW25	C-01	C-02	C-03
Perchlorate (6850)																				
Perchlorate	µg/L	17*	**0.11 J**	**38.2 J**	< 0.0500 U	**0.425**	< 0.0500 U	**0.0904 J**	**2.79**	**5.32**	**763,000*** **	< 0.0500 U	< 0.0500 U	< 0.0500 U	**0.364**	< 0.0500 U	< 0.0500 U	**0.887**	< 0.0500 U	**141**
Volatile Organic Compounds (8260C)																				
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloroethene	µg/L	7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	NA	< 1.0 UJ	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 UJ
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 UJ	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 UJ	< 0.5 U
1,2-Dibromoethane	µg/L	0.05	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	µg/L	61,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
4-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	NA	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Acetone	µg/L	92,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	µg/L	5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromobenzene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	µg/L	4.6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	µg/L	41,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	µg/L	1,000	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	µg/L	220	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,2-Dichloroethene	µg/L	70	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	**0.98 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,3-Dichloropropene	µg/L	5.3	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromomethane	µg/L	380	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 UJ
Isopropylbenzene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	NA	< 1.0 UJ	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 U
n-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	µg/L	1,000	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,2-Dichloroethene	µg/L	100	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	µg/L	29	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichloroethene	µg/L	5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	**40**	< 0.5 U	< 0.5 U	**0.60 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	µg/L	2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	NA	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	18WW03_061120 6/11/20	18WW03_061120_a 6/11/20	18WW06_061520 6/15/20	18WW08_060320 6/03/20	18WW09_060320 6/03/20	18WW10_060420 6/04/20	18WW14_060220 6/02/20	18WW16_061520 6/15/20	18WW17_061520 6/15/20	18WW18_061520 6/15/20	18WW19_060320 6/3/20	18WW20_060320 6/3/20	18WW22_060120 6/021/20	18WW24_060220 6/02/20	18WW25_060420 6/04/20	C01_060920 6/09/20	C02_060420 6/04/20	C03_060920 6/09/20
Aquifer Zone:			**Wilcox**		**Wilcox**	**Shallow**	**Wilcox**	**Shallow**	**Shallow**	**Shallow**	**Shallow**	**Wilcox**	**Wilcox**	**Shallow**	**Shallow**	**Shallow**	**Shallow**	**Wilcox**	**Shallow**	**Wilcox**
Metals (6020A/7470A)																				
Aluminum	mg/L	100	**0.0111**	**0.0104**	NA	NA	**0.300**	NA	**0.0545**	**0.235**	**0.0125**	**0.0280**	**0.187 J**	**0.0328**	**0.123**	**0.0819**	**0.0713**	NA	NA	**0.0149**
Antimony	mg/L	0.006	< 0.000500 U	< 0.000500 U	NA	NA	**0.000536 J**	NA	< 0.000500 U	**0.00113 J**	< 0.00100 U	< 0.00100 U	< 0.000500 U	**0.00107 J**	**0.000775 J**	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U
Arsenic	mg/L	0.01	**0.000741 J**	**0.000575 J**	NA	NA	**0.00835**	NA	**0.000746 J**	**0.00162 J**	**0.000623 J**	**0.00437 J**	**0.000580 J**	**0.000435 J**	**0.00150 J**	**0.000639 J**	**0.00873**	NA	NA	**0.00170 J**
Barium	mg/L	2	**0.207**	**0.196**	NA	NA	**0.274**	NA	**0.984**	**0.119**	**3.32**	**1.21**	**0.124**	**0.0909**	**0.0721**	**0.0491**	**0.379**	NA	NA	**1.25**
Beryllium	mg/L	0.004	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	**0.00140 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000664 J**	< 0.000500 U	NA	NA	< 0.000500 U
Cadmium	mg/L	0.005	< 0.000500 U	< 0.000500 U	NA	NA	**0.000745 J**	NA	**0.000524 J**	**0.00448**	**0.000346 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U
Calcium	mg/L	NV	**8.97**	**8.58**	NA	NA	**18.5**	NA	**43.3**	**198**	**334**	**55.4**	**6.19**	**2.73**	**11.1**	**39.3**	**17.7**	NA	NA	**44.3**
Chromium	mg/L	0.1	**0.00226 J**	**0.00181 J**	NA	NA	**0.0851**	NA	**0.598**	**2.58**	**0.212**	**0.0622**	**0.0119**	**0.00157 J**	**0.0154**	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U
Cobalt	mg/L	6.1	< 0.000500 U	< 0.000500 U	NA	NA	**0.00146 J**	NA	**0.00311 J**	**0.209**	**0.00248 J**	**0.000192 J**	**0.000522 J**	**0.00453 J**	**0.000179 J**	**0.00203 J**	**0.00199 J**	NA	NA	**0.000124 J**
Copper	mg/L	1.3	< 0.00250 U	< 0.00250 U	NA	NA	**0.00443 J**	NA	**0.00780**	**0.224**	**0.00928**	**0.00123 J**	**0.00134 J**	**0.00118 J**	< 0.00250 U	< 0.00250 U	**0.00158 J**	NA	NA	< 0.00250 U
Iron	mg/L	NV	**9.51**	**8.05**	NA	NA	**48.9**	NA	**3.26**	**17.3**	**1.07**	**109**	**17.7**	**7.86**	**0.0349 J**	**0.0867 J**	**47**	NA	NA	**68.4**
Lead	mg/L	0.015	< 0.00100 U	< 0.00100 U	NA	NA	**0.000935 J**	NA	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	NA	NA	< 0.00100 U
Magnesium	mg/L	NV	**6.17**	**5.93**	NA	NA	**10.4**	NA	**33.2**	**147**	**215**	**34.3**	**3.31**	**1.87**	**2.03**	**33.4**	**11**	NA	NA	**24.2**
Manganese	mg/L	1.1*	**0.0824**	**0.0773**	NA	NA	**0.881**	NA	**0.244**	**2.05**	**0.0531**	**2.07**	**0.327**	**0.269**	**0.00171 J**	**0.433**	**2.54**	NA	NA	**1.22**
Nickel	mg/L	0.49*	**0.000911 J**	**0.000878 J**	NA	NA	**0.0339**	NA	**0.253**	**8.37**	**0.189**	**0.00590**	**0.00613**	**0.00525**	< 0.00100 U	**0.0555**	**0.00130 J**	NA	NA	< 0.00100 U
Potassium	mg/L	NV	**1.93**	**1.86**	NA	NA	**2.58**	NA	**3.79**	**3.88**	**1.49**	**3.42**	**2.01**	**1.24**	**3.69**	**0.501**	**1.27**	NA	NA	**3.21**
Selenium	mg/L	0.05	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U	NA	**0.00145 J**	**0.0157**	**0.00395 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	**0.00117 J**	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U
Silver	mg/L	0.51	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U
Sodium	mg/L	NV	**110**	**106**	NA	NA	**46.7**	NA	**117**	**585**	**1,140**	**143**	**22.2**	**24.7**	**30.9**	**513**	**38.1**	NA	NA	**144**
Thallium	mg/L	0.002	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U
Vanadium	mg/L	0.72	**0.000664 J**	**0.00119 J**	NA	NA	**0.00423 J**	NA	**0.00347 J**	**0.0111**	**0.00264 J**	**0.000638 J**	**0.00206 J**	**0.00148 J**	**0.0157**	< 0.00100 U	< 0.00100 U	NA	NA	< 0.00100 U
Zinc	mg/L	31	< 0.00250 U	< 0.00250 U	NA	NA	**0.0127**	NA	**0.0121**	**0.103**	**0.0278**	**0.00363 J**	**0.00605**	**0.0102**	< 0.00250 U	**0.0442**	**0.00596**	NA	NA	**0.00627**
Mercury	mg/L	0.002	< 0.000100 U	< 0.000100 U	NA	NA	< 0.000100 U	NA	**0.0000340 J**	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	**0.0000320 J**	< 0.000100 U	NA	NA	< 0.000100 U
1,4-Dioxane (8270D SIM)																				
1,4-Dioxane	µg/L	9.1	**0.19**	**0.17**	**0.087**	**2.0**	**0.60**	**0.68**	NA	NA	NA	< 0.010 U	NA	**1.70**	**0.630**	NA	**1.6**	NA	NA	**0.290**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

***The large perchlorate amount is due to a 20,000X dilution

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	C04_060120 6/01/20	C04_060120-a 6/01/20	C06_060320 6/03/20	C08_061120 6/11/20	C09_060320 6/03/20	MW1_061120 6/11/20	MW2_061020 6/10/20	MW2_061020_a 6/10/20	MW3_061020 6/10/20	MW5_060920 6/09/20	MW6_061120 6/11/20	MW7_060220 6/02/20	MW8_060120 6/01/20	MW9_060220 6/02/20	MW10_061020 6/10/20	MW12_061120 6/11/20	MW13_060420 6/04/20	MW14_060320 6/03/20
Aquifer Zone:			Wilcox		Shallow	Shallow	Shallow	Shallow	Shallow		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Wilcox
Lab Package:			HS20060133-08	HS20060133-09	HS20060202-09	HS20060659-10	HS20060202-08	HS20060659-04	HS20060545-01	HS20060545-02	HS20060547-04	HS20060498-01	HS20060659-05	HS20060135-03	HS20060133-06	HS20060135-04	HS20060547-06	HS20060659-01	HS20060251-05	HS20060208-04
Well Identification:			C-04	C-04	C-06	C-08	C-09	MW-1	MW-2	MW-2	MW-3	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-12	MW-13	MW-14
Perchlorate (6850)																				
Perchlorate	µg/L	17*	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U	**2,350**	< 0.0500 U	< 0.0500 U	**13,100**	**23,900**	**3,890**	**20,300**	**2,150**	**584**	**0.156**	< 0.0500 U	**0.0719 J**	**158,000**
Volatile Organic Compounds (8260C)																				
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,1,1-Trichloroethane	µg/L	200	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	**14 J**	**16 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,1-Dichloroethane	µg/L	10,000	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	**43**	**49**	**3.7**	**2.6**	**1.9**	< 2.5 U	< 0.5 U	**0.41 J**	< 0.5 U	**0.58 J**	< 0.5 U	**21**
1,1-Dichloroethene	µg/L	7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	**930**	**1,000**	< 0.5 U	< 0.5 U	< 0.5 U	**7.6**	< 0.5 U	**1.3**	< 0.5 U	**1.1**	< 0.5 U	**80**
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 5.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 UJ	< 10 UJ
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ	< 5.0 UJ
1,2-Dibromoethane	µg/L	0.05	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,2-Dichloroethane	µg/L	5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**1,200**	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	**27**	**1.2**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**73**
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	**0.71 J**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
2,2-Dichloropropane	µg/L	42	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
2-Butanone	µg/L	61,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
2-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
2-Hexanone	µg/L	6,100	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 100 U	< 40 U	< 40 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U
4-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
4-Methyl-2-pentanone	µg/L	8,200	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 100 U	< 40 U	< 40 U	< 2.0 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U
Acetone	µg/L	92,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Benzene	µg/L	5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	**6.4**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
Bromobenzene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Bromochloromethane	µg/L	4,100	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	**190 J**	**100 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
Bromodichloromethane	µg/L	4.6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Carbon disulfide	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	**3.6 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Chloroethane	µg/L	41,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Chloroform	µg/L	1,000	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**59**	**150**	**180**	**1.3**	< 0.5 U	< 0.5 U	**13**	< 0.5 U	**0.83 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
Chloromethane	µg/L	220	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
cis-1,2-Dichloroethene	µg/L	70	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**15,000**	**76,000**	**75,000**	**57**	**9.1**	**6.4**	**19**	**11**	**12**	< 0.5 U	**7.0**	< 0.5 U	**1,500**
cis-1,3-Dichloropropene	µg/L	5.3	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Dibromomethane	µg/L	380	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	**29**	**34**	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Isopropylbenzene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
m,p-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	**15 J**	**18 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Methylene chloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	**290,000**	**280,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Naphthalene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 5.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 UJ	< 10 UJ
n-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
n-Propylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
o-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
tert-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Tetrachloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	**33**	**40**	**1.0**	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Toluene	µg/L	1,000	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	**28**	**30**	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
trans-1,2-Dichloroethene	µg/L	100	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**30 J**	**200**	**230**	**2.2**	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**14**
trans-1,3-Dichloropropene	µg/L	29	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 25 U	< 10 U	< 10 U	< 0.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U
Trichloroethene	µg/L	5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**31,000**	**1,100**	**1,200**	**360**	**38**	**19**	**2,100**	**120**	**710**	**2.7**	**100**	< 0.5 U	**7,700**
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U
Vinyl chloride	µg/L	2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**24 J**	**45**	**46**	**3.9**	**2.6**	**0.94 J**	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	C04_060120 6/01/20	C04_060120-a 6/01/20	C06_060320 6/03/20	C08_061120 6/11/20	C09_060320 6/03/20	MW1_061120 6/11/20	MW2_061020 6/10/20	MW2_061020_a 6/10/20	MW3_061020 6/10/20	MW5_060920 6/09/20	MW6_061120 6/11/20	MW7_060220 6/02/20	MW8_060120 6/01/20	MW9_060220 6/02/20	MW10_061020 6/10/20	MW12_061120 6/11/20	MW13_060420 6/04/20	MW14_060320 6/03/20
Aquifer Zone:			Wilcox		Shallow	Shallow	Shallow	Shallow	Shallow		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Wilcox
Metals (6020A/7470A)																				
Aluminum	mg/L	100	NA	NA	**0.0324**	NA	**0.103**	**0.0296**	NA	NA	**0.00738 J**	NA	**0.0114**	NA	NA	**0.0262**	NA	NA	**0.0585**	**0.0323**
Antimony	mg/L	0.006	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U
Arsenic	mg/L	0.01	NA	NA	**0.00143 J**	NA	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	**0.00118 J**	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	**0.00378 J**
Barium	mg/L	2	NA	NA	**1.05**	NA	**0.559**	**0.496**	NA	NA	**0.376**	NA	**0.611**	NA	NA	**0.0989**	NA	NA	**0.514**	**0.247**
Beryllium	mg/L	0.004	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	**0.000533 J**
Cadmium	mg/L	0.005	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	< 0.0005000 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	**0.000346 J**	**0.000906 J**
Calcium	mg/L	NV	NA	NA	**19.8**	NA	**136**	**21.8**	NA	NA	**26.8**	NA	**24.5**	NA	NA	**12.8**	NA	NA	**25.6**	**107**
Chromium	mg/L	0.1	NA	NA	**0.000421 J**	NA	**0.0571**	**0.300**	NA	NA	**0.0118**	NA	**0.125**	NA	NA	**0.154**	NA	NA	**0.0377**	**0.0359**
Cobalt	mg/L	6.1	NA	NA	**0.00194 J**	NA	**0.000941 J**	**0.0136**	NA	NA	**0.000529 J**	NA	**0.00144 J**	NA	NA	**0.00167 J**	NA	NA	**0.000534 J**	**0.0343**
Copper	mg/L	1.3	NA	NA	**0.00105 J**	NA	**0.00115 J**	**0.00896**	NA	NA	< 0.00250 U	NA	**0.00265 J**	NA	NA	**0.00114 J**	NA	NA	**0.00320 J**	**0.00219 J**
Iron	mg/L	NV	NA	NA	**63.4**	NA	**0.457**	**3.34**	NA	NA	**0.328**	NA	**1.38**	NA	NA	**1.16**	NA	NA	**82.1**	**102**
Lead	mg/L	0.015	NA	NA	< 0.00100 U	NA	< 0.00100 U	< 0.00100 U	NA	NA	< 0.00100 U	NA	< 0.00100 U	NA	NA	< 0.00100 U	NA	NA	< 0.00100 U	< 0.00100 U
Magnesium	mg/L	NV	NA	NA	**11.6**	NA	**38**	**18.7**	NA	NA	**16.4**	NA	**20.4**	NA	NA	**2.64**	NA	NA	**13.4**	**55.2**
Manganese	mg/L	1.1*	NA	NA	**0.981**	NA	**0.106**	**0.905**	NA	NA	**0.343**	NA	**0.0713**	NA	NA	**0.0492**	NA	NA	**1.32**	**2.55**
Nickel	mg/L	0.49*	NA	NA	**0.00168 J**	NA	**0.0670**	**1.06**	NA	NA	**0.00252 J**	NA	**0.0502**	NA	NA	**0.0829**	NA	NA	**0.0319**	**0.153**
Potassium	mg/L	NV	NA	NA	**3.83**	NA	**0.687**	**2.05**	NA	NA	**1.57**	NA	**1.99**	NA	NA	**0.408**	NA	NA	**3.38**	**11.2**
Selenium	mg/L	0.05	NA	NA	< 0.00250 U	NA	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U	NA	< 0.00250 U	NA	NA	< 0.00250 U	NA	NA	< 0.00250 U	< 0.00250 U
Silver	mg/L	0.51	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U
Sodium	mg/L	NV	NA	NA	**184**	NA	**107**	**160**	NA	NA	**251**	NA	**187**	NA	NA	**14**	NA	NA	**89.2**	**240**
Thallium	mg/L	0.002	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	NA	NA	< 0.00100 U	NA	**0.000737 J**	**0.00351 J**	NA	NA	**0.00117 J**	NA	**0.00265 J**	NA	NA	**0.00297 J**	NA	NA	< 0.00100 U	< 0.00100 U
Zinc	mg/L	31	NA	NA	**0.00959**	NA	**0.00942**	**0.00240 J**	NA	NA	**0.00219 J**	NA	**0.00597**	NA	NA	**0.00526**	NA	NA	**0.00614**	**0.806**
Mercury	mg/L	0.002	NA	NA	< 0.000100 U	NA	< 0.000100 U	< 0.000100 U	NA	NA	< 0.000100 U	NA	< 0.000100 U	NA	NA	< 0.000100 U	NA	NA	< 0.000100 U	< 0.000100 U
1,4-Dioxane (8270D SIM)																				
1,4-Dioxane	µg/L	9.1	NA	NA	NA	**0.21**	NA	NA	**35**	**69**	NA	**0.65**	NA	**30.0**	**1.8**	**2.6**	**0.21**	NA	NA	**950**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

***The large perchlorate amount is due to a 20,000X dilution

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	MW16_060920 6/09/20	MW17_061020 6/10/20	MW18_061020 6/10/20	MW19_061620 6/16/20	MW20_060120 6/01/20	MW21-060920 6/09/20	MW22_061020 6/10/20	MW23_060920 6/09/20	102_060320 6/03/20	109_061020 6/10/20	120_060320 6/03/20	125_061520 6/15/20	126_061120 6/11/20	126_061120-a 6/11/20	129_060320 6/03/20	130_061020 6/10/20	ICT2_063020 6/30/20
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow		Shallow	Shallow	NA
Lab Package:			HS20060498-06	HS20060547-07	HS20060547-08	HS20060898-01	HS20060133-02	HS20060495-03	HS20060545-05	HS20060498-04	HS20060208-01	HS20060547-05	HS20060208-03	HS20060849-10	HS20060659-06	HS20060659-07	HS20060208-02	HS20060547-09	HS20070043-01
Well Identification:			MW-16	MW-17	MW-18	MW-19	MW-20	MW-21	MW-22	MW-23	MW-102	MW-109	MW-120	MW-125	MW-126	MW-126	MW-129	MW-130	ICT-2
Perchlorate (6850)																			
Perchlorate	µg/L	17*	**848**	< 0.0500 U	< 0.0500 U	**0.936**	< 0.0500 U	**33,200**	**493**	**63,100**	**31**	**10,500**	**12,300**	**380**	**1.08 J**	**0.462 J**	**3,180**	**0.517**	**1,740**
Volatile Organic Compounds (8260C)																			
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	**12**	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	**2.2**	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	**0.64 J**	**8.0**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**0.53 J**
1,1-Dichloroethene	µg/L	7	**13**	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	**58**	< 0.5 U	< 0.5 U	< 0.5 U	**0.69 J**	< 0.5 U	**1.7**
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 UJ	NA	< 1.0 UJ	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 UJ	< 1.0 UJ	< 1.0 U	< 5.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 UJ	NA	< 1.0 UJ	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dibromoethane	µg/L	0.05	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	**89**	NA	< 0.5 U	**0.52 J**	< 0.5 U	**44**	**5.7**	**60**	< 0.5 U	< 0.5 U	**15**	< 0.5 U	< 0.5 U	< 0.5 U	**12**	< 0.5 U	**21**
1,2-Dichloropropane	µg/L	5	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	µg/L	61,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
4-Chlorotoluene	µg/L	2,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	< 2.0 U	NA	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 10 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Acetone	µg/L	92,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	µg/L	5	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 5.0 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromobenzene	µg/L	2,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	µg/L	4.6	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromoform	µg/L	36	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	µg/L	140	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon tetrachloride	µg/L	5	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	**4.2 J**	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	µg/L	41,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	µg/L	1,000	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	**11**	**3.0**	**6.9**	< 0.5 U	**0.93 J**	**12**	< 0.5 U	< 0.5 U	< 0.5 U	**2.0**	< 0.5 U	< 0.5 U
Chloromethane	µg/L	220	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,2-Dichloroethene	µg/L	70	**45**	NA	**0.86 J**	**3.7**	< 0.5 U	**150**	**4.4**	**12**	< 0.5 U	**81**	**590**	< 0.5 U	< 0.5 U	< 0.5 U	**3.0**	< 0.5 U	**73**
cis-1,3-Dichloropropene	µg/L	5.3	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dibromochloromethane	µg/L	34	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromomethane	µg/L	380	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	µg/L	700	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	< 1.0 UJ	NA	< 1.0 UJ	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 UJ	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	µg/L	2,000	< 1.0 U	NA	< 1.0 UJ	< 1.0 U	< 1.0 U	< 10 UJ	< 1.0 U	< 5.0 U	< 1.0 UJ	< 1.0 U	< 5.0 UJ	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 U
n-Butylbenzene	µg/L	4,100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
sec-Butylbenzene	µg/L	4,100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene	µg/L	100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	**1.4**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	**0.65 J**	< 5.0 U	< 1.0 U	< 1.0 U	**3.4 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	µg/L	1,000	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,2-Dichloroethene	µg/L	100	**0.98 J**	NA	< 0.5 U	< 0.5 U	< 0.5 U	**6.6 J**	< 0.5 U	< 2.5 U	< 0.5 U	**0.84 J**	**5.1**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**1.1**
trans-1,3-Dichloropropene	µg/L	29	< 0.5 U	NA	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichloroethene	µg/L	5	**1,200**	NA	**15**	**1.2**	< 0.5 U	**7,200**	**400**	**2,300**	< 0.5 U	**310**	**6,100**	< 0.5 U	**0.88 J**	**0.82 J**	**450**	**0.73 J**	**480**
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	µg/L	2	**2.0**	NA	< 0.5 U	< 0.5 U	< 0.5 U	**23**	< 0.5 U	< 2.5 U	< 0.5 U	< 0.5 U	**4.0 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**2.3**

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	MW16_060920 6/09/20	MW17_061020 6/10/20	MW18_061020 6/10/20	MW19_061620 6/16/20	MW20_060120 6/01/20	MW21-060920 6/09/20	MW22_061020 6/10/20	MW23_060920 6/09/20	102_060320 6/03/20	109_061020 6/10/20	120_060320 6/03/20	125_061520 6/15/20	126_061120 6/11/20	126_061120-a 6/11/20	129_060320 6/03/20	130_061020 6/10/20	ICT2_063020 6/30/20
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow		Shallow	Shallow	NA
Metals (6020A/7470A)																			
Aluminum	mg/L	100	NA	NA	NA	**0.731**	**0.0977**	**0.0548**	**0.0119**	NA	**4.29**	NA	NA	**0.0723**	**0.0710 J**	**0.138 J**	**1.38**	**1.11**	**0.102**
Antimony	mg/L	0.006	NA	NA	NA	< 0.00100 U	< 0.000500 U	**0.00128 J**	**0.000559 J**	NA	< 0.000500 U	NA	NA	< 0.00100 U	< 0.000500 U	< 0.000500 U	**0.000844 J**	< 0.000500 U	**0.000861 J**
Arsenic	mg/L	0.01	NA	NA	NA	**0.00601**	< 0.000500 U	**0.000626 J**	**0.000521 J**	NA	**0.00155 J**	NA	NA	< 0.000500 U	**0.00323 J**	**0.00357 J**	**0.000834 J**	**0.00319 J**	**0.00318 J**
Barium	mg/L	2	NA	NA	NA	**0.547**	**0.336**	**8.32**	**1.07**	NA	**0.166**	NA	NA	**0.034**	**7.69**	**9.73**	**0.0934**	**0.163**	**0.137**
Beryllium	mg/L	0.004	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	**0.000696 J**	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U
Cadmium	mg/L	0.005	NA	NA	NA	**0.000316 J**	**0.000278 J**	**0.000811 J**	**0.000403 J**	NA	< 0.000500 U	NA	NA	< 0.000500 U	**0.000234 J**	**0.000233 J**	< 0.000500 U	**0.000248 J**	< 0.000500 U
Calcium	mg/L	NV	NA	NA	NA	**126**	**34.5**	**208**	**116**	NA	**2.44**	NA	NA	**0.828**	**243**	**326**	**3.33**	**31.2**	**15.8**
Chromium	mg/L	0.1	NA	NA	NA	**0.0358**	**0.00543**	**2.22**	**0.115**	NA	**0.00579**	NA	NA	**0.00364 J**	**0.000862 J**	**0.000671 J**	**0.00413 J**	**0.00231 J**	**0.00230 J**
Cobalt	mg/L	6.1	NA	NA	NA	**0.00846**	**0.00513**	**0.116**	**0.0105**	NA	**0.00443 J**	NA	NA	< 0.000500 U	**0.0122**	**0.0157**	**0.00238 J**	**0.0161**	**0.00749**
Copper	mg/L	1.3	NA	NA	NA	**0.00362 J**	**0.00166 J**	**0.0784**	**0.00297 J**	NA	**0.00701**	NA	NA	< 0.00250 U	< 0.00250 U	**0.0209**	**0.00293 J**	**0.00183 J**	**0.0204**
Iron	mg/L	NV	NA	NA	NA	**94.6**	**0.656**	**27.7**	**1.15**	NA	**6.79**	NA	NA	**0.0870 J**	**2.89**	**3.24**	**1.80**	**3.27**	**4.34**
Lead	mg/L	0.015	NA	NA	NA	**0.000683 J**	< 0.00100 U	**0.000858 J**	< 0.00100 U	NA	**0.00583**	NA	NA	< 0.00100 U	< 0.00100 U	**0.00102 J**	**0.00163 J**	**0.00143 J**	< 0.00100 U
Magnesium	mg/L	NV	NA	NA	NA	**71.3**	**9.68**	**168**	**34.4**	NA	**2.50**	NA	NA	**0.637**	**194**	**251**	**2.39**	**20.9**	**16.8**
Manganese	mg/L	1.1*	NA	NA	NA	**2.66**	**0.175**	**2.53**	**0.273**	NA	**0.0508**	NA	NA	**0.00396 J**	**0.207 J**	**0.404 J**	**0.0464**	**1.14**	**0.285**
Nickel	mg/L	0.49*	NA	NA	NA	**0.0465**	**0.388**	**2.34**	**0.425**	NA	**0.0131**	NA	NA	**0.000998 J**	**0.0122 J**	**0.0561 J**	**0.00357 J**	**0.00693**	**0.00819**
Potassium	mg/L	NV	NA	NA	NA	**4.79**	**0.646**	**2.65**	**1.90**	NA	**1.10**	NA	NA	**0.154 J**	**3.36**	**3.69**	**0.330**	**1.03**	**1.34**
Selenium	mg/L	0.05	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	**0.00206 J**	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	**0.00200 J**	< 0.00250 U	< 0.00250 U
Silver	mg/L	0.51	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U
Sodium	mg/L	NV	NA	NA	NA	**1,030**	**43.1**	**482**	**346**	NA	**21.7**	NA	NA	**25.9**	**676**	**881**	**55.8**	**402**	**131**
Thallium	mg/L	0.002	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	NA	NA	NA	**0.00204 J**	**0.000613 J**	**0.00624**	< 0.00100 U	NA	**0.0119**	NA	NA	**0.00126 J**	**0.00102 J**	**0.00124 J**	**0.00415 J**	**0.00300 J**	**0.00134 J**
Zinc	mg/L	31	NA	NA	NA	**0.00900**	**0.00453 J**	**0.0338**	**0.00297 J**	NA	**0.0394**	NA	NA	**0.00221 J**	**0.0235 J**	**0.547 J**	**0.0162**	**0.00870**	**0.0485**
Mercury	mg/L	0.002	NA	NA	NA	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	NA	**0.0000490 J**	NA	NA	< 0.000100 U	**0.0000330 J**	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U
1,4-Dioxane (8270D SIM)																			
1,4-Dioxane	µg/L	9.1	**8.1**	**0.28**	NA	NA	NA	**0.36**	NA	NA	NA	**0.870**	**52.0**	< 0.010 U	**0.26**	**0.24**	**3.3**	NA	NA

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

***The large perchlorate amount is due to a 20,000X dilution

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	ICT4_063020 6/30/20	ICT4_063020-a 6/30/20	ICT7_063020 6/30/20	ICT8_063020 6/30/20	ICT8_063020-a 6/30/20	ICT11_063020 6/30/20	ICT12B_063020 6/30/20	ICT12C_063020 6/30/20	ICT12D_063020 6/30/20	ICT12E_063020 6/30/20	ICT13A_063020 6/30/20	ICT13B_063020 6/30/20	ICT13D_063020 6/30/20	ICT13E_063020 6/30/20	ICT13F_063020 6/30/20	ICT14B_063020 6/30/20	ICT14C_063020 6/30/20	ICT14D_063020 6/30/20
Aquifer Zone:			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab Package:			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
Well Identification:			ICT-4	ICT-4	ICT-7	ICT-8	ICT-8	ICT-11	ICT-12B	ICT-12C	ICT-12D	ICT-12E	ICT-13A	ICT-13B	ICT-13D	ICT-13E	ICT-13F	ICT-14B	ICT-14C	ICT-14D
Perchlorate (6850)																				
Perchlorate	µg/L	17*	4,970	4,890	378	519	529	4,200	76,100	15,100	369	21,400	13,300	185	53.6	108	0.12	2,830	9.17	3,260
Volatile Organic Compounds (8260C)																				
1,1,1,2-Tetrachloroethane	µg/L	110	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,1,1-Trichloroethane	µg/L	200	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,1,2-Trichloroethane	µg/L	5	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	**11 J**
1,1-Dichloroethane	µg/L	10,000	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	**28 J**	**130**	**12**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**0.66 J**	**6.6 J**	**14 J**
1,1-Dichloroethene	µg/L	7	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	**16**	**6.2 J**	< 10 U	**920**	**32**	**1.5**	< 0.5 U	< 0.5 U	< 0.5 U	**1.6**	**68**	< 10 U
1,1-Dichloropropene	µg/L	2.9	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,2,3-Trichlorobenzene	µg/L	310	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,2,3-Trichloropropane	µg/L	0.041	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,2,4-Trichlorobenzene	µg/L	70	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
1,2-Dibromoethane	µg/L	0.05	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
1,2-Dichlorobenzene	µg/L	600	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,2-Dichloroethane	µg/L	5	**130**	**110**	< 0.5 U	**70**	**90**	**1.8**	**44**	**56 J**	**240 J**	**190**	**68**	**44**	< 0.5 U	**0.51 J**	< 0.5 U	< 0.5 U	< 5.0 U	**27 J**
1,2-Dichloropropane	µg/L	5	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,3-Dichlorobenzene	µg/L	3,100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,3-Dichloropropane	µg/L	29	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
1,4-Dichlorobenzene	µg/L	75	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
2,2-Dichloropropane	µg/L	42	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
2-Butanone	µg/L	61,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
2-Chlorotoluene	µg/L	2,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
2-Hexanone	µg/L	6,100	< 20 U	< 20 U	< 2.0 U	< 100 U	< 100 U	< 2.0 U	< 20 U	< 20 U	< 40 U	< 100 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 40 U
4-Chlorotoluene	µg/L	2,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
4-Isopropyltoluene	µg/L	10,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
4-Methyl-2-pentanone	µg/L	8,200	< 20 U	< 20 U	< 2.0 U	< 100 U	< 100 U	< 2.0 U	< 20 U	< 20 U	< 40 U	< 100 U	< 20 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 40 U
Acetone	µg/L	92,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	**1,100**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ	< 10 U	< 20 U
Benzene	µg/L	5	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
Bromobenzene	µg/L	2,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Bromochloromethane	µg/L	4,100	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	**32 J**	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	**160**	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
Bromodichloromethane	µg/L	4.6	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
Bromoform	µg/L	36	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Bromomethane	µg/L	140	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Carbon disulfide	µg/L	10,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Carbon tetrachloride	µg/L	5	**14**	**15**	< 1.0 U	< 50 U	< 50 U	**1.5**	**47**	**9.3 J**	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Chlorobenzene	µg/L	100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Chloroethane	µg/L	41,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Chloroform	µg/L	1,000	**9.5 J**	**9.6 J**	< 0.5 U	< 25 U	< 25 U	**1.6**	**48**	**16 J**	**19 J**	**120**	**10**	**0.82 J**	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	**15**	**20 J**
Chloromethane	µg/L	220	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
cis-1,2-Dichloroethene	µg/L	70	**1,000**	**960**	< 0.5 U	**8,300**	**9,300**	**95**	**80**	**210 J**	**11,000 J**	**14,000**	**640**	**120**	**1.8**	**23**	< 0.5 U	**15 J**	**3,400**	**7,500**
cis-1,3-Dichloropropene	µg/L	5.3	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
Dibromochloromethane	µg/L	34	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Dibromomethane	µg/L	380	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
Dichlorodifluoromethane	µg/L	20,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Ethylbenzene	µg/L	700	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Hexachlorobutadiene	µg/L	20	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 UJ
Isopropylbenzene	µg/L	10,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
m,p-Xylene	µg/L	10,000**	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Methylene chloride	µg/L	5	< 10 U	< 10 U	< 1.0 U	**26,000 J**	**41,000 J**	< 1.0 U	< 10 U	< 10 U	< 20 U	**48,000 J**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	**5,900 J**
Naphthalene	µg/L	2,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
n-Butylbenzene	µg/L	4,100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
n-Propylbenzene	µg/L	4,100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
o-Xylene	µg/L	10,000**	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
sec-Butylbenzene	µg/L	4,100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Styrene	µg/L	100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	**35 J**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
tert-Butylbenzene	µg/L	4,100	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Tetrachloroethene	µg/L	5	< 10 U	< 10 U	< 1.0 U	**220**	**180**	< 1.0 U	< 10 U	< 10 U	**15 J**	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	**13 J**
Toluene	µg/L	1,000	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	**46 J**	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
trans-1,2-Dichloroethene	µg/L	100	**5.9 J**	**5.0 J**	< 0.5 U	**24 J**	**28 J**	**0.50 J**	< 5.0 U	< 5.0 U	**14 J**	**50**	**4.2 J**	**0.77 J**	< 0.5 U	< 0.5 U	< 0.5 U	**0.42 J**	**23**	**29 J**
trans-1,3-Dichloropropene	µg/L	29	< 5.0 U	< 5.0 U	< 0.5 U	< 25 U	< 25 U	< 0.5 U	< 5.0 U	< 5.0 U	< 10 U	< 25 U	< 5.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.0 U	< 10 U
Trichloroethene	µg/L	5	**4,900**	**4,700**	**1.4**	**7,200**	**7,300**	**710**	**8,600**	**5,700**	**13,000**	**74,000**	**6,900**	**910**	**19**	**72**	< 0.5 U	**78 J**	**1,600**	**4,900**
Trichlorofluoromethane	µg/L	31,000	< 10 U	< 10 U	< 1.0 U	< 50 U	< 50 U	< 1.0 U	< 10 U	< 10 U	< 20 U	< 50 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 20 U
Vinyl chloride	µg/L	2	**10**	**10**	< 0.5 U	**84**	**99**	**0.60 J**	< 5.0 U	**4.4 J**	**270 J**	**950**	**15**	**1.2**	< 0.5 U	< 0.5 U	< 0.5 U	**0.70 J**	**1,800**	**150 J**

Table 6. LHAAP-18/24 Analytical Results - June 2020

Location Identification and Sample Date:	Units	MCL/MSC/PCL	ICT4_063020 6/30/20	ICT4_063020-a 6/30/20	ICT7_063020 6/30/20	ICT8_063020 6/30/20	ICT8_063020-a 6/30/20	ICT11_063020 6/30/20	ICT12B_063020 6/30/20	ICT12C_063020 6/30/20	ICT12D_063020 6/30/20	ICT12E_063020 6/30/20	ICT13A_063020 6/30/20	ICT13B_063020 6/30/20	ICT13D_063020 6/30/20	ICT13E_063020 6/30/20	ICT13F_063020 6/30/20	ICT14B_063020 6/30/20	ICT14C_063020 6/30/20	ICT14D_063020 6/30/20
Aquifer Zone:			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (6020A/7470A)																				
Aluminum	mg/L	100	0.00743 UB	0.00754 UB	**2.54**	**0.0479**	**0.0455**	0.0132 UB	**0.0369**	**0.140**	0.0138 UB	**0.106**	0.0173 UB	0.00717 UB	**0.121**	**4.56**	**3.71**	0.0166 UB	**0.0407**	0.0146 UB
Antimony	mg/L	0.006	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	**0.000751 J**	< 0.00100 U	**0.00108 J**	< 0.00100 U	**0.000553 J**	< 0.00100 UJ
Arsenic	mg/L	0.01	< 0.00100 U	**0.000409 J**	**0.000833 J**	**0.00167 J**	**0.00155 J**	**0.000431 J**	**0.000554 J**	**0.000676 J**	**0.00971**	**0.00112 J**	**0.00156 J**	**0.000647 J**	**0.00105 J**	**0.00447 J**	**0.000972 J**	**0.00165 J**	**0.0192**	**0.00305 J**
Barium	mg/L	2	**0.105**	**0.104**	**0.103**	**0.509**	**0.516**	**0.261**	**0.172**	**0.113**	**0.0456**	**0.221**	**0.147**	**0.113**	**0.0481**	**0.0731**	**0.0839**	**0.177**	**1.35**	**1.44**
Beryllium	mg/L	0.004	< 0.000500 U	< 0.000500 U	**0.000444 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000646 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000697 J**	**0.000572 J**	< 0.000500 U	**0.000295 J**	**0.000204 J**
Cadmium	mg/L	0.005	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000531 J**	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000217 J**	**0.000276 J**
Calcium	mg/L	NV	**20.5**	**20.5**	**2.25**	**16.5**	**16.4**	**8.26**	**18.3**	**6.59**	**8.16**	**29.5**	**17.6**	**7.46**	**2.31**	**1.04**	**0.666**	**5.21**	**54.1**	**91.7**
Chromium	mg/L	0.1	**0.00111 J**	**0.000885 J**	**0.00839**	**0.00265 J**	**0.00223 J**	**0.0340**	**0.00163 J**	**0.0577**	**0.0169**	**0.632**	**0.0322**	< 0.00100 U	**0.0346**	**0.316**	**0.0104**	**0.259**	**0.269**	**0.00157 J**
Cobalt	mg/L	6.1	**0.00306 J**	**0.00310 J**	**0.00240 J**	**0.00408 J**	**0.00367 J**	**0.000380 J**	**0.000153 J**	**0.000455 J**	**0.0121**	**0.0535**	**0.0182**	**0.00714**	**0.000570 J**	**0.00320 J**	**0.00458 J**	**0.00134 J**	**0.0431**	**0.0120 J**
Copper	mg/L	1.3	< 0.00250 U	< 0.00250 U	**0.00979**	< 0.00250 U	< 0.00250 U	**0.00678**	**0.0169**	**0.00130 J**	**0.0234**	**0.0164**	**0.0101**	**0.00104 J**	**0.00655**	**0.00996**	**0.0615**	< 0.00250 U	**0.0240**	**0.0116 J**
Iron	mg/L	NV	**0.0134 J**	< 0.0500 U	**3.72**	**2.52**	**2.23**	**0.251**	**0.0970 J**	**0.564**	**24.1**	**13.8**	**4.74**	**0.609**	**2.41**	**8.76**	**4.55**	**5.66**	**74.8**	**3.63 J**
Lead	mg/L	0.015	< 0.00100 U	< 0.00100 U	**0.00130 J**	< 0.00100 U	< 0.00100 U	< 0.00100 U	**0.000629 J**	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	< 0.00100 U	**0.00763**	**0.00380 J**	**0.00252 J**	< 0.00100 U	**0.0110**	< 0.00100 UJ
Magnesium	mg/L	NV	**18.3**	**18.3**	**2.40**	**13.3**	**13.1**	**5.99**	**13.2**	**5.16**	**8.10**	**25.3**	**16**	**9.53**	**1.85**	**1.10**	**1.0**	**4.91**	**36.6**	**63.3**
Manganese	mg/L	1.1*	**0.120**	**0.119**	**0.0556**	**0.370**	**0.343**	**0.0267**	**0.0117**	**0.0121**	**0.362**	**1.33**	**0.457**	**0.243**	**0.0113**	**0.0322**	**0.0250**	**0.0595**	**2.48**	**1.09**
Nickel	mg/L	0.49*	**0.00468 J**	**0.00455 J**	**0.00981**	**0.00841**	**0.00774**	**0.0260**	**0.00569**	**0.0150**	**0.138**	**1.11**	**0.127**	**0.00739**	**0.0779**	**0.0186**	**0.0141**	**0.0267**	**0.223**	**0.0221 J**
Potassium	mg/L	NV	**0.986**	**1.0**	**1.47**	**1.33**	**1.46**	**0.871**	**0.606**	**0.300**	**0.423**	**1.85**	**1.69**	**1.43**	**0.653**	**1.06**	**1.42**	**0.389**	**0.849**	**1.10 J**
Selenium	mg/L	0.05	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	**0.00124 J**	**0.00233 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	**0.00115 J**	< 0.00250 U
Silver	mg/L	0.51	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 UJ
Sodium	mg/L	NV	**154**	**156**	**31.5**	**83.1**	**85.6**	**52.6**	**168**	**80.8**	**49.8**	**288**	**251**	**68**	**13.6**	**13.2**	**6.24**	**62.1**	**142**	**316**
Thallium	mg/L	0.002	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	**0.000810 J**	**0.00115 J**	**0.00955**	**0.00178 J**	**0.00209 J**	**0.00146 J**	**0.00173 J**	**0.00200 J**	**0.00118 J**	**0.000981 J**	**0.00325 J**	**0.000842 J**	**0.00129 J**	**0.0142**	**0.0129**	**0.00266 J**	**0.00365 J**	< 0.00100 U
Zinc	mg/L	31	**0.00266 J**	**0.00240 J**	**0.0200**	**0.00395 J**	**0.00315 J**	**0.0133**	**0.0132**	**0.00543**	**0.00856**	**0.0353**	**0.126**	**0.00808**	**0.130**	**0.0318**	**0.137**	**0.00389 J**	**0.0433**	**0.0276 J**
Mercury	mg/L	0.002	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	**0.0000440 J**	< 0.000100 U
1,4-Dioxane (8270D SIM)																				
1,4-Dioxane	µg/L	9.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

UB - considered a non-detect due to blank contamination

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

***The large perchlorate amount is due to a 20,000X dilution

Table 7. Weekly Perchlorate Sample Results - 2nd Quarter 2020

Sample Identification	Lab Package	Date Sampled	Sample Location	Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (µg/L)	INF Pond Discharge Criteria for Perchlorate (µg/L)	Reporting Limit	Influent Perchlorate (6850)	Effluent Perchlorate (6850)		Does Concentration Meet Discharge Limit? (Yes/No)	No Daily Maximum Concentration		
							Result (µg/L)	Result (µg/L)	DVQ		Ammonia as N (350.3) (mg/L)	Ortho-Phosphate (365.3) (mg/L)	Organic Carbon (SM5310C) (mg/L)
LH18/24-SP650_040720/BIX	HS20040289	4/7/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**1.6**	**0.125**	**2.72**
LH18/24-SP650_040720_BIX (monthly)	HS20040284	4/7/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	--	--	--
LH18/24-SP140_040720 (monthly)	HS20040287	4/7/2020	TK-140	--	--	NA	**10,600**	NA		NA	--	--	--
LH18/24-SP650_041620/BIX	HS20040700	4/16/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**20**	**1.11**	**3.12**
LH18/24-SP650_042120/BIX	HS20040851	4/21/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**4.6**	**0.792**	**2.41**
LH18/24-SP650_042820/BIX	HS20041130	4/28/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**21**	**1.96**	**2.18**
LH18/24-SP650_050520/BIX	HS20050178	5/5/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**3.7**	**0.804 J**	**2.34**
LH18/24-SP650_050520_BIX (monthly)	HS20050176	5/5/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	--	--	--
LH18/24-SP140_050520 (monthly)	HS20050177	5/5/2020	TK-140	--	--	NA	**6,740**	NA		NA	--	--	--
LH18/24-SP650_051220/BIX	HS20050454	5/12/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**11**	**1.89**	**2.63**
LH18/24-SP650_051920-BIX	HS20050737	5/19/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**11**	**1.89**	**2.19**
LH18/24-SP650_051920_BIX (quarterly)	HS20050757	5/19/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	--	--	--
LH18/24-SP140_051920 (quarterly)	HS20050754	5/19/2020	TK-140	--	--	NA	**9,250**	NA		NA	--	--	--
LH18/24-SP650_052820/BIX	HS20051122	5/28/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**11**	**0.96**	**2.96**
LH18/24-SP650_060220/BIX	HS20060115	6/2/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**7.8**	**1.47**	**2.17 J**
LH18/24-SP650_060220/BIX (monthly)	HS20060114	6/2/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	--	--	--
LH18/24-SP140_060220 (monthly)	HS20060116	6/2/2020	TK-140	--	--	NA	**8,290**	NA		NA	--	--	--
LH18/24-SP650_060920/BIX	HS20060451	6/9/2020	TK-650	589	17	0.1	NA	**0.0890**	J	Yes	**16**	**2.64**	**2.01**
LH18/24-SP650_061620/BIX	HS20060840	6/16/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**9**	**1.96**	**1.82**
LH18/24-SP650_062320/BIX	HS20061177	6/23/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**14**	**1.83**	**2.1**
LH18/24-SP650_063020/BIX	HS20070018	6/30/2020	TK-650	589	17	0.1	NA	< 0.0500	U	Yes	**8.9**	**1.64**	**2.56**

Notes:

Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL)

SP140 samples are influent samples.

µg/L - micrograms per liter

DVQ - data validation qualifier

J - Estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancies

NA - not applicable

U - non detect and reported to the limit of detection

BIX - before ion exchange

mg/L - milligrams per liter

Table 8. Bi-Weekly GWTP Analytical Sampling Results for April 2020

				Sample Location	EFFLUENT - Monthly		INFLUENT - Monthly*		EFFLUENT - Biweekly		EFFLUENT - Biweekly		Does Concentration Meet Effluent Discharge Limits? (Yes/No)
				Sample Identification	LH18/24-SP650_040720		LH18/24-SP140_040720		LH18/24-SP650_041620		LH18/24-SP650_042820		
				Lab Package	HS20040284		HS20040287		HS20040699		HS20041127		
				Sample Date	4/7/2020		4/7/2020		4/16/2020		4/28/2020		
				Sample Type	GRAB		GRAB		GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Table 2 of ROD												
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL	Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	
VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,1,1-Trichloroethane	3,417	7,230	200	0.5	U	NA		0.5	U	0.5	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	1.0	U	NA		1.0	U	1.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	0.5	U	NA		0.5	U	0.5	U	Yes
1,1-Dichloroethene	119	253	7	0.5	U	NA		0.5	U	0.5	U	Yes
1,2-Dichloroethane	85	181	5	**1.0**		NA		**0.73**	J	**1.1**		Yes
1,2-Dichloropropane	NA	NA	5	1.0	U	NA		1.0	U	1.0	U	Yes
Acetone	1,132	2,395	NV	1.0	U	NA		1.0	U	1.0	U	Yes
Benzene	85	181	5	0.5	U	NA		0.5	U	0.5	U	Yes
Carbon Tetrachloride	85	181	5	1.0	U	NA		1.0	U	1.0	U	Yes
Chlorobenzene	22,300	47,180	100	1.0	U	NA		1.0	U	1.0	U	Yes
Chloroform	1,708	3,615	NV	0.5	U	NA		0.5	U	0.5	U	Yes
cis-1,2-Dichloroethene	NV	NV	70	**23**		NA		**21**		**28**		Yes
Ethylbenzene	26,954	57,025	700	1.0	U	NA		1.0	U	1.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	1.0	U	NA		1.0	U	1.0	U	Yes
Methylene Chloride	803	1,699	5	1.0	U	NA		1.0	U	1.0	U	Yes
o-Xylene	39.5	83.6	NV	1.0	U	NA		1.0	U	1.0	U	Yes
Styrene	2,829	5,987	100	1.0	U	NA		1.0	U	1.0	U	Yes
Tetrachloroethene	85.4	180.7	5	1.0	U	NA		1.0	U	1.0	U	Yes
Toluene	1,980	4,189	10	0.5	U	NA		0.5	U	0.5	U	Yes
Trichloroethene	85	181	5	**4.4**		NA		**3.3**		**4.4**		Yes
Vinyl Chloride	34	72	2	0.5	U	NA		0.5	U	0.5	U	Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Chloride	NV	NV	NV	NA		NA		**295**		**294**		NA
Sulfate	NV	NV	NV	NA		NA		**37.1**		**41.3**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
Perchlorate	278	589	17	0.0500	U	**10,600**		NA		NA		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Hexavalent Chromium	0.058	0.124	NV	< 0.0100	U	< 0.0100	UJ	NA		NA		Yes
Barium	1	2	2	**0.0926**		NA		NA		NA		Yes
Lead	0.0022	0.0046	0.015	< 0.00100	U	NA		NA		NA		Yes
Selenium	0.0057	0.0120	0.05	< 0.00250	U	< 0.00250	U	NA		NA		Yes
Silver	0.0014	0.0030	0.1	< 0.000500	U	< 0.000500	U	NA		NA		Yes
SEMI-VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,4-Dioxane**	NV	134.2	NV	**33**		NA		NA		NA		Yes

Notes:

µg/L - micrograms per liter
mg/L - milligrams per liter
DVQ - data validation qualifier
NA - not applicable or not analyzed
GWTP - Groundwater Treatment Plant
ROD - Record of Decision

Grab samples are compared to the daily maximum and composite samples to the daily average.

U - not detected and reported to the limit of detection
J - estimated concentration and/or due to QC discrepancies

UJ - esimtated not detected due to QC discrepancies and reported to the limit of detection

*Influent sample not compared to discharge limits
NV - no value

** Calculated Effluent Limit

Table 9. Bi-Weekly GWTP Analytical Sampling Results for May 2020

	Effluent Limitation for Discharge (µg/L) per Table 2 of ROD			Sample Location	EFFLUENT - Monthly		INFLUENT - Monthly*		EFFLUENT - Biweekly		EFFLUENT - Biweekly		Does Concentration Meet Effluent Discharge Limits? (Yes/No)
				Sample Identification	LH18/24-SP650_050520		LH18/24-SP140_050520		LH 18/24-SP650_051220		LH18/24-SP650_052820		
				Lab Package	HS20050176		HS20050177		HS20050456		HS20051138		
				Sample Date	5/5/2020		5/5/2020		5/12/2020		5/28/2020		
				Sample Type	GRAB		GRAB		GRAB		GRAB		
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL	Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	
VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,1,1-Trichloroethane	3,417	7,230	200	0.50	U	NA		0.50	U	0.50	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	1.0	U	NA		1.0	U	1.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	0.50	U	NA		0.50	U	0.50	U	Yes
1,1-Dichloroethene	119	253	7	0.50	U	NA		0.50	U	0.50	U	Yes
1,2-Dichloroethane	85	181	5	**0.94**	J	NA		**0.97**	J	**0.82**	J	Yes
1,2-Dichloropropane	NA	NA	5	1.0	U	NA		1.0	U	1.0	U	Yes
Acetone	1,132	2,395	NV	1.0	U	NA		1.0	U	1.0	U	Yes
Benzene	85	181	5	0.50	U	NA		0.50	U	0.50	U	Yes
Carbon Tetrachloride	85	181	5	1.0	U	NA		1.0	U	1.0	U	Yes
Chlorobezene	22,300	47,180	100	1.0	U	NA		1.0	U	1.0	U	Yes
Chloroform	1,708	3,615	NV	0.50	U	NA		0.50	U	0.50	U	Yes
cis-1,2-Dichloroethene	NV	NV	70	**21**		NA		**20**		**15**		Yes
Ethylbenzene	26,954	57,025	700	1.0	U	NA		1.0	U	1.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	1.0	U	NA		1.0	U	1.0	U	Yes
Methylene Chloride	803	1,699	5	1.0	U	NA		1.0	U	1.0	U	Yes
o-Xylene	39.5	83.6	NV	1.0	U	NA		1.0	U	1.0	U	Yes
Styrene	2,829	5,987	100	1.0	U	NA		1.0	U	1.0	U	Yes
Tetrachloroethene	85.4	180.7	5	1.0	U	NA		1.0	U	1.0	U	Yes
Toluene	1,980	4,189	10	0.50	U	NA		0.50	U	0.50	U	Yes
Trichloroethene	85	181	5	**3.8**		NA		**4.0**		**2.7**		Yes
Vinyl Chloride	34	72	2	0.50	U	NA		0.50	U	0.50	U	Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Chloride	NV	NV	NV	NA		NA		**400**		**313**		NA
Sulfate	NV	NV	NV	NA		NA		**31.6**		**31.5**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
Perchlorate	278	589	17	0.05	U	**6,740**		NA		NA		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Hexavalent Chromium	0.058	0.124	NV	0.0100	U	**0.00600**	J	NA		NA		Yes
Barium	1	2	2	**0.0644**		NA		NA		NA		Yes
Lead	0.0022	0.0046	0.015	0.00100	U	NA		NA		NA		Yes
Selenium	0.0057	0.0120	0.05	0.00250	U	0.00250	U	NA		NA		Yes
Silver	0.0014	0.0030	0.1	0.000500	U	0.000500	U	NA		NA		Yes
SEMI-VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,4-Dioxane**	NV	134.2	NV	**34**		NA		NA		NA		Yes

Notes:

µg/L - micrograms per liter
mg/L - milligrams per liter
DVQ - data validation qualifier
ROD - Record of Decision
GWTP - Groundwater Treatment Plant
*Influent sample not compared to discharge limits
NA - not applicable or not analyzed
U - not detected and reported to the limit of detection
Grab samples are compared to the daily maximum and composite samples to the daily average.
** Calculated Effluent Limit
J - estimated concentration and/or due to QC discrepancies

Table 10. Bi-Weekly GWTP Analytical Sampling Results for June 2020

			Sample Location	INFLUENT - Monthly*		EFFLUENT - Monthly		EFFLUENT - Biweekly		EFFLUENT - Biweekly		Does Concentration Meet Effluent Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP140_060220		LH18/24-SP650_060220		LH18/24-SP650_060920		LH18/24-SP650_062320		
			Lab Package	HS20060116		HS20060114		HS20060453		HS20061179		
			Sample Date	6/2/2020		6/2/2020		6/9/2020		6/23/2020		
			Sample Type	GRAB		GRAB		GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Table 2 of ROD			Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL									
VOLATILES	**µg/L**	**µg/L**	**µg/L**					**µg/L**				
1,1,1-Trichloroethane	3,417	7,230	200	NA		< 0.50	U	0.50	U	0.50	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	NA		< 1.0	U	1.0	U	1.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	NA		< 0.50	U	0.50	U	0.50	U	Yes
1,1-Dichloroethene	119	253	7	NA		< 0.50	U	0.50	U	0.50	U	Yes
1,2-Dichloroethane	85	181	5	NA		**0.84**	J	**0.81**	J	**0.84**	J	Yes
1,2-Dichloropropane	NA	NA	5	NA		< 1.0	U	1.0	U	1.0	U	Yes
Acetone	1,132	2,395	NV	NA		< 1.0	U	1.0	U	1.0	U	Yes
Benzene	85	181	5	NA		< 0.50	U	0.50	U	0.50	U	Yes
Carbon Tetrachloride	85	181	5	NA		< 1.0	U	1.0	U	1.0	U	Yes
Chlorobenzene	22,300	47,180	100	NA		< 1.0	U	1.0	U	1.0	U	Yes
Chloroform	1,708	3,615	NV	NA		< 0.50	U	0.50	U	0.50	U	Yes
cis-1,2-Dichloroethene	NV	NV	70	NA		**17**		**17**		**20**		Yes
Ethylbenzene	26,954	57,025	700	NA		< 1.0	U	1.0	U	1.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	NA		< 1.0	U	1.0	U	1.0	U	Yes
Methylene Chloride	803	1,699	5	NA		< 1.0	U	1.0	U	1.0	U	Yes
o-Xylene	39.5	83.6	NV	NA		< 1.0	U	1.0	U	1.0	U	Yes
Styrene	2,829	5,987	100	NA		< 1.0	U	1.0	U	1.0	U	Yes
Tetrachloroethene	85.4	180.7	5	NA		< 1.0	U	1.0	U	1.0	U	Yes
Toluene	1,980	4,189	10	NA		< 0.50	U	0.50	U	0.50	U	Yes
Trichloroethene	85	181	5	NA		**3.2**		**3.4**		**3.8**		Yes
Vinyl Chloride	34	72	2	NA		< 0.50	U	0.50	U	0.50	U	Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Chloride	NV	NV	NV	NA		NA		**316**		**354**		NA
Sulfate	NV	NV	NV	NA		NA		**31.5**		**31.5**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
Perchlorate	278	589	17	**8,290**		< 0.0500	U	NA		NA		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Hexavalent Chromium	0.058	0.124	NV	< 0.0100	U	< 0.0100	U	NA		NA		Yes
Barium	1	2	2	NA		**0.144**		NA		NA		Yes
Lead	0.0022	0.0046	0.015	NA		< 0.00100	U	NA		NA		Yes
Selenium	0.0057	0.0120	0.05	< 0.00250	U	< 0.00250	U	NA		NA		Yes
Silver	0.0014	0.0030	0.1	< 0.000500	U	< 0.000500	U	NA		NA		Yes
SEMI-VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,4-Dioxane**	NV	134.2	NV	NA		**0.48**		NA		NA		Yes

Notes:

µg/L - micrograms per liter; mg/L - milligrams per liter

DVQ - data validation qualifier

GWTP - Groundwater Treatment Plant

U - Non detect reported to the limit of detection

J - estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancy

*Influent sample not compared to discharge limits

** Calculated Effluent Limit

Grab samples are compared to the daily maximum and composite samples to the daily average.

ROD - Record of Decision

NA - not applicable or not analyzed

Table 11. Quarterly GWTP Analytical Sampling Results - 2nd Quarter 2020

			Sample Location	EFFLUENT		INFLUENT*		Does Concentration Meet Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_051920		LH18/24-SP140_051920		
			Lab Package	HS20050757		HS20050754		
			Sample Date	5/19/2020		5/19/2020		
			Sample Type	GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Protocol			Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	Reporting Limit					
VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
1,1,1-Trichloroethane	3,417	7,230	1	0.5	U	**2.3**		Yes
1,1,2-Trichloroethane	102.5	216.9	1	1.0	U	**2.1**		Yes
1,1-Dichloroethane	6,633	14,032	1	0.5	U	**9.6**		Yes
1,1-Dichloroethene	119	253	1	0.5	U	0.5	U	Yes
1,2-Dichloroethane	85	181	1	**0.91**	**J**	**50**		Yes
1,2-Dichloropropane	NA	NA	1	1.0	U	1.0	U	Yes
Acetone	1,132	2,395	2	1.0	U	1.0	U	Yes
Benzene	85	181	1	0.5	U	**2.5**		Yes
Carbon Tetrachloride	85	181	1	1.0	U	**7.3**		Yes
Chlorobenzene	22,300	47,180	1	1.0	U	1.0	U	Yes
Chloroform	1,708	3,615	1	0.5	U	**13**		Yes
Ethylbenzene	26,954	57,025	1	1.0	U	**1.5**		Yes
m,p-Xylenes	39.5	83.6	2	1.0	U	**1.0**	J	Yes
Methylene Chloride	803	1,699	2	1.0	U	**4,300**		Yes
o-Xylene	39.5	83.6	1	1.0	U	**0.76**	J	Yes
Styrene	2,829	5,987	1	1.0	U	**1.7**		Yes
Tetrachloroethene	85.4	180.7	1	1.0	U	**77**	J	Yes
Toluene	1,980	4,189	1	0.5	U	**2.3**		Yes
Trichloroethene	85	181	1	**4.0**		**5,900**		Yes
Vinyl Chloride	34	72	1	0.5	U	**99**		Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
Chloride	NA	NA	10	**326**		**239**		NA
Sulfate	NA	NA	10	**32.5**		**31.6**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
Perchlorate	278	589	4	0.0500	U	**9,250**		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
Aluminum	0.777	1.644	0.0100	**0.0440**		**0.187**		Yes
Antimony	NA	NA	0.00200	**0.000560**	J	**0.00116**	J	NA
Arsenic	0.365	0.772	0.00200	**0.000722**	J	**0.00118**	J	Yes

Table 11. Quarterly GWTP Analytical Sampling Results - 2nd Quarter 2020

			Sample Location	EFFLUENT		INFLUENT*		Does Concentration Meet Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_051920		LH18/24-SP140_051920		
			Lab Package	HS20050757		HS20050754		
			Sample Date	5/19/2020		5/19/2020		
			Sample Type	GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Protocol			Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	Reporting Limit					
Barium	1	2	0.00400	**0.0980**		**0.417**		Yes
Beryllium	NA	NA	0.00200	0.000500	U	0.000500	U	NA
Cadmium	0.0016	0.0034	0.00200	0.000500	U	0.000500	U	Yes
Calcium	NA	NA	0.500	**8.42**		**24.2**		NA
Chromium	0.355	0.752	0.00400	**0.00262**	J	**0.00118**	J	Yes
Cobalt	5.433	11.495	0.00500	**0.00148**	J	**0.00597**		Yes
Iron	1.132	2.395	0.200	**0.248**		**0.896**		Yes
Lead	0.0022	0.0046	0.00200	0.00100	U	0.00100	U	Yes
Magnesium	NA	NA	0.200	**11.9**		**18.5**		NA
Manganese	7.323	15.494	0.00500	**0.0987**		**0.376**		Yes
Nickel	0.087	0.184	0.00200	**0.00369**	J	**0.00839**		Yes
Potassium	NA	NA	0.200	**1.48**		**1.05**		NA
Selenium	0.0057	0.012	0.00200	0.00250	U	0.00250	U	Yes
Silver	0.0014	0.003	0.00200	0.000500	U	0.000500	U	Yes
Sodium	NA	NA	1.00	**320**		**139**		NA
Thallium	NA	NA	0.00200	0.000500	U	0.000500	U	NA
Vanadium	1.698	3.592	0.00500	0.00100	U	0.00100	U	Yes
Zinc	0.146	0.31	0.00400	**0.0341**		**0.0227**		Yes
Mercury	NA	NA	0.000200	**0.0000410**	J	**0.0000310**	J	NA
1,4-DIOXANE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
1,4-Dioxane	NA	134.2	1	**33.0**		**37**		Yes
CHEMICAL OXYGEN DEMAND (COD)	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
COD	NA	200	75	**17**		**19**		Yes
OIL AND GREASE (O&G)	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
O&G	NA	15	2	**0.612**	J	2.0	U	Yes

Notes:
µg/L - micrograms per liter
DVQ - data validation qualifier
Grab samples are compared to the daily maximum and composite samples to the daily average
* only Effluent sample is compared to discharge limits
J - Estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancy
U - non detect and reported to the limit of detection
mg/L - milligrams per liter
NA - not applicable
GWTP - Groundwater Treatment Plant

3 QUALITY CONTROL

This report summarizes the data for samples collected during April, May, and June 2020. The samples were reviewed and validated in accordance with the guidelines in the *USEPA Contract Laboratory Program 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 quality control criteria specified in the *Basewide Uniform Federal Policy - Quality Assurance Project Plan 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).

The purpose of the sampling program is to evaluate the effectiveness of the groundwater pump and treat system, assess water quality within the capture zone, and assure compliance with the effluent discharge requirements of the Interim ROD. Quality control and quality assurance problems noted in the case narratives received from the laboratory are minor and do not affect the usability of the data for compliance at the GWTP. No sample results from the 2nd quarter of 2020 were rejected due to quality control problems.

ALS Environmental analyzed the compliance samples collected from the GWTP. Independent data verification and validation was performed by the Bhate project chemist as described in the Quality Control Summary Report in **Appendix G**. The laboratory reports for the 2nd quarter of 2020 sampling conducted at LHAAP-18/24 are included in **Appendix C** (as a separate file on the CD) and the laboratory results for the GWTP are included in **Appendix F** (as a separate file on the CD). Air monitoring data is presented in **Appendix H**.

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4 TREATED GROUNDWATER DISCHARGED

Reinjection of groundwater in ICT 6 and ICT 9 was discontinued as of 15 July 2012. The last injection occurred on 24 May 2012, immediately prior to the scrubber system malfunction which caused GWTP operation to cease temporarily.

Treated groundwater that met the perchlorate discharge criteria was discharged to Harrison Bayou or the INF Pond in accordance with the Protocol for Discharging GWTP Effluent (**Appendix I**). **Table 4** summarizes daily volume from the INF Pond to the Harrison Bayou, the maximum flow rate allowed by chloride and sulfate concentrations, and the approximate volumes discharged for the 2nd quarter of 2020. Approximately 440,426 gallons of water was discharged in April 2020, 442,135 gallons in May 2020, and 584,887 gallons in June 2020 from the GWTP to the Harrison Bayou. No water was released from the GWTP to the INF Pond in the 2nd quarter of 2020.

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5 AIR MONITORING

5.1 Summary of Air Monitoring Approach

Operation of the GWTP without air abatement was approved by the TCEQ and USEPA conditioned on collection of air monitoring data to determine the effect of GWTP operation on ambient air quality with respect to potential human health exposure risk. An Interim Air Monitoring Plan was developed by AECOM in August 2012 and used to implement the air monitoring program. The air monitoring program included sampling emission concentrations from the air stripper, ambient air at the GWTP, and ambient air downwind of the GWTP. Collection of air data occurred on a weekly basis between September 2012 and September 2013, on a monthly basis between September 2013 and September 2014, and on a quarterly basis since that time. The sampling program includes use of Summa canisters and a photoionization detector (PID) to measure vapor phase concentrations. The air stripper emission sample is collected as a grab sample, while the ambient air samples are collected as composite samples. The GWTP sample is collected over 8 hours to represent a work day and the downwind sample is collected over 24 hours to represent potential exposure to an off-site receptor[1]. The downwind sample is collected at the closest downwind property boundary, based on prevailing wind direction.

PID data (after system calibration) are collected each time the GWTP is operated and serve as a real-time indicator of ambient air conditions at and downwind of the GWTP. Correlations between definitive analytical air data and PID measurements were established and a means to calculate contaminant concentration from PID measurements was developed. A PID threshold of 0.4 parts per million by volume (ppmv) in ambient air was established, such that Summa canister measurements would occur when the PID threshold is exceeded.

The Summa canister samples are analyzed for VOCs using USEPA Method TO-15. The PID measurements are collected after instrument calibration. The air sampling results are summarized and reported to the USEPA and TCEQ in the GWTP quarterly reports; however, the air results are reviewed immediately upon receipt for the potential presence of any exceedances of ambient air concentrations. **Appendix J** (**Tables 1 through 3**) includes a comparison of ambient air concentrations with TCEQ Air Monitoring Comparison Values (AMCVs) or the short-term Effects Screening Levels (ESLs) for chemicals with no published AMCVs, calculations of emission rates from the emission point, and a compilation of PID results and calibration records. The air monitoring results to date indicate that all ambient air concentrations are lower than the AMCVs or ESLs. The stripper stack sample concentrations are used to calculate emission rates in pounds

[1] Off-site receptor - Any recreational area, residence, commercial/industrial facility, or other normally occupied structures not used solely by the owner or operator of the facilities or the owner of the site upon which the facilities are located. Measurements of distances to determine compliance with this distance restriction must be taken toward structures that are in use as of the date that a notification is filed with the commission.

per hour (lbs/hr) and tons per year (tpy). The calculated emission rates in lbs/hr are then compared to the allowable emission rates per 30 Texas Administrative Code (TAC) §106.533(f)(1). The emission rates have been lower than the allowable emission rates to the conservatively-selected off-site receptor. The calculated emission rate in tpy is compared to the allowable limit of 5 tpy per chemical. All emission rates have been lower than the allowable emission rates.

The air monitoring results from the first few months of operation between September and November 2012 were compiled and submitted in a separate report (December 2012) (along with validated data) to TCEQ to demonstrate compliance with Texas Permit by Rule emission standards. Approval of the analytical results and concurrence that the site will continue to meet Title 30 TAC §106.533 without the use of air abatement using a catalytic oxidation system was obtained from the TCEQ via email on 22 February 2013.

On 18 February 2013, AECOM presented analysis of the approach applicable to obtaining a variance for operating the GWTP without air abatement equipment to the TCEQ and USEPA. The analysis indicated that the use of an Explanation of Significant Difference (ESD) was the appropriate approach for the site. Approval of use of an ESD was obtained from the USEPA via email on 21 March 2013. The ESD was developed, reviewed, and accepted by USEPA and TCEQ. The ESD was signed by the designated parties on 3 April 2014, and concurrence from the TCEQ was obtained in a letter dated 16 April 2014.

5.2 Air Monitoring Results for the 2nd Quarter of 2020

During the 2nd quarter of 2020, air sampling was completed on 27 May 2020. The laboratory data package is presented in **Appendix H.** A summary of the air sampling results is presented in **Appendix J (Tables 1 through 3)**. All results met the criteria described in Section 6.1.

5.2.1 Summa Canister Monitoring Results

One sampling event was conducted on 27 May 2020, for presentation during the 2nd quarter of 2020 reporting period using Summa canisters. The samples were collected and analyzed as described in Section 6.1 and per the approved air monitoring plan dated August 2012. The analytical results were then compiled in spreadsheets where calculations were completed and comparisons to applicable criteria were made as described in Section 6.1.

5.2.1.1 Ambient Air Results

Acetone; carbon disulfide, cis-1,2-DCE; methylene chloride; trichlorothene; n-hexane; toluene; dichlorodifluoromethane; trichlorofluoromethane; alpha-pinene and trichlorotrifluoroethane were detected in May 2020 in the ambient air of the GWTP.

Compounds originating at the GWTP would be expected to have lower concentrations in the downwind sampling location than at the GWTP sampling location. Likewise, compounds like methylene chloride; dichlorodifluoromethane; trichlorofluoromethane; and alpha-pinene with similar concentrations in both GWTP ambient air and downwind ambient air are suspected to be present in the ambient (background) air. The ambient air results during the quarter met the ambient air criteria, as presented in **Table 1** within **Appendix J**.

5.2.1.2 Air Stripper Effluent Results

The VOCs present in groundwater that are removed via the air stripper include acetone; benzene; n-hexane; toluene; ethylbenzene; m,p-xylenes; o-xylene; propene; dichlorodifluoromethane; ethanol; alpha-pinene; trichlorofluoromethane; and trichlorotrifluoroethane. The highest reported concentrations in May 2020 were for acetone, n-hexane, and ethanol. These compounds are frequently reported in groundwater at the site, with the exception of trichlorotrifluoroethane which is not typically a groundwater analyte at LHAAP. Trichlorotrifluoroethane, however, appears to be present in groundwater as indicated by limited analysis conducted in December 2013, where it was detected in several wells, and from historical accounts. Many of the chemicals that are reported in ambient air are not detected in the air stripper effluent. This is likely because the reporting limit for the air stripper effluent is higher than the reporting limit for the ambient air samples or the source for some of these chemicals are extraneous to groundwater.

The air stripper effluent concentrations were below the emission criteria, as presented in **Table 2** within **Appendix J**.

5.2.2 PID Results

Along with collection of Summa canister air samples, PID measurements from the same sources/areas are collected and recorded. These simultaneous measurements allowed establishing a correlation between PID readings and VOC concentrations in the Summa canister air samples. Conversion from PID to compound concentrations was established by TCEQ in 30 TAC §106.533(h). The TCEQ equation allows use of a PID to determine individual compound concentrations if the distribution of chemicals in the ambient air is known or assumed. This allows the use of a PID as a tool to measure VOC concentrations and convert the PID results to estimates of compound concentrations. All ambient air PID measurements during this quarter at the GWTP were reported at 0.0 parts per million. The stripper PID location detected between 20.3 and 24.9 parts per million at each sampling event. The other two locations had no detections. The results of the PID readings collected during GWTP operations are presented in **Table 3** within **Appendix J**.

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6 COMMENTS AND RESPONSES

The 1st Quarter GWTP Evaluation Report was provided to the TCEQ and the USEPA on 10 June 2020.

The TCEQ provided the following comments on 30 June 2020:

TCEQ Comment 1: Table ES-1—Revise column heading "Maximim" to "Maximum."

Response to TCEQ Comment 1: Table ES-1 will be revised to correct the error in this report and future reports.

TCEQ Comment 2: Consider revising the language in the report and on Appendix cover pages regarding CD submittal of data (examples pages 2-3 and Appendix C cover page 72 of pdf). Maybe when applicable these could say data is provided electronically as a separate file or on CD.

Response to TCEQ Comment 2: The Appendix cover and Report will be revised to state that the data is provided electronically as a separate file in this report and subsequent reports.

The USEPA provided the following comment on 17 July 2020:

USEPA Comment 1: Table ES-1—Release date on 3/16/2020 states that 53,515 gallons was released. However, the maximum release from GWTP is 30 gallons per minute. At 30 gallons per minute, it would take almost 30 hours to release 53,515. So should some of this volume be listed on the next day? Please clarify.

Response to USEPA Comment 1: The release date of 3/16/2020 was a Monday and therefore includes volume of water discharge from Saturday, Sunday, and Monday. A note will be added to Table ES-1 in this report and subsequent reports to explain when this occurs.

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APPENDIX A
ICT LAYOUT AND GWTP PROCESS FLOW DIAGRAM

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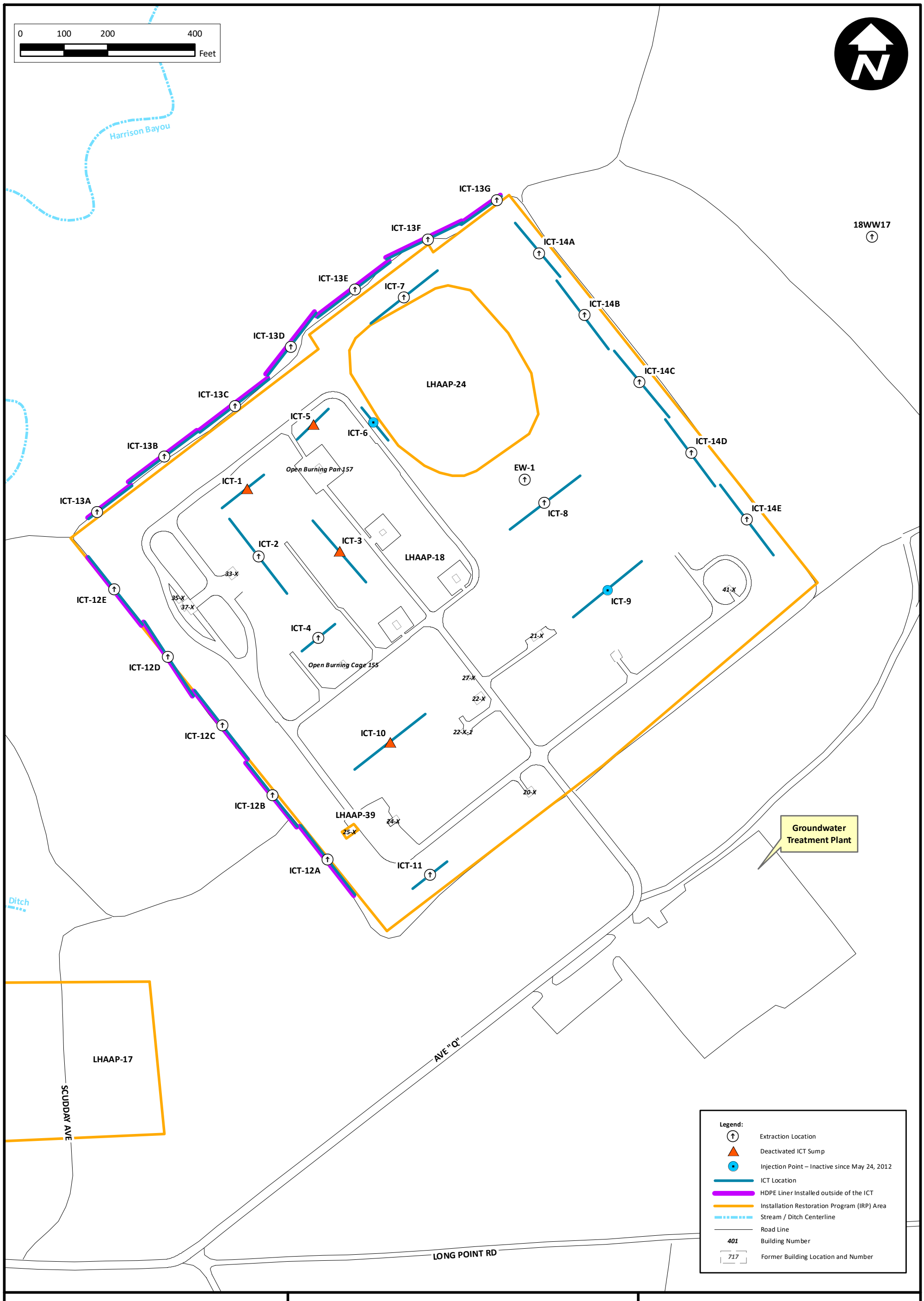

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Quarterly Evaluation Report
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	7/27/2020	MRM

ICT Layout Map

Figure A-1

PROCESS WATER FROM SUMP COLLECTION

FLOW MONITORING METER FIT-140

GROUNDWATER FROM BURNING GROUNDS AND SITE 17

TK-140 EQUALIZATION 300,700 GAL.

TK-140 Sampling Spigot

FLOW MONITORING METER FIT-172

TK-200A ORP 5,900 GAL.

TK-200B pH 5,700 GAL.

TK-200C POLYMER 3,400 GAL.

POLYMER POTABLE WATER

METALS TREATMENT

TK-240 CLARIFIER 10,000 GAL.

FL-290 SAND FILTER

TK-640 BACK WASH TANK

TK-300 STRIPPER FEED TANK 22,800 GAL.

FLOW MONITORING METER FIT-322

VENT TO ATMOSPHERE

VENT HEADER

TK-530 8,670 GAL.

TK-510B 8,670 GAL.

TK-510A 8,670 GAL.

DECANT

DECANT

FILTER PRESS MAKEUP WATER SOURCE

SAND FILTER BACKWASH WATER SOURCE

RECYCLE

FILTER CAKE FOR DISPOSAL

BELT PRESS BFP-560

SOLIDS REMOVAL

COLLECTION FROM FLOOR DRAINS IN CONTAINMENT AREA AND FROM DECON PAD

SUMP

TO TK 140

ELECTRON DONOR SUBSTRATE TANK 55 GAL. DRUM

TK-103 NUTRIENT TANK

P-104

P-103

FILTER PRESS MAKEUP WATER

SAND FILTER BACKWASH WATER

CARBON FILTER

T-330 AIR STRIPPER

TK-630 EFFLUENT STORAGE 127,000 GAL.

P-175

FLOW MONITORING METER FIT-103

Recycle

VOLATILE ORGANICS TREATMENT

P-101A

P-101B

T-101 FBR

T-105 MEDIA CAPTURE TANK

TK-650 1,000 GAL.

P-641

P-642

TK-650 Sampling Spigot

Liquid Phase Adsorber Protect™ LM-36 Series

FLOW MONITORING METER FIT-686

TO INF POND

TO HARRISON BAYOU

TO IRRIGATION AT BURNING GROUNDS

PERCHLORATE TREATMENT

NOTES:

GAL.	GALLON
TK or T	TANK
BFP	BELT FILTER PRESS
P	PUMP
FL	FILTER
FBR	FLUIDIZED BED REACTOR
I/X	ION EXCHANGE

Process Flow Diagram

Figure A-2

Quarterly Evaluation Report
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

DRAWN BY: MRM

DATE: 7/27/2020

SCALE: Not to Scale

PROJECT NO: NWO1312.0150

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Table A-1: ICTs Completion Depths

ICT	TOC Elevation	Total Depth	Sump Elevation	Comment
1	186.07	22.5	163.57	Taken out of service in 2007.
2	185.02	29.5	155.52	
3	192.27	37.75	154.52	Taken out of service in 2007.
4	193.51	37.5	156.01	
5	192.67	35	157.67	Taken out of service in 2007.
6	197.30	40.75	156.55	Converted to infiltration in 2007. Ceased reinjection in July 2012.
7	198.03	32.33	165.7	
8	198.97	44.5	154.47	
9	197.64	45.5	152.14	Converted to infiltration in 2007. Ceased reinjection in July 2012.
10	198.07	45.42	152.65	Taken out of service in 2007.
11	198.01	43.33	154.68	
12A	189.06	31.5	157.56	Taken out of service in 2007. Reinstituted in December 2012.
12B	191.97	36.25	155.72	
12C	193.90	34.33	159.57	
12D	185.64	33.75	151.89	
12E	183.38	32.25	151.13	
13A	182.59	28.17	154.42	
13B	184.72	29.58	155.14	
13C	186.13	28.17	157.96	
13D	186.72	26.17	160.55	
13E	191.79	27.08	164.71	
13F	197.81	32.33	165.48	
13G	197.03	27.25	169.78	Taken out of service in 2008.
14A	196.8	43.00	153.8	
14B	197.61	43.42	154.19	
14C	197.86	41.33	156.53	
14D	198.47	44.25	154.22	
14E	198.47	43.08	155.39	

Note(s):

ICT - interception-collection trench

TOC - top of casing, measuring point for groundwater elevations

Elevations are reported as feet above mean sea level.

Total depths are reported as feet below TOC.

Sump elevation calculated by subtracting total depth from TOC elevation.

ICTs were installed in 1998.

ICT 12A was replaced on December 5, 2012, and extraction has resumed.

TOC Elevations and total depth measured in October 2003, 4th Quarter 2003, Groundwater Treatment Plant Report.

Table A-2: Extraction Equipment Maintenance Since 2011

LHAAP-18/24

Well I.D.	Replaced Parts	Date	Contractor
ICT 14E	Pump	3/15/2012	Shaw
ICT 14D	Pump, motor, level probes	3/16/2012	Shaw
ICT 14B	Pump, level probes, level probe wire	3/16/2012	Shaw
ICT 14A	Pump, motor, level probes, level probe wire	3/17/2012	Shaw
ICT 2	Pump, motor	3/17/2012	Shaw
ICT 13D	Pump	3/19/2012	Shaw
ICT 13B	Pump	3/20/2012	Shaw
ICT 14E	Pump, motor, broken piping	11/19/2012	AECOM
ICT 13C	Pump	11/20/2012	AECOM
ICT13E	Pump	11/20/2012	AECOM
ICT 12A	Pump, motor, wiring harness, level probes, level probe wire	12/5/2012	AECOM
ICT 7	Pump, motor, wiring harness, level probes	12/6/2012	AECOM
ICT2	Pump	6/10/2013	AECOM
ICT 13C	Pump	6/11/2013	AECOM
ICT 13D	Pump	6/12/2013	AECOM
ICT 14E	Pump rebuilt	6/15/2013	AECOM
ICT 14E	Replaced low level switch	6/19/2013	AECOM
ICT 13C	Pump, wiring harness, flow meter	4/15/2014	AECOM
ICT 14D	Repaired level probes	6/24/2014	AECOM
ICT 14E	Repaired level probes	6/24/2014	AECOM
ICT 14E	Pump and motor troubleshooting	6/26/2014	AECOM
ICT2, 13F, 14C, 14D, 14E	Repaired level probes	7/7/2014	AECOM
ICT 12E	Pump, motor	10/2/2014	AECOM
ICT 12E	Wiring harness, fixed leak	10/8/2014	AECOM
ICT 12E	Level probes	10/9/2014	AECOM
ICT13A	Pump, piping	10/15/2014	AECOM
ICT 12E	Repaired leaking fittings	10/16/2014	AECOM
ICT 11	1" tee and 1" elbow	1/13/2015	AECOM
ICT 12B	Flow meter	1/13/2015	AECOM
ICT 7	1" tee, repaired 1" pipe	1/13/2015	AECOM
ICT 13A	Flow meter	1/15/2015	AECOM
ICT 13B	Pump	1/15/2015	AECOM
ICT 13C	Pump	1/16/2015	AECOM
ICT 7	Low level probe	1/16/2015	AECOM
ICT 13D	Pump, level probes	1/17/2015	AECOM
ICT 14C	Low level probe	1/17/2015	AECOM
ICT 14C	Low level probe	1/29/2015	AECOM
ICT 14D	Low level probe	1/29/2015	AECOM
ICT 13D	Level probes	1/29/2015	AECOM
ICT 2	Pump	1/30/2015	AECOM
ICT 8	Fuse	3/2/2015	AECOM
ICT 8	Fuse	3/9/2015	AECOM
ICT 12E	Flow meter	3/13/2015	AECOM
ICT 13D	Union	3/13/2015	AECOM
ICT 14C	Cleaned level probes	4/1/2015	AECOM
ICT 14D	Cleaned level probes	4/1/2015	AECOM
ICT 13A	Cleaned level probes	4/21/2015	AECOM
ICT 14C	Cleaned level probes	4/21/2015	AECOM
ICT 8	Low level probe	7/24/2015	AECOM
ICT 13C	Installed new pump	7/28/2015	AECOM

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 14C	Installed new pump and electric motor	7/29/2015	AECOM
ICT 14E	Installed new pump and electric motor	7/31/2015	AECOM
ICT 12E	Repaired wiring	8/12/2015	AECOM
ICT 13E	Replaced high and low level probes	8/12/2015	AECOM
ICT 2	Installed rebuilt pump	9/9/2015	AECOM
ICT 12 E, ICT 14E	Replaced high level probe and wiring	9/15/2015	AECOM
ICT 13A	Installed new pump	12/23/2015	AECOM
ICT 13B	Installed new pump	12/24/2015	AECOM
ICT 13D	Replaced high level probe	2/11/2016	Aerotek
ICT 14C	Replaced low level probe on ICT 14C	2/15/2016	Aerotek
ICT 8	Installed new pump and electric motor	2/19/2016	Aerotek
ICT 14C	Repaired piping leak	3/10/2016	Aerotek
ICT 14E	Installed high and low level probes, level probe wire	3/22/2016	Aerotek
ICT 13D, ICT 14B	Installed high and low level probes, level probe wire	3/24/2016	Aerotek
ICT 14B	Installed new pump and electric motor	3/31/2016	Aerotek
ICT 14C	Installed new low level probe	4/20/2016	Aerotek
ICT 12B	Installed new mechanical flow meter	6/16/2016	Aerotek
ICT 13C	Installed rebuilt pump and new flow meter	8/10/2016	Aerotek
ICT 13A	Installed rebuilt pump, new flow meter, and new 1" unions	8/24/2016	Aerotek
ICT 14E	Installed new mechanical flow meter	8/26/2016	Aerotek
ICT 12C	Repaired flow meter	8/30/2016	Aerotek
ICT 2	Installed rebuilt pump and new flow meter	8/31/2016	Aerotek
ICT 14C	Cleaned and adjusted level probes	9/7/2016	Aerotek
ICT 14C	Replaced level probes	9/12/2016	Aerotek
ICT 14C	Installed new level probe wire and level probes	9/21/2016	Aerotek
ICT 12C	Installed rebuilt pump, new electric motor, new wiring harness, new level probe wire, and new level probes	9/27/2016	Aerotek
ICT 14C	Cleaned and adjusted level probes	10/14/2016	Aerotek
ICT 13C	Cleaned and adjusted level probes	10/21/2016	Aerotek
ICT 13B	Installed rebuilt pump	10/25/2016	Aerotek
ICT 14D	Installed rebuilt pump	10/27/2016	Aerotek
ICT 13C	Replaced low level probe	11/8/2016	Aerotek
ICT 13B	Replaced relay base plate	11/8/2016	Aerotek
ICT 13E	Cleaned and adjusted low level probe	11/15/2016	Aerotek
ICT 13B	Replaced broken relay base plate and bad level probe wire	11/17/2016	Aerotek
ICT 13C	Cleaned and repaired leaking flow meter	11/18/2016	Aerotek
ICT 13B	Cleaned and adjusted low level probe	11/18/2016	Aerotek
ICT 13A, 13B, & 13E	Cleaned and adjusted low level probes	12/2/2016	Aerotek
ICT 13C & 14C	Pulled piping and pumps	2/8/2017	Aerotek
ICT 14C	Installed new electric motor	2/8/2017	Aerotek
ICT 13C & 14C	Installed rebuilt grundfos pumps	2/8/2017	Aerotek
ICT 7, 13A, & 14D	Repaired sample ports	2/9/2017	Aerotek
ICT 13B & 14E	Cleaned and adjusted low level probes	3/30/2017	Aerotek
ICT 13B & 13F	Installed new flow meters	3/30/2017	Aerotek
ICT 12B	Repaired flow meter	4/13/2017	Aerotek
ICT 12C	Replaced broken 1" tee	5/1/2017	Aerotek
ICT 11	Installed new manual flow meter	5/5/2017	Aerotek
ICT 2	Installed new flow meter	5/9/2017	Aerotek
ICT 14C & 14D	Cleaned and adjusted low level probes	5/31/2017	Aerotek
ICT 14C	Cleaned and adjusted low level probe	6/27/2017	Aerotek
ICT 8	Cleaned low level probe	7/11/2017	Aerotek
ICT 2 & 14D	Cleaned and replaced level probes	7/17/2017	Aerotek
ICT 14C	Cleaned low level probe	7/24/2017	Aerotek

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 13A	Installed new pump and flow meter	8/8/2017	Aerotek
ICT 13C & 13B	Installed new pump and flow meter	8/9/2017	Aerotek
ICT 13B	Installed new low level probe	8/10/2017	Aerotek
ICT 11	Installed new pump and flow meter	8/11/2017	Aerotek
ICT 4	Replaced low level probe	8/11/2017	Aerotek
ICT 2	Installed rebuilt pump	9/19/2017	Aerotek
ICT 13D	Adjusted level probes	9/22/2017	Aerotek
ICT 14C	Cleaned level probes	10/11/2017	Bhate
ICT 13E	Cleaned and adjusted level probes	10/24/2017	Bhate
ICT 12B	Adjust level probes	11/15/2017	Bhate
ICT 14D	Cleaned level probes	11/15/2017	Bhate
ICT 8	Cleaned and adjusted level probes	11/28/2017	Bhate
ICT 2	Cleaned level probes	12/20/2017	Bhate
ICT 13C	Installed new flow meter	1/30/2018	Bhate
ICT 14C	Cleaned level probes	1/30/2018	Bhate
ICT 13C	Cleaned and adjusted level probes	2/1/2018	Bhate
ICT 13B	Repaired broken 1" union	2/1/2018	Bhate
ICT 14A	Repaired two broken 1" elbows and lowered high level probe	2/1/2018	Bhate
ICT 14B	Repaired broken 1" tee and lowered high level probe	2/1/2018	Bhate
ICT 14D	Installed new flow meter	2/8/2018	Bhate
ICT 8	Replaced broken 1" tee and cleaned level probes	2/8/2018	Bhate
ICT 14D	Cleaned level probes	2/28/2018	Bhate
ICT 14C	Replaced low level probe	2/28/2018	Bhate
ICT 13B	Cleaned level probes	2/28/2018	Bhate
ICT 13A	Installed new motor and replaced leaking 1" union	3/14/2018	Bhate
ICT 13C	Cleaned and adjusted level probes	3/21/2018	Bhate
ICT 12B	Replaced broken 1" elbow and installed new flow meter	3/21/2018	Bhate
ICT 2	Installed new pump	3/22/2018	Bhate
ICT 13B	Replaced level probes	3/30/2018	Bhate
ICT 14E	Lowered high level probe	3/30/2018	Bhate
ICT 14C	Cleaned level probes	4/27/2018	Bhate
ICT 11	Installed new breaker	4/27/2018	Bhate
ICT 14E	Cleaned level probes	6/7/2018	Bhate
ICT 12C	Cleaned level probes	6/7/2018	Bhate
EW 01	Cleaned level probes	6/7/2018	Bhate
ICT 14E	Replaced level probes	6/8/2018	Bhate
ICT 11	Installed new electrical wire from breaker to well	6/14/2018	Bhate
ICT 12B	Replaced pump	6/25/2018	Bhate
ICT 14E	Cleaned level probes	6/26/2018	Bhate
ICT 8	Cleaned level probes	6/26/2018	Bhate
ICT 14C	Replaced pump	6/27/2018	Bhate
EW01	Replaced level probes	9/12/2018	Bhate
ICT 7	Cleaned level probes	9/12/2018	Bhate
ICT 12C	Replaced low level probe wire and probe	9/12/2018	Bhate
ICT 14D	Replaced high level probe wire and probe	9/13/2018	Bhate
ICT 12B	Replaced high and low level probe wires and probes	9/13/2018	Bhate
ICT 12B	Replaced electrical relay and relay base plate	9/13/2018	Bhate
ICT 14C	Cleaned level probes	9/13/2018	Bhate
ICT 13E	Replaced flow meter	9/14/2018	Bhate
ICT 14D	Replace low level probe	10/31/2018	Bhate
ICT 8	Cleaned level probes	10/31/2018	Bhate
ICT 14C	Cleaned level probes	10/31/2018	Bhate
ICT 13A	Replaced broken 1" Tee	12/12/2018	Bhate
ICT 14C	Cleaned level probes	12/12/2018	Bhate
ICT 13A	Installed new flow meter	2/14/2019	Bhate

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 12D	Replaced pump and motor	3/6/2019	Bhate
ICT 13C	Replaced pump	3/8/2019	Bhate
ICT 2	Replaced pump and flow meter	3/11/2019	Bhate
ICT 14C	Replaced pump and motor	3/12/2019	Bhate
ICT 14D	Replaced pump	3/12/2019	Bhate
ICT 14E	Replaced pump, seal plate and level probes	3/14/2019	Bhate
ICT 14A	Replaced pump and repaired leaking 1" pipe	3/15/2019	Bhate
ICT 13C	Lowered high level probe	3/22/2019	Bhate
ICT 14A	Lowered high level probe	3/22/2019	Bhate
EW-01	Replaced pump	3/29/2019	Bhate
ICT 8	Cleaned level probes	4/1/2019	Bhate
ICT 12C	Cleaned level probes	4/1/2019	Bhate
ICT 13D	Cleaned level probes	4/1/2019	Bhate
ICT 14E	Replaced bad relay	4/2/2019	Bhate
ICT 12A	Replaced flow meter	4/3/2019	Bhate
ICT 13F	Replaced flow meter	4/3/2019	Bhate
ICT 13D	Replaced low level probe	4/3/2019	Bhate
ICT 13C	Cleaned level probes	5/8/2019	Bhate
ICT 14 C	Cleaned level probes	5/8/2019	Bhate
ICT 12D	Replaced bad relay	5/8/2019	Bhate
ICT 13A	Replaced pump	7/10/2019	Bhate
ICT 13D	Replaced pump	7/17/2019	Bhate
ICT 14C	Cleaned level probes	9/25/2019	Bhate
ICT 14D	Cleaned level probes	9/25/2019	Bhate
ICT 12D	Cleaned level probes	10/2/2019	Bhate
ICT 13B	Cleaned level probes	10/2/2019	Bhate
ICT 13C	Cleaned level probes	10/2/2019	Bhate
ICT 14E	Cleaned level probes	10/2/2019	Bhate
18WW17	Installed double wall pipe	10/28/2019	Bhate
ICT 12D	Replaced fuse	4/15/2020	Bhate
ICT 14C	Cleaned level probes	4/16/2020	Bhate
ICT 12B	Replaced coil in electrical panel	5/5/2020	Bhate
ICT 14D	Replaced coil in electrical panel	5/5/2020	Bhate
ICT 11	Replaced broken 1" union	5/12/2020	Bhate
ICT 13E	Replaced broken 1" union	5/12/2020	Bhate
ICT 14A	Replaced broken 1" tee	5/12/2020	Bhate
ICT 14C	Cleaned level probes	5/12/2020	Bhate
ICT 14A	Cleaned level probes	5/12/2020	Bhate
ICT 7	Cleaned level probes	5/12/2020	Bhate
ICT 13C	Replaced pump	5/13/2020	Bhate
ICT 13C	Replaced broken 1" union and 1" nipple	5/13/2020	Bhate
ICT 13B	Replaced pump	5/19/2020	Bhate
ICT 13B	Replaced flow meter	5/19/2020	Bhate
ICT 2	Replaced pump	5/20/2020	Bhate

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
	LHAAP-16		
EW08	New pump	2/28/2011	Shaw
EW01	Rebuilt pump	8/25/2011	Shaw
EW06	Rebuilt pump	8/25/2011	Shaw
EW02	Rebuilt pump	2/12/2012	Shaw
EW03	Rebuilt pump	2/12/2012	Shaw
EW08	Rebuilt pump	11/8/2012	AECOM
EW01	Rebuilt pump	11/8/2012	AECOM
EW04	Repaired pump	11/13/2012	AECOM
EW07	Rebuilt pump	11/13/2012	AECOM
EW04	Installed new pump	11/28/2012	AECOM
EW06	Installed new pump	11/28/2012	AECOM
EW02	Installed new pump	12/4/2012	AECOM
EW03	Installed new pump	12/4/2012	AECOM
EW01	Installed new pump	12/17/2012	AECOM
EW01	Replaced low level probe	1/17/2015	AECOM
EW01	Cleaned and adjusted level probes	10/21/2016	Aerotek

APPENDIX B
GROUNDWATER ELEVATION CONTOUR MAPS

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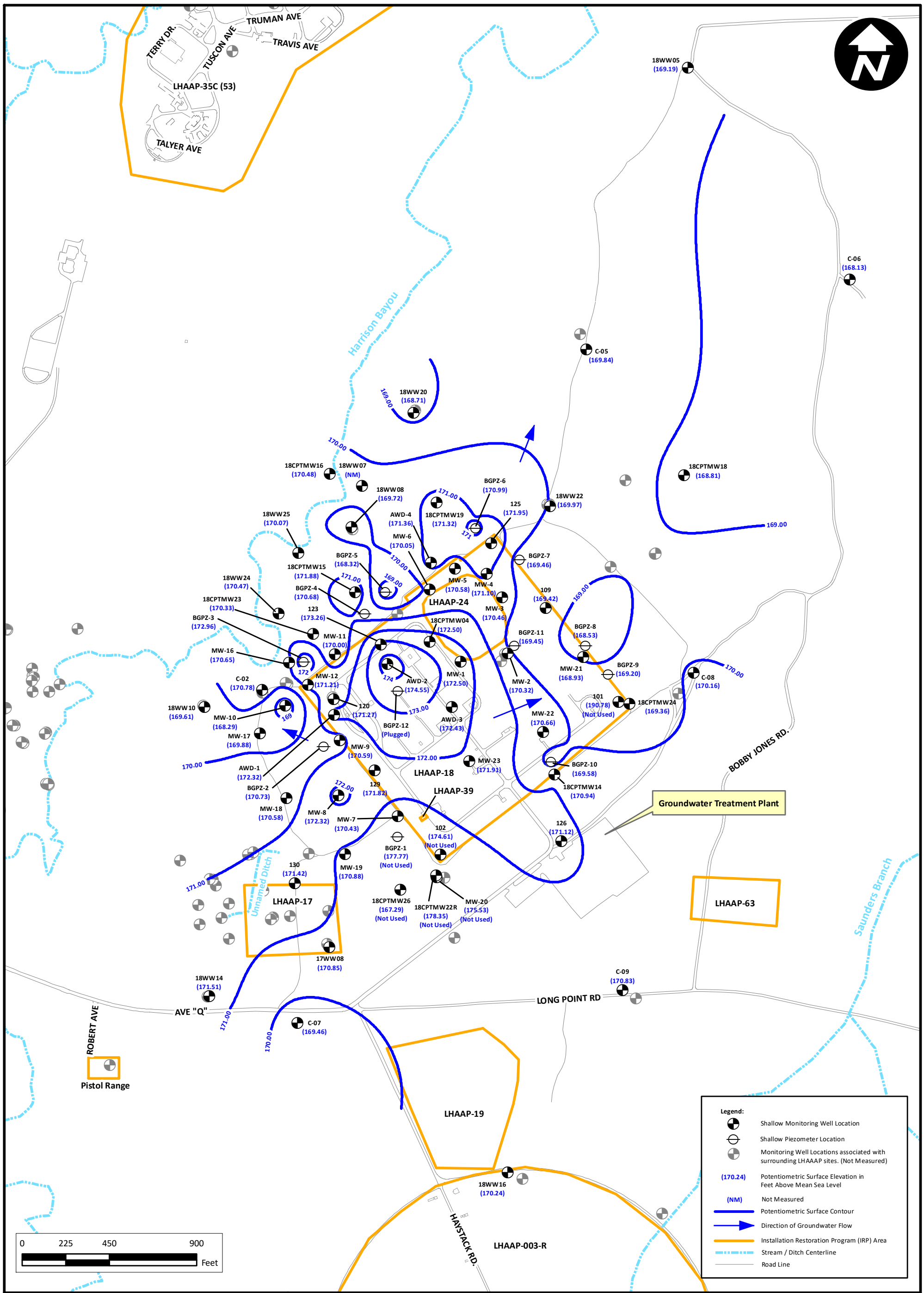

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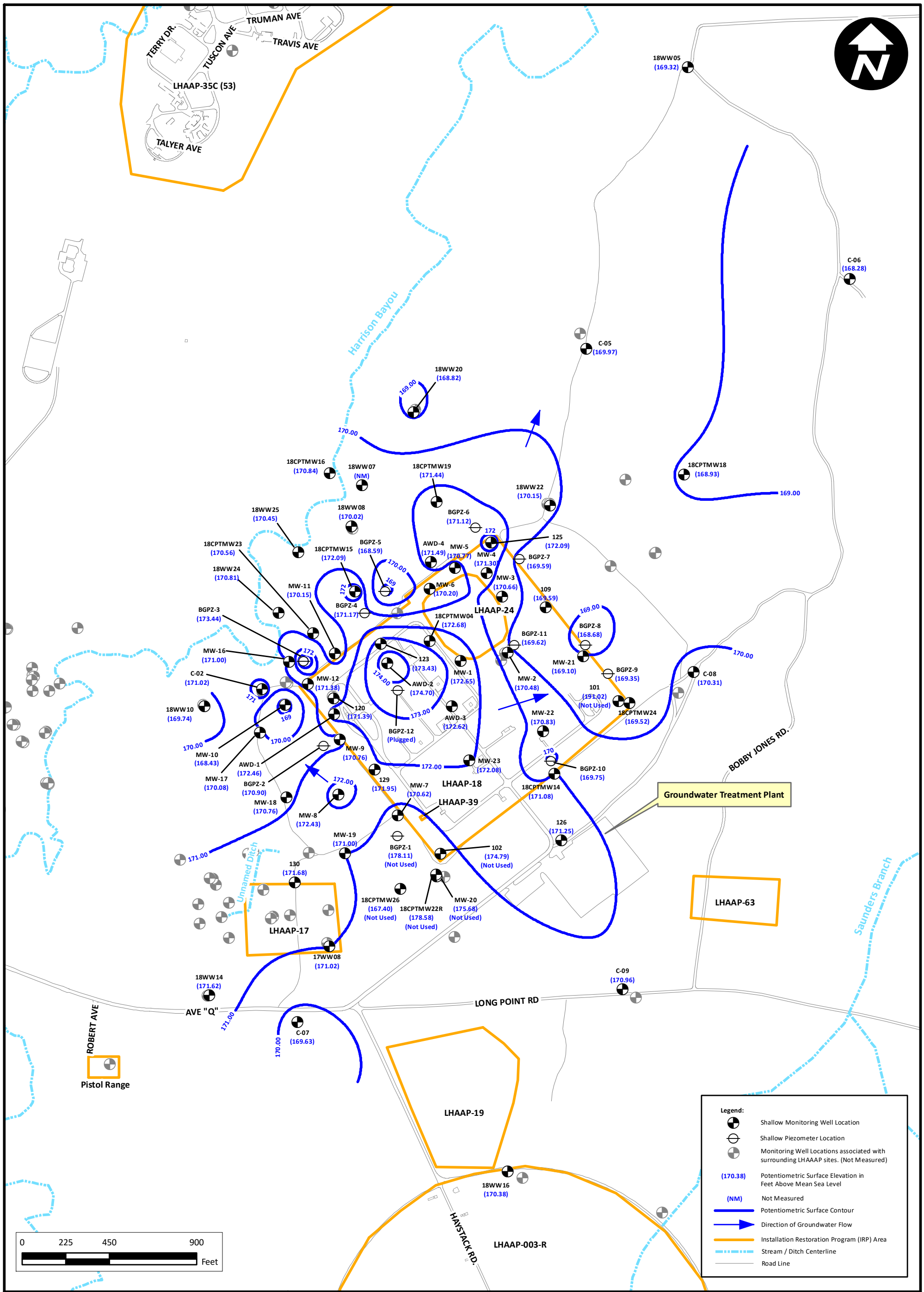
Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	7/27/2020	MRM

Groundwater Potentiometric Surface Map
Shallow Zone (April 29, 2020) LHAAP-18/24

Figure B-1



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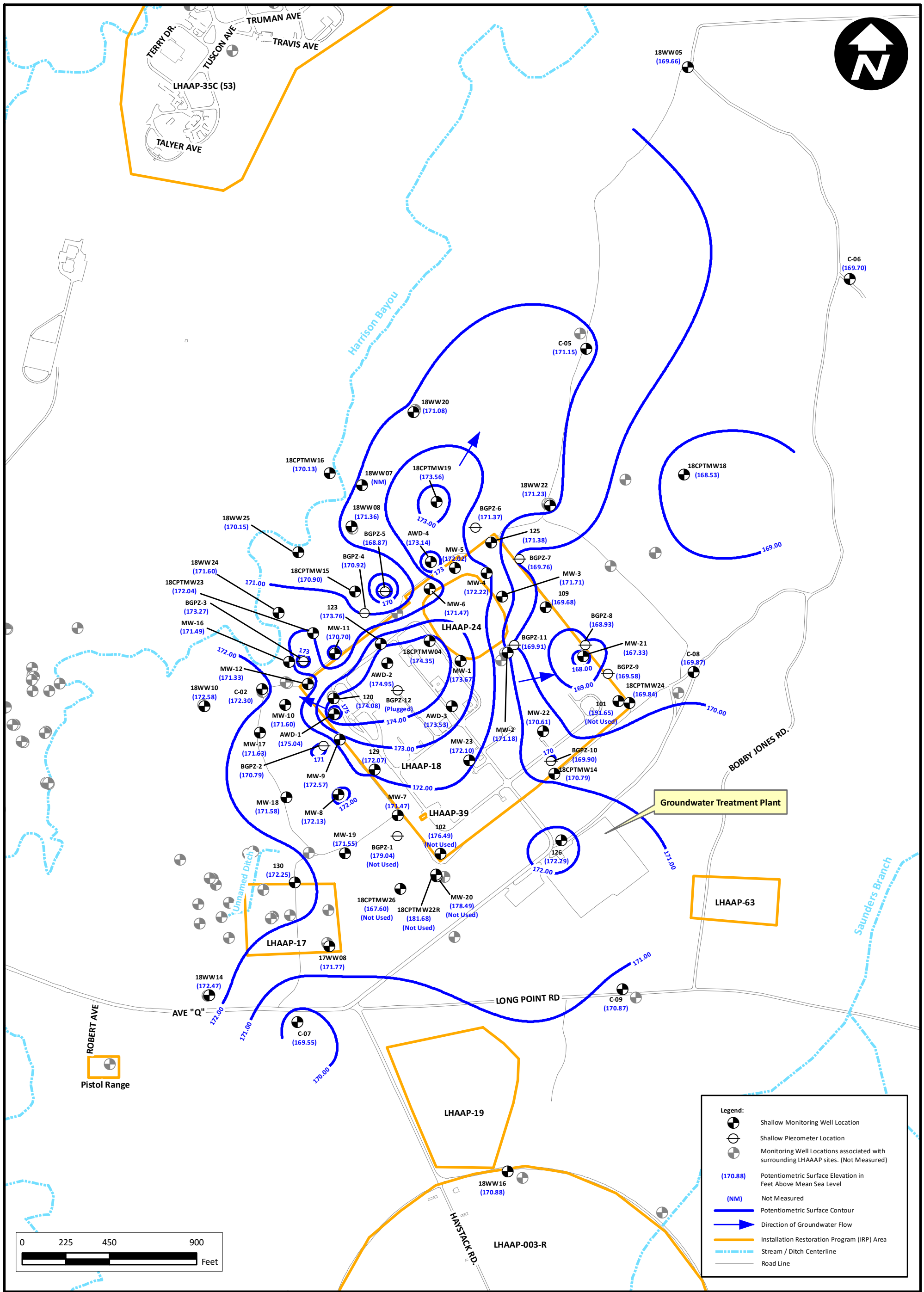
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	7/27/2020	MRM

Groundwater Potentiometric Surface Map
Shallow Zone (May 28, 2020) LHAAP-18/24

Figure B-2



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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	7/27/2020	MRM

Groundwater Potentiometric Surface Map
Shallow Zone (June 30, 2020) LHAAP-18/24

Figure B-3

TALYER AVE
LHAAP-35C (53)
Harrison Bayou
18WW04 (168.59)
18WW19 (168.58)
18CPTMW19SW (167.98)
18WW21 (169.85)
C-04 (170.80)
C-04A (171.02) (Not Used)
C-03 (170.14)
18WW18 (170.27)
18WW09 (169.12)
MW-14 (173.26)
18CPTMW08SW (170.18)
18CPTMW08DW (170.02)
18WW06 (170.76)
18WW02 (171.08) (Not Used)
18CPTMW23SW (169.98)
LHAAP-24
18CPTMW04SW (170.13)
18CPTMW01SW (171.21) (Not Used)
18CPTMW07 (170.25)
18CPTMW01DW (170.29)
MW-13 (170.37)
18WW03 (169.54)
18WW11 (169.29)
LHAAP-18
18CPTMW06 (170.01)
18CPTMW03SW (169.83)
BOBBY JONES RD.
18CPTMW10DW (170.26)
18CPTMW10SW (170.35)
Groundwater Treatment Plant
18CPTMW12SW (170.52)
18CPTMW12DW (170.44)
LHAAP-39
18CPTMW22SW (170.17)
18CPTMW26SW (170.17)
Unnamed Ditch
LHAAP-63
Saunders Branch
18CPTMW22DW (169.40)
C-01 (170.42)
LHAAP-17
18WW15 (171.74)
AVE "Q"
LONG POINT RD
C-10 (170.79)
ROBERT AVE
Pistol Range
LHAAP-19
18WW01 (170.86)
HAYSTACK R.D.
LHAAP-003-R
168.50
168
169.00
169.50
170.00
170.50
171.00
171.50
172.00
172.50

0 225 450 900 Feet

Legend:
- Wilcox Zone Monitoring Well Location
- Monitoring Well Locations associated with surrounding LHAAAP sites. (Not Measured)
- (170.86) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

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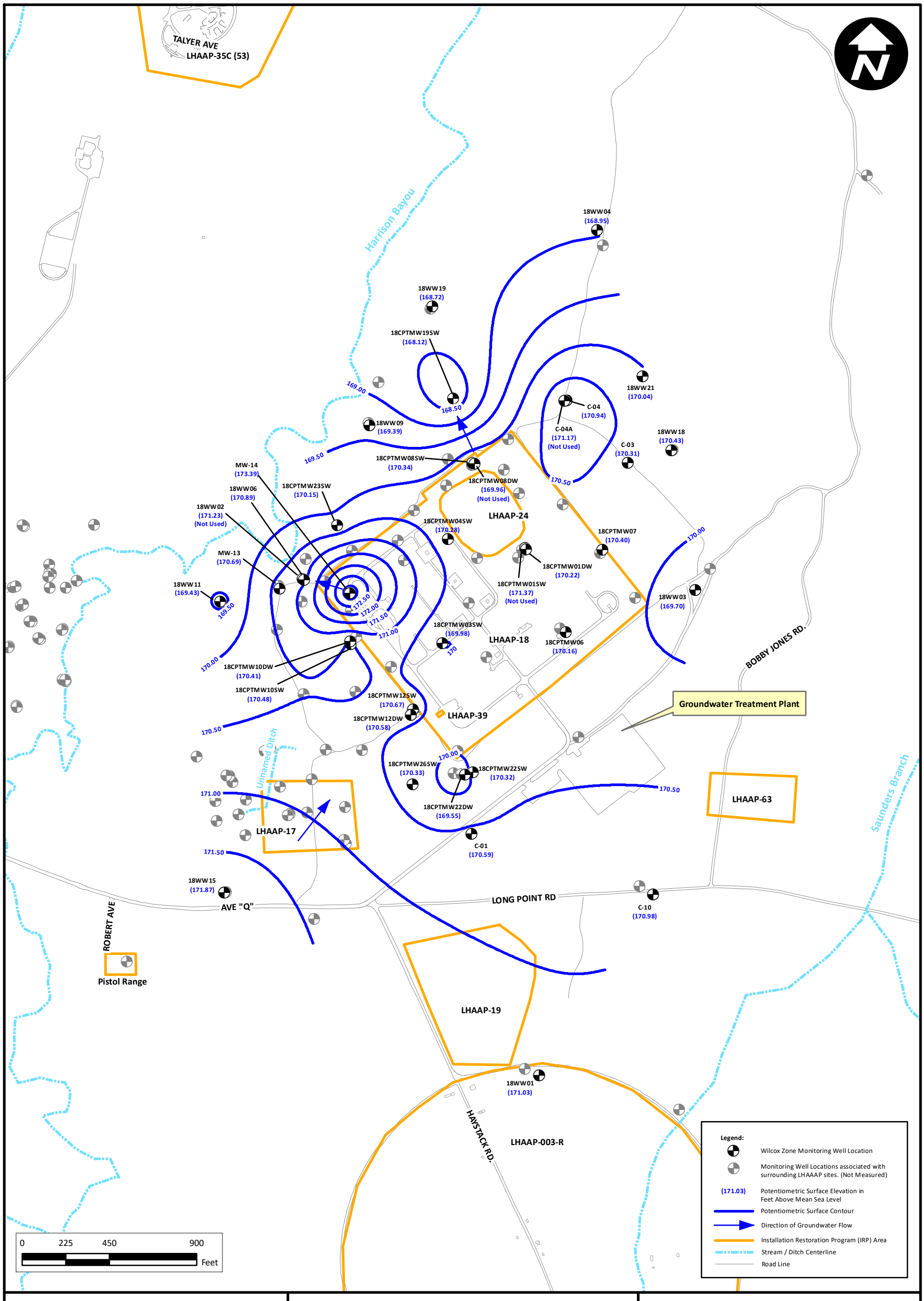
Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	7/27/2020	MRM

Groundwater Potentiometric Surface Map
Wilcox Zone (April 29, 2020) LHAAP-18/24

Figure B-4



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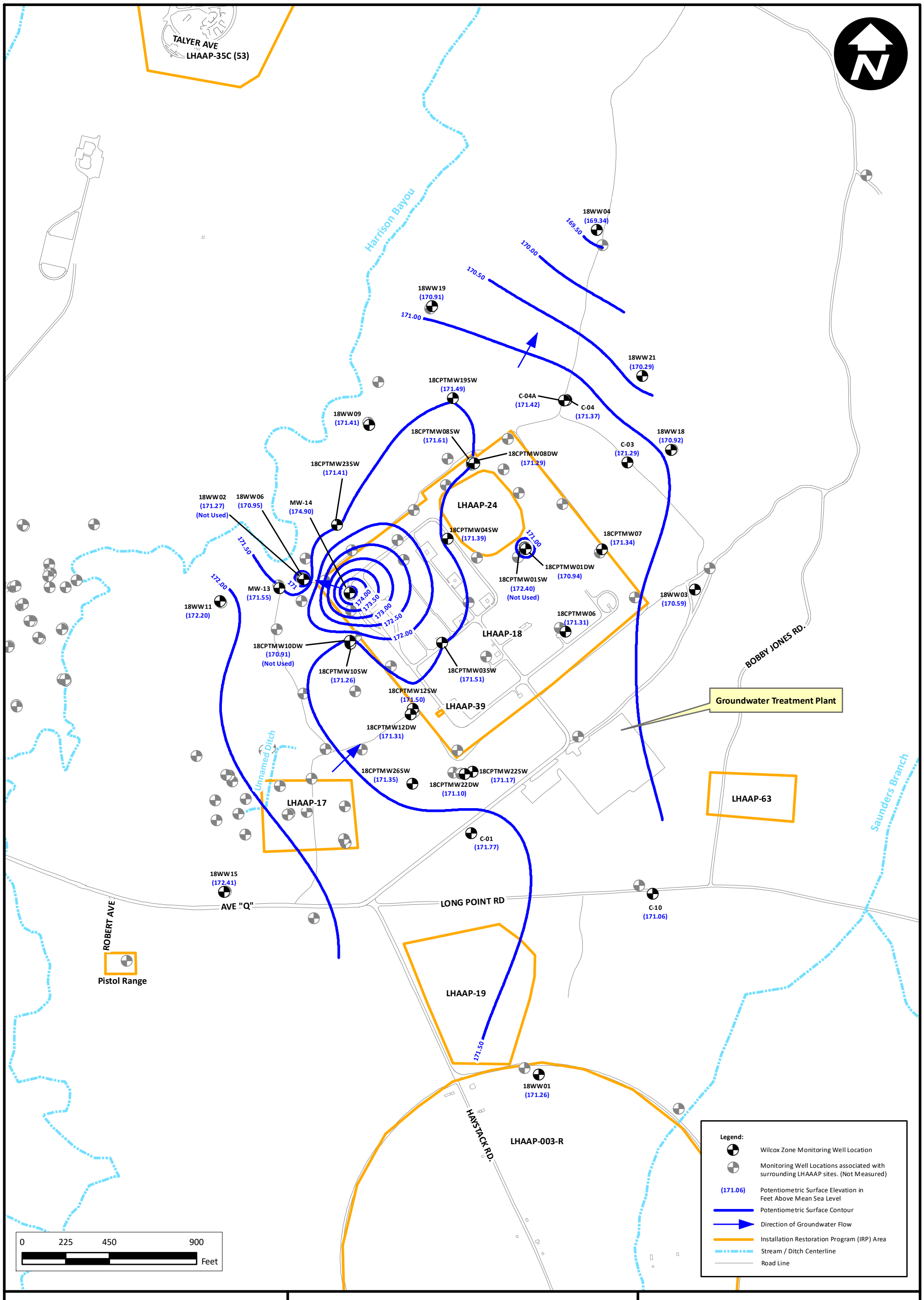
Quarterly Evaluation Report 2nd Quarter (April – June) 2020
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	7/27/2020	MRM

Groundwater Potentiometric Surface Map
Wilcox Zone (May 28, 2020) LHAAP-18/24

Figure B-5



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Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	7/27/2020	MRM

Groundwater Potentiometric Surface Map
Wilcox Zone (June 30, 2020) LHAAP-18/24

Figure B-6

APPENDIX C
LABORATORY ANALYTICAL RESULTS FOR LHAAP-18/24
(PROVIDED ELECTRONICALLY AS A SEPARATE FILE)

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

June 18, 2020

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

Work Order: **HS20060133**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 10 sample(s) on Jun 03, 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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060133

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060133-01	18CPTMW22SW_060120	Groundwater		01-Jun-2020 07:50	03-Jun-2020 09:05	☐
HS20060133-02	MW20_060120	Groundwater		01-Jun-2020 08:40	03-Jun-2020 09:05	☐
HS20060133-03	18CPTMW22DW_060120	Groundwater		01-Jun-2020 09:30	03-Jun-2020 09:05	☐
HS20060133-04	18CPTMW22R_060120	Groundwater		01-Jun-2020 10:20	03-Jun-2020 09:05	☐
HS20060133-05	18CPTMW26SW_060120	Groundwater		01-Jun-2020 11:10	03-Jun-2020 09:05	☐
HS20060133-06	MW8_060120	Groundwater		01-Jun-2020 12:00	03-Jun-2020 09:05	☐
HS20060133-07	18WW22_060120	Groundwater		01-Jun-2020 13:05	03-Jun-2020 09:05	☐
HS20060133-08	C04_060120	Groundwater		01-Jun-2020 13:55	03-Jun-2020 09:05	☐
HS20060133-09	C04_060120_a	Groundwater		01-Jun-2020 13:55	03-Jun-2020 09:05	☐
HS20060133-10	Trip Blank	Water	CG-042320-29	01-Jun-2020 00:00	03-Jun-2020 09:05	☐

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060133

CASE NARRATIVE

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: 154162

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

GCMS Volatiles by Method SW8260

Batch ID: R362756

Sample ID: VLCSW-200605

• 1,2,3_Trichlorobenzene and Methylene Chloride exceeded QC limits for LCS. Samples are ND for these compounds.

Sample ID: HS20060114-01MS

• MS and MSD are for an unrelated sample

Metals by Method SW7470

Batch ID: 154514

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

Metals by Method SW6020

Batch ID: 154143

Sample ID: HS20060202-01MS

• MS and MSD are for an unrelated sample

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22SW_060120
Collection Date: 01-Jun-2020 07:50

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-01
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	05-Jun-2020 17:01
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 17:01
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 17:01
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 17:01
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 17:01
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 17:01
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22SW_060120
Collection Date: 01-Jun-2020 07:50

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-01
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	05-Jun-2020 17:01
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 17:01
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 17:01
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:01
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:01
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:01
Surr: 1,2-Dichloroethane-d4	*87.3*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 17:01*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 17:01*
Surr: Dibromofluoromethane	*90.5*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 17:01*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 17:01*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**2.5**		**0.10**	**0.10**	**0.10**	**ug/L**	10	17-Jun-2020 15:23
Surr: 2-Fluorobiphenyl	*77.4*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 15:23*
Surr: 4-Terphenyl-d14	*90.4*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 15:23*
Surr: Nitrobenzene-d5	*93.3*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 15:23*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22SW_060120
Collection Date: 01-Jun-2020 07:50

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.187**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 09:59
Antimony	**0.000475**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Arsenic	**0.00286**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Barium	**0.0520**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 09:59
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 09:59
Calcium	**9.29**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 09:59
Chromium	**0.0382**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Cobalt	0.000500	U	0.000100	0.000500	0.00500	mg/L	1	17-Jun-2020 09:59
Copper	**0.00134**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Iron	**0.0540**	J	**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 09:59
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 09:59
Magnesium	**0.292**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 09:59
Manganese	**0.00768**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Nickel	**0.00101**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Potassium	**238**		**0.180**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 00:45
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 09:59
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 09:59
Sodium	**217**		**0.140**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 00:45
Thallium	**0.000256**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 09:59
Vanadium	**0.00764**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
Zinc	**0.00449**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 09:59
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:38
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW20_060120
Collection Date: 01-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 17:25
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 17:25
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 17:25
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 17:25
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 17:25
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW20_060120
Collection Date: 01-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-02
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	05-Jun-2020 17:25
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 17:25
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 17:25
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:25
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:25
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 17:25*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 17:25*
Surr: Dibromofluoromethane	*88.8*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 17:25*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 17:25*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW20_060120
Collection Date: 01-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0977**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 10:02
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 10:02
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 10:02
Barium	**0.336**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:02
Cadmium	**0.000278**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 10:02
Calcium	**34.5**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 10:02
Chromium	**0.00543**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
Cobalt	**0.00513**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
Copper	**0.00166**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
Iron	**0.656**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:02
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 10:02
Magnesium	**9.68**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:02
Manganese	**0.175**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
Nickel	**0.388**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
Potassium	**0.646**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:02
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 10:02
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 10:02
Sodium	**43.1**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:02
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:02
Vanadium	**0.000613**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
Zinc	**0.00453**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:02
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:40
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22DW_060120
Collection Date: 01-Jun-2020 09:30

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-03
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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 17:49
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 17:49
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 17:49
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 17:49
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 17:49
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22DW_060120
Collection Date: 01-Jun-2020 09:30

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-03
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	05-Jun-2020 17:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 17:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 17:49
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 17:49
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 17:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 17:49
Surr: 1,2-Dichloroethane-d4	*86.7*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 17:49*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 17:49*
Surr: Dibromofluoromethane	*90.3*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 17:49*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 17:49*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.92**		**0.050**	**0.050**	**0.050**	**ug/L**	5	17-Jun-2020 15:43
Surr: 2-Fluorobiphenyl	*92.9*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 15:43*
Surr: 4-Terphenyl-d14	*79.3*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 15:43*
Surr: Nitrobenzene-d5	*65.4*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 15:43*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22DW_060120
Collection Date: 01-Jun-2020 09:30

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0421**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 10:04
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 10:04
Arsenic	**0.00396**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:04
Barium	**0.0880**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:04
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:04
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:04
Calcium	**11.0**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 10:04
Chromium	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 10:04
Cobalt	**0.000132**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:04
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	17-Jun-2020 10:04
Iron	**1.31**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:04
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 10:04
Magnesium	**5.39**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:04
Manganese	**0.0401**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:04
Nickel	**0.00120**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:04
Potassium	**2.39**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:04
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 10:04
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 10:04
Sodium	**211**		**0.140**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 00:50
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:04
Vanadium	**0.00133**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:04
Zinc	**0.00342**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:04
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:42
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22R_060120
Collection Date: 01-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-04
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	05-Jun-2020 18:13
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 18:13
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 18:13
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 18:13
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 18:13
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 18:13
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22R_060120
Collection Date: 01-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-04
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	05-Jun-2020 18:13
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 18:13
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 18:13
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:13
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:13
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:13
Surr: 1,2-Dichloroethane-d4	*87.0*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 18:13*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 18:13*
Surr: Dibromofluoromethane	*90.5*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 18:13*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 18:13*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.44**		**0.050**	**0.050**	**0.050**	**ug/L**	5	17-Jun-2020 16:02
Surr: 2-Fluorobiphenyl	*95.0*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 16:02*
Surr: 4-Terphenyl-d14	*77.7*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 16:02*
Surr: Nitrobenzene-d5	*70.6*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 16:02*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW22R_060120
Collection Date: 01-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.566**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 10:34
Antimony	**0.00185**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Arsenic	**0.000807**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Barium	**0.0211**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Beryllium	**0.000307**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 10:34
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:34
Calcium	**0.293**	J	**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 10:34
Chromium	**0.000618**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Cobalt	**0.00292**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	17-Jun-2020 10:34
Iron	**0.600**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:34
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 10:34
Magnesium	**0.327**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:34
Manganese	**0.0266**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Nickel	**0.00190**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Potassium	**0.139**	J	**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:34
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 10:34
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 10:34
Sodium	**16.7**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:34
Thallium	**0.000623**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 10:34
Vanadium	**0.00195**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
Zinc	**0.00452**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:34
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:43
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW26SW_060120
Collection Date: 01-Jun-2020 11:10

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 18:37
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 18:37
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 18:37
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 18:37
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 18:37
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW26SW_060120
Collection Date: 01-Jun-2020 11:10

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-05
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	05-Jun-2020 18:37
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 18:37
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 18:37
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 18:37
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 18:37
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 18:37
Surr: 1,2-Dichloroethane-d4	*86.1*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 18:37*
Surr: 4-Bromofluorobenzene	*99.8*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 18:37*
Surr: Dibromofluoromethane	*89.4*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 18:37*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 18:37*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.2**		**0.10**	**0.10**	**0.10**	**ug/L**	10	17-Jun-2020 16:22
Surr: 2-Fluorobiphenyl	*93.4*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 16:22*
Surr: 4-Terphenyl-d14	*80.7*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 16:22*
Surr: Nitrobenzene-d5	*96.9*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 16:22*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW8_060120
Collection Date: 01-Jun-2020 12:00

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-06
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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,2-Dichloroethane	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 14:37
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 14:37
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 14:37
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 14:37
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 14:37
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 14:37
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW8_060120
Collection Date: 01-Jun-2020 12:00

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-06
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	05-Jun-2020 14:37
cis-1,2-Dichloroethene	**11**		**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 14:37
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 14:37
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 14:37
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 14:37
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:37
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
Trichloroethene	**120**		**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 14:37
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:37
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:37
Surr: 1,2-Dichloroethane-d4	*86.9*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 14:37*
Surr: 4-Bromofluorobenzene	*99.9*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 14:37*
Surr: Dibromofluoromethane	*89.7*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 14:37*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 14:37*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.8**		**0.10**	**0.10**	**0.10**	**ug/L**	10	17-Jun-2020 16:42
Surr: 2-Fluorobiphenyl	*77.3*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 16:42*
Surr: 4-Terphenyl-d14	*94.6*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 16:42*
Surr: Nitrobenzene-d5	*133*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 16:42*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW22_060120
Collection Date: 01-Jun-2020 13:05

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-07
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	05-Jun-2020 19:01
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 19:01
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 19:01
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 19:01
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 19:01
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 19:01
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW22_060120
Collection Date: 01-Jun-2020 13:05

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-07
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	05-Jun-2020 19:01
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 19:01
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 19:01
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:01
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:01
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:01
Surr: 1,2-Dichloroethane-d4	*87.0*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 19:01*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 19:01*
Surr: Dibromofluoromethane	*90.0*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 19:01*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 19:01*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.63**		**0.050**	**0.050**	**0.050**	**ug/L**	5	17-Jun-2020 17:01
Surr: 2-Fluorobiphenyl	*96.4*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 17:01*
Surr: 4-Terphenyl-d14	*85.7*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 17:01*
Surr: Nitrobenzene-d5	*95.8*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 17:01*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW22_060120
Collection Date: 01-Jun-2020 13:05

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.123**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 10:37
Antimony	**0.000775**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Arsenic	**0.00150**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Barium	**0.0721**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:37
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:37
Calcium	**11.1**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 10:37
Chromium	**0.0154**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Cobalt	**0.000179**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	17-Jun-2020 10:37
Iron	**0.0349**	J	**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:37
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 10:37
Magnesium	**2.03**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:37
Manganese	**0.00171**	J	**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Nickel	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 10:37
Potassium	**3.69**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:37
Selenium	**0.00117**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 10:37
Sodium	**30.9**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:37
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:37
Vanadium	**0.0157**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:37
Zinc	0.00250	U	0.00200	0.00250	0.00500	mg/L	1	17-Jun-2020 10:37
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:45
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: C04_060120
Collection Date: 01-Jun-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-08
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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 13:25
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 13:25
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 13:25
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 13:25
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 13:25
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: C04_060120
Collection Date: 01-Jun-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-08
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	05-Jun-2020 13:25
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 13:25
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 13:25
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:25
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:25
Surr: 1,2-Dichloroethane-d4	*87.5*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 13:25*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 13:25*
Surr: Dibromofluoromethane	*91.4*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 13:25*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 13:25*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: C04_060120_a
Collection Date: 01-Jun-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-09
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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 13:49
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 13:49
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 13:49
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 13:49
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 13:49
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: C04_060120_a
Collection Date: 01-Jun-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-09
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	05-Jun-2020 13:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 13:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 13:49
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 13:49
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 13:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 13:49
Surr: 1,2-Dichloroethane-d4	*87.7*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 13:49*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 13:49*
Surr: Dibromofluoromethane	*90.6*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 13:49*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 13:49*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 01-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-10
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	05-Jun-2020 14:13
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 14:13
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 14:13
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 14:13
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 14:13
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 14:13
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 01-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060133
Lab ID:HS20060133-10
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	05-Jun-2020 14:13
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 14:13
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 14:13
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 14:13
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 14:13
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 14:13
Surr: 1,2-Dichloroethane-d4	*87.8*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 14:13*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 14:13*
Surr: Dibromofluoromethane	*89.5*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 14:13*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 14:13*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

Batch ID: 154143 **Start Date:** 05 Jun 2020 10:00 **End Date:** 05 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060133-01		10 (mL)	10 (mL)	1
HS20060133-02		10 (mL)	10 (mL)	1
HS20060133-03		10 (mL)	10 (mL)	1
HS20060133-04		10 (mL)	10 (mL)	1
HS20060133-07		10 (mL)	10 (mL)	1

Batch ID: 154162 **Start Date:** 05 Jun 2020 09:00 **End Date:** 05 Jun 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
HS20060133-01	1	1000 (mL)	1 (mL)	0.001
HS20060133-03	1	1000 (mL)	1 (mL)	0.001
HS20060133-04	1	1000 (mL)	1 (mL)	0.001
HS20060133-05	1	1000 (mL)	1 (mL)	0.001
HS20060133-06	1	1000 (mL)	1 (mL)	0.001
HS20060133-07	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154514 **Start Date:** 16 Jun 2020 11:00 **End Date:** 16 Jun 2020 13:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060133-01		10 (mL)	10 (mL)	1
HS20060133-02		10 (mL)	10 (mL)	1
HS20060133-03		10 (mL)	10 (mL)	1
HS20060133-04		10 (mL)	10 (mL)	1
HS20060133-07		10 (mL)	10 (mL)	1

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154143 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060133-01	18CPTMW22SW_060120	01 Jun 2020 07:50		05 Jun 2020 14:00	17 Jun 2020 09:59	1
HS20060133-01	18CPTMW22SW_060120	01 Jun 2020 07:50		05 Jun 2020 14:00	13 Jun 2020 00:45	10
HS20060133-02	MW20_060120	01 Jun 2020 08:40		05 Jun 2020 14:00	17 Jun 2020 10:02	1
HS20060133-03	18CPTMW22DW_060120	01 Jun 2020 09:30		05 Jun 2020 14:00	17 Jun 2020 10:04	1
HS20060133-03	18CPTMW22DW_060120	01 Jun 2020 09:30		05 Jun 2020 14:00	13 Jun 2020 00:50	10
HS20060133-04	18CPTMW22R_060120	01 Jun 2020 10:20		05 Jun 2020 14:00	17 Jun 2020 10:34	1
HS20060133-07	18WW22_060120	01 Jun 2020 13:05		05 Jun 2020 14:00	17 Jun 2020 10:37	1
Batch ID: 154162 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060133-01	18CPTMW22SW_060120	01 Jun 2020 07:50		05 Jun 2020 13:59	17 Jun 2020 15:23	10
HS20060133-03	18CPTMW22DW_060120	01 Jun 2020 09:30		05 Jun 2020 13:59	17 Jun 2020 15:43	5
HS20060133-04	18CPTMW22R_060120	01 Jun 2020 10:20		05 Jun 2020 13:59	17 Jun 2020 16:02	5
HS20060133-05	18CPTMW26SW_060120	01 Jun 2020 11:10		05 Jun 2020 13:59	17 Jun 2020 16:22	10
HS20060133-06	MW8_060120	01 Jun 2020 12:00		05 Jun 2020 13:59	17 Jun 2020 16:42	10
HS20060133-07	18WW22_060120	01 Jun 2020 13:05		05 Jun 2020 13:59	17 Jun 2020 17:01	5
Batch ID: 154514 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060133-01	18CPTMW22SW_060120	01 Jun 2020 07:50		16 Jun 2020 11:00	16 Jun 2020 16:38	1
HS20060133-02	MW20_060120	01 Jun 2020 08:40		16 Jun 2020 11:00	16 Jun 2020 16:40	1
HS20060133-03	18CPTMW22DW_060120	01 Jun 2020 09:30		16 Jun 2020 11:00	16 Jun 2020 16:42	1
HS20060133-04	18CPTMW22R_060120	01 Jun 2020 10:20		16 Jun 2020 11:00	16 Jun 2020 16:43	1
HS20060133-07	18WW22_060120	01 Jun 2020 13:05		16 Jun 2020 11:00	16 Jun 2020 16:45	1
Batch ID: R362756 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060133-10	Trip Blank	01 Jun 2020 00:00			05 Jun 2020 14:13	1
Batch ID: R362756 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060133-01	18CPTMW22SW_060120	01 Jun 2020 07:50			05 Jun 2020 17:01	1
HS20060133-02	MW20_060120	01 Jun 2020 08:40			05 Jun 2020 17:25	1
HS20060133-03	18CPTMW22DW_060120	01 Jun 2020 09:30			05 Jun 2020 17:49	1
HS20060133-04	18CPTMW22R_060120	01 Jun 2020 10:20			05 Jun 2020 18:13	1
HS20060133-05	18CPTMW26SW_060120	01 Jun 2020 11:10			05 Jun 2020 18:37	1
HS20060133-06	MW8_060120	01 Jun 2020 12:00			05 Jun 2020 14:37	1
HS20060133-07	18WW22_060120	01 Jun 2020 13:05			05 Jun 2020 19:01	1
HS20060133-08	C04_060120	01 Jun 2020 13:55			05 Jun 2020 13:25	1
HS20060133-09	C04_060120_a	01 Jun 2020 13:55			05 Jun 2020 13:49	1

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24 **DATES REPORT**
WorkOrder: HS20060133

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R363383 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060133-01	18CPTMW22SW_060120	01 Jun 2020 07:50			17 Jun 2020 11:43	1
HS20060133-02	MW20_060120	01 Jun 2020 08:40			17 Jun 2020 11:43	1
HS20060133-03	18CPTMW22DW_060120	01 Jun 2020 09:30			17 Jun 2020 11:43	1
HS20060133-04	18CPTMW22R_060120	01 Jun 2020 10:20			17 Jun 2020 11:43	1
HS20060133-05	18CPTMW26SW_060120	01 Jun 2020 11:10			17 Jun 2020 11:43	1
HS20060133-06	MW8_060120	01 Jun 2020 12:00			17 Jun 2020 11:43	1
HS20060133-07	18WW22_060120	01 Jun 2020 13:05			17 Jun 2020 11:43	1
HS20060133-08	C04_060120	01 Jun 2020 13:55			17 Jun 2020 11:43	1
HS20060133-09	C04_060120_a	01 Jun 2020 13:55			17 Jun 2020 11:43	1

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:54**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622461** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **13-Jun-2020 00:19**
Client ID: Run ID: **ICPMS04_363205** SeqNo: **5618488** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1036	0.0100	0.1	0	104	84 - 117				
Antimony	0.04444	0.00500	0.05	0	88.9	85 - 117				
Arsenic	0.04839	0.00500	0.05	0	96.8	84 - 116				
Barium	0.04305	0.00500	0.05	0	86.1	86 - 114				
Beryllium	0.04253	0.00200	0.05	0	85.1	83 - 121				
Cadmium	0.04548	0.00200	0.05	0	91.0	87 - 115				
Calcium	4.915	0.500	5	0	98.3	87 - 118				
Chromium	0.04599	0.00500	0.05	0	92.0	85 - 116				
Cobalt	0.04668	0.00500	0.05	0	93.4	86 - 115				
Copper	0.04723	0.00500	0.05	0	94.5	85 - 118				
Iron	4.804	0.200	5	0	96.1	87 - 118				
Lead	0.04455	0.00500	0.05	0	89.1	88 - 115				
Magnesium	4.772	0.200	5	0	95.4	83 - 118				
Manganese	0.04766	0.00500	0.05	0	95.3	87 - 115				
Nickel	0.04851	0.00500	0.05	0	97.0	85 - 117				
Potassium	4.928	0.200	5	0	98.6	87 - 115				
Selenium	0.04925	0.00500	0.05	0	98.5	80 - 120				
Thallium	0.04384	0.00200	0.05	0	87.7	82 - 116				
Vanadium	0.04598	0.00500	0.05	0	92.0	86 - 115				
Zinc	0.04946	0.00500	0.05	0	98.9	83 - 119				

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:57**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622462** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	0.04405	0.00500	0.05	0	88.1	85 - 116				
Sodium	4.488	0.200	5	0	89.8	85 - 117				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:27**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622452** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4279	0.0100	0.2	0.1871	120	84 - 117				S
Antimony	0.05061	0.00500	0.05	0.000066	101	85 - 117				
Arsenic	0.05255	0.00500	0.05	0.00058	104	84 - 116				
Barium	0.1782	0.00500	0.05	0.1242	108	86 - 114				
Beryllium	0.05514	0.00200	0.05	0.000124	110	83 - 121				
Cadmium	0.05175	0.00200	0.05	0.00014	103	87 - 115				
Calcium	11.32	0.500	5	6.187	103	87 - 118				
Chromium	0.06117	0.00500	0.05	0.01191	98.5	85 - 116				
Cobalt	0.04819	0.00500	0.05	0.000522	95.3	86 - 115				
Copper	0.05324	0.00500	0.05	0.00134	104	85 - 118				
Iron	22.72	0.200	5	17.7	100	87 - 118				
Lead	0.05014	0.00500	0.05	0.000553	99.2	88 - 115				
Magnesium	8.37	0.200	5	3.314	101	83 - 118				
Manganese	0.3712	0.00500	0.05	0.3265	89.3	87 - 115				O
Nickel	0.05722	0.00500	0.05	0.006132	102	85 - 117				
Potassium	7.374	0.200	5	2.014	107	87 - 115				
Selenium	0.05536	0.00500	0.05	-0.000101	111	80 - 120				
Silver	0.05019	0.00500	0.05	0.000014	100	85 - 116				
Sodium	27.24	0.200	5	22.16	101	85 - 117				O
Thallium	0.04787	0.00200	0.05	0.000063	95.6	82 - 116				
Vanadium	0.05291	0.00500	0.05	0.002064	102	86 - 115				
Zinc	0.05854	0.00500	0.05	0.006047	105	83 - 119				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:30**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622453** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4083	0.0100	0.2	0.1871	111	84 - 117	0.4279	4.69	20	
Antimony	0.04837	0.00500	0.05	0.000066	96.6	85 - 117	0.05061	4.53	20	
Arsenic	0.05104	0.00500	0.05	0.00058	101	84 - 116	0.05255	2.92	20	
Barium	0.1734	0.00500	0.05	0.1242	98.3	86 - 114	0.1782	2.75	20	
Beryllium	0.05386	0.00200	0.05	0.000124	107	83 - 121	0.05514	2.35	20	
Cadmium	0.05011	0.00200	0.05	0.00014	99.9	87 - 115	0.05175	3.23	20	
Calcium	10.87	0.500	5	6.187	93.8	87 - 118	11.32	3.97	20	
Chromium	0.05865	0.00500	0.05	0.01191	93.5	85 - 116	0.06117	4.21	20	
Cobalt	0.04616	0.00500	0.05	0.000522	91.3	86 - 115	0.04819	4.31	20	
Copper	0.05055	0.00500	0.05	0.00134	98.4	85 - 118	0.05324	5.19	20	
Iron	21.65	0.200	5	17.7	79.0	87 - 118	22.72	4.82	20	S
Lead	0.04823	0.00500	0.05	0.000553	95.4	88 - 115	0.05014	3.89	20	
Magnesium	8.178	0.200	5	3.314	97.3	83 - 118	8.37	2.32	20	
Manganese	0.3574	0.00500	0.05	0.3265	61.7	87 - 115	0.3712	3.79	20	SO
Nickel	0.05436	0.00500	0.05	0.006132	96.4	85 - 117	0.05722	5.14	20	
Potassium	7.075	0.200	5	2.014	101	87 - 115	7.374	4.13	20	
Selenium	0.05171	0.00500	0.05	-0.000101	104	80 - 120	0.05536	6.81	20	
Silver	0.04799	0.00500	0.05	0.000014	96.0	85 - 116	0.05019	4.49	20	
Sodium	26.07	0.200	5	22.16	78.1	85 - 117	27.24	4.39	20	SO
Thallium	0.04564	0.00200	0.05	0.000063	91.1	82 - 116	0.04787	4.78	20	
Vanadium	0.05056	0.00500	0.05	0.002064	97.0	86 - 115	0.05291	4.54	20	
Zinc	0.05664	0.00500	0.05	0.006047	101	83 - 119	0.05854	3.3	20	

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060202-01PDS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:32**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622454** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4005	0.0100	0.2	0.1871	107	80 - 120				
Antimony	0.1916	0.00500	0.2	0.000066	95.8	80 - 120				
Arsenic	0.2107	0.00500	0.2	0.00058	105	80 - 120				
Barium	0.3222	0.00500	0.2	0.1242	99.0	80 - 120				
Cadmium	0.2032	0.00200	0.2	0.00014	102	80 - 120				
Calcium	26.11	0.500	20	6.187	99.6	80 - 120				
Chromium	0.2118	0.00500	0.2	0.01191	99.9	80 - 120				
Cobalt	0.1896	0.00500	0.2	0.000522	94.6	80 - 120				
Copper	0.2057	0.00500	0.2	0.00134	102	80 - 120				
Iron	37.41	0.200	20	17.7	98.6	80 - 120				
Lead	0.2051	0.00500	0.2	0.000553	102	80 - 120				
Magnesium	23.55	0.200	20	3.314	101	80 - 120				
Manganese	0.5342	0.00500	0.2	0.3265	104	80 - 120				
Nickel	0.2062	0.00500	0.2	0.006132	100	80 - 120				
Potassium	22.5	0.200	20	2.014	102	80 - 120				
Selenium	0.2133	0.00500	0.2	-0.000101	107	80 - 120				
Sodium	41.58	0.200	20	22.16	97.1	80 - 120				
Thallium	0.2051	0.00200	0.2	0.000063	102	80 - 120				
Vanadium	0.2053	0.00500	0.2	0.002064	102	80 - 120				
Zinc	0.2152	0.00500	0.2	0.006047	105	80 - 120				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060202-01SD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:25**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622451** PrepDate: **05-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.1824	0.0500					0.1871	2.56	10	
Antimony	0.00250	0.0250					0.000066	0	10	U
Arsenic	0.00250	0.0250					0.00058	0	10	U
Barium	0.1203	0.0250					0.1242	3.17	10	
Beryllium	0.00250	0.0100					0.000124	0	10	U
Cadmium	0.00250	0.0100					0.00014	0	10	U
Calcium	5.988	2.50					6.187	3.21	10	
Chromium	0.02323	0.0250					0.01191	0	10	J
Cobalt	0.00250	0.0250					0.000522	0	10	U
Copper	0.0125	0.0250					0.00134	0	10	U
Iron	17.81	1.00					17.7	0.621	10	
Lead	0.00500	0.0250					0.000553	0	10	U
Magnesium	3.144	1.00					3.314	5.11	10	
Manganese	0.3208	0.0250					0.3265	1.75	10	
Nickel	0.007999	0.0250					0.006132	0	10	J
Potassium	1.999	1.00					2.014	0.717	10	
Selenium	0.0125	0.0250					-0.000101	0	10	U
Silver	0.00250	0.0250					0.000014	0	10	U
Sodium	22.42	1.00					22.16	1.16	10	
Thallium	0.00250	0.0100					0.000063	0	10	U
Vanadium	0.007346	0.0250					0.002064	0	10	J
Zinc	0.02549	0.0250					0.006047	0	10	

The following samples were analyzed in this batch: HS20060133-01 HS20060133-02 HS20060133-03 HS20060133-04 HS20060133-07

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154514 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:30**
Client ID: Run ID: **HG03_363352** SeqNo: **5621648** PrepDate: **16-Jun-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-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:31**
Client ID: Run ID: **HG03_363352** SeqNo: **5621649** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00506	0.000200	0.005	0	101	82 - 119				

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **16-Jun-2020 16:35**
Client ID: Run ID: **HG03_363352** SeqNo: **5621651** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119				

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **16-Jun-2020 16:37**
Client ID: Run ID: **HG03_363352** SeqNo: **5621652** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119	0.005080	0	20	

The following samples were analyzed in this batch: HS20060133-01 HS20060133-02 HS20060133-03 HS20060133-04 HS20060133-07

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: 154162 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154162** Units: **ug/L** Analysis Date: **17-Jun-2020 14:05**
Client ID: Run ID: **SV-6_363438** SeqNo: **5625117** PrepDate: **05-Jun-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	*0.07895*	*0*	*0.08*	*0*	*98.7*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08965*	*0*	*0.08*	*0*	*112*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.09208*	*0*	*0.08*	*0*	*115*	*40 - 140*				

LCS Sample ID: **LCS-154162** Units: **ug/L** Analysis Date: **17-Jun-2020 14:25**
Client ID: Run ID: **SV-6_363438** SeqNo: **5625118** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.06057	0.010	0.08	0	75.7	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08227*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08257*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.09886*	*0*	*0.08*	*0*	*124*	*40 - 140*				

LCSD Sample ID: **LCSD-154162** Units: **ug/L** Analysis Date: **17-Jun-2020 14:44**
Client ID: Run ID: **SV-6_363438** SeqNo: **5625119** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.05081	0.010	0.08	0	63.5	40 - 140	0.06057	17.5	20	
Surr: 2-Fluorobiphenyl	*0.07826*	*0*	*0.08*	*0*	*97.8*	*40 - 140*	*0.08227*	*4.99*	*20*	
Surr: 4-Terphenyl-d14	*0.08379*	*0*	*0.08*	*0*	*105*	*40 - 140*	*0.08257*	*1.46*	*20*	
Surr: Nitrobenzene-d5	*0.09518*	*0*	*0.08*	*0*	*119*	*40 - 140*	*0.09886*	*3.79*	*20*	

The following samples were analyzed in this batch: HS20060133-01 HS20060133-03 HS20060133-04 HS20060133-05 HS20060133-06 HS20060133-07

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 12:12**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608818** 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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 12:12**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608818** 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	*43.59*	*1.0*	*50*	*0*	*87.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.59*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*45.12*	*1.0*	*50*	*0*	*90.2*	*80 - 119*				
Surr: Toluene-d8	*54.1*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 11:24**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608817** 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	20.1	1.0	20	0	100	78 - 124				
1,1,1-Trichloroethane	19.58	1.0	20	0	97.9	74 - 131				
1,1,2,2-Tetrachloroethane	20.17	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	20.84	1.0	20	0	104	80 - 119				
1,1-Dichloroethane	20.04	1.0	20	0	100	77 - 125				
1,1-Dichloroethene	19.37	1.0	20	0	96.8	71 - 131				
1,1-Dichloropropene	18.37	1.0	20	0	91.8	78 - 125				
1,2,3-Trichlorobenzene	26.29	1.0	20	0	131	69 - 129				S
1,2,3-Trichloropropane	20.01	1.0	20	0	100	73 - 122				
1,2,4-Trichlorobenzene	23.72	1.0	20	0	119	69 - 130				
1,2,4-Trimethylbenzene	19.05	1.0	20	0	95.3	76 - 124				
1,2-Dibromo-3-chloropropane	21.8	1.0	20	0	109	62 - 128				
1,2-Dibromoethane	20.48	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	19.76	1.0	20	0	98.8	80 - 119				
1,2-Dichloroethane	20.65	1.0	20	0	103	73 - 128				
1,2-Dichloropropane	21.17	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	18.22	1.0	20	0	91.1	75 - 124				
1,3-Dichlorobenzene	19.01	1.0	20	0	95.0	80 - 119				
1,3-Dichloropropane	20.47	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	19.33	1.0	20	0	96.6	79 - 118				
2,2-Dichloropropane	20.21	1.0	20	0	101	60 - 139				
2-Butanone	39.35	2.0	40	0	98.4	56 - 143				
2-Chlorotoluene	18.15	1.0	20	0	90.7	79 - 122				
2-Hexanone	43.17	2.0	40	0	108	57 - 139				
4-Chlorotoluene	18.48	1.0	20	0	92.4	78 - 122				
4-Isopropyltoluene	18.48	1.0	20	0	92.4	77 - 127				
4-Methyl-2-pentanone	41.93	2.0	40	0	105	67 - 130				
Acetone	41.64	2.0	40	0	104	39 - 160				
Benzene	19.99	1.0	20	0	99.9	79 - 120				
Bromobenzene	19.54	1.0	20	0	97.7	80 - 120				
Bromochloromethane	20.48	1.0	20	0	102	78 - 123				
Bromodichloromethane	20.64	1.0	20	0	103	79 - 125				
Bromoform	21.14	1.0	20	0	106	66 - 130				
Bromomethane	21.94	1.0	20	0	110	53 - 141				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 11:24**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608817** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.58	2.0	40	0	98.9	64 - 133				
Carbon tetrachloride	18.46	1.0	20	0	92.3	72 - 136				
Chlorobenzene	19.82	1.0	20	0	99.1	82 - 118				
Chloroethane	19.4	1.0	20	0	97.0	60 - 138				
Chloroform	20.27	1.0	20	0	101	79 - 124				
Chloromethane	20.05	1.0	20	0	100	50 - 139				
cis-1,2-Dichloroethene	20.21	1.0	20	0	101	78 - 123				
cis-1,3-Dichloropropene	20.53	1.0	20	0	103	75 - 124				
Dibromochloromethane	19.97	1.0	20	0	99.8	74 - 126				
Dibromomethane	20.6	1.0	20	0	103	79 - 123				
Dichlorodifluoromethane	19.02	1.0	20	0	95.1	32 - 152				
Ethylbenzene	19.23	1.0	20	0	96.2	79 - 121				
Hexachlorobutadiene	25.34	1.0	20	0	127	66 - 134				
Isopropylbenzene	18.57	1.0	20	0	92.9	72 - 131				
m,p-Xylene	38.57	2.0	40	0	96.4	80 - 121				
Methylene chloride	27.28	2.0	20	0	136	74 - 124				S
Naphthalene	22.61	1.0	20	0	113	61 - 128				
n-Butylbenzene	18.68	1.0	20	0	93.4	75 - 128				
n-Propylbenzene	18.45	1.0	20	0	92.2	76 - 126				
o-Xylene	19.69	1.0	20	0	98.5	78 - 122				
sec-Butylbenzene	17.83	1.0	20	0	89.2	77 - 126				
Styrene	19.82	1.0	20	0	99.1	78 - 123				
tert-Butylbenzene	17.64	1.0	20	0	88.2	78 - 124				
Tetrachloroethene	19.22	1.0	20	0	96.1	74 - 129				
Toluene	19.45	1.0	20	0	97.2	80 - 121				
trans-1,2-Dichloroethene	20.63	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	21.24	1.0	20	0	106	73 - 127				
Trichloroethene	19.67	1.0	20	0	98.3	79 - 123				
Trichlorofluoromethane	19.32	1.0	20	0	96.6	65 - 141				
Vinyl chloride	17.43	1.0	20	0	87.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.3*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.05*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*51.39*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*47.59*	*1.0*	*50*	*0*	*95.2*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060114-01MS** Units: **UG/L** Analysis Date: **05-Jun-2020 15:49**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608827** 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	22.36	1.0	20	0	112	78 - 124				
1,1,1-Trichloroethane	19.16	1.0	20	0	95.8	74 - 131				
1,1,2,2-Tetrachloroethane	22.31	1.0	20	0	112	71 - 121				
1,1,2-Trichloroethane	22.39	1.0	20	0	112	80 - 119				
1,1-Dichloroethane	18.12	1.0	20	0	90.6	77 - 125				
1,1-Dichloroethene	18.68	1.0	20	0	93.4	71 - 131				
1,1-Dichloropropene	20.14	1.0	20	0	101	78 - 125				
1,2,3-Trichlorobenzene	25.15	1.0	20	0	126	69 - 129				
1,2,3-Trichloropropane	21.25	1.0	20	0	106	73 - 122				
1,2,4-Trichlorobenzene	22.9	1.0	20	0	114	69 - 130				
1,2,4-Trimethylbenzene	21.94	1.0	20	0	110	76 - 124				
1,2-Dibromo-3-chloropropane	23.89	1.0	20	0	119	62 - 128				
1,2-Dibromoethane	22.67	1.0	20	0	113	77 - 121				
1,2-Dichlorobenzene	22.22	1.0	20	0	111	80 - 119				
1,2-Dichloroethane	21.6	1.0	20	0.8439	104	73 - 128				
1,2-Dichloropropane	21.1	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	21.27	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	21.35	1.0	20	0	107	80 - 119				
1,3-Dichloropropane	21.65	1.0	20	0	108	80 - 119				
1,4-Dichlorobenzene	21.15	1.0	20	0	106	79 - 118				
2,2-Dichloropropane	17.85	1.0	20	0	89.2	60 - 139				
2-Butanone	34.32	2.0	40	0	85.8	56 - 143				
2-Chlorotoluene	21.05	1.0	20	0	105	79 - 122				
2-Hexanone	46.56	2.0	40	0	116	57 - 139				
4-Chlorotoluene	21.12	1.0	20	0	106	78 - 122				
4-Isopropyltoluene	22.61	1.0	20	0	113	77 - 127				
4-Methyl-2-pentanone	46.19	2.0	40	0	115	67 - 130				
Acetone	29.57	2.0	40	0	73.9	39 - 160				
Benzene	20.42	1.0	20	0	102	79 - 120				
Bromobenzene	21.45	1.0	20	0	107	80 - 120				
Bromochloromethane	18.06	1.0	20	0	90.3	78 - 123				
Bromodichloromethane	20.5	1.0	20	0	102	79 - 125				
Bromoform	22.68	1.0	20	0	113	66 - 130				
Bromomethane	17.25	1.0	20	0	86.2	53 - 141				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060114-01MS** Units: **UG/L** Analysis Date: **05-Jun-2020 15:49**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608827** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	37.79	2.0	40	0	94.5	64 - 133				
Carbon tetrachloride	20.43	1.0	20	0	102	72 - 136				
Chlorobenzene	21.46	1.0	20	0	107	82 - 118				
Chloroethane	17.3	1.0	20	0	86.5	60 - 138				
Chloroform	18.44	1.0	20	0	92.2	79 - 124				
Chloromethane	14.86	1.0	20	0	74.3	50 - 139				
cis-1,2-Dichloroethene	35.3	1.0	20	16.85	92.2	78 - 123				
cis-1,3-Dichloropropene	20.71	1.0	20	0	104	75 - 124				
Dibromochloromethane	21.33	1.0	20	0	107	74 - 126				
Dibromomethane	20.78	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	11.65	1.0	20	0	58.3	32 - 152				
Ethylbenzene	22.34	1.0	20	0	112	79 - 121				
Hexachlorobutadiene	25.39	1.0	20	0	127	66 - 134				
Isopropylbenzene	22.33	1.0	20	0	112	72 - 131				
m,p-Xylene	44.11	2.0	40	0	110	80 - 121				
Methylene chloride	18.32	2.0	20	0	91.6	74 - 124				
Naphthalene	23.85	1.0	20	0	119	61 - 128				
n-Butylbenzene	23.36	1.0	20	0	117	75 - 128				
n-Propylbenzene	21.92	1.0	20	0	110	76 - 126				
o-Xylene	22.25	1.0	20	0	111	78 - 122				
sec-Butylbenzene	22.11	1.0	20	0	111	77 - 126				
Styrene	21.64	1.0	20	0	108	78 - 123				
tert-Butylbenzene	21.96	1.0	20	0	110	78 - 124				
Tetrachloroethene	23.34	1.0	20	0	117	74 - 129				
Toluene	21.9	1.0	20	0	109	80 - 121				
trans-1,2-Dichloroethene	18.7	1.0	20	0	93.5	75 - 124				
trans-1,3-Dichloropropene	20.64	1.0	20	0	103	73 - 127				
Trichloroethene	24.61	1.0	20	3.195	107	79 - 123				
Trichlorofluoromethane	19.35	1.0	20	0	96.7	65 - 141				
Vinyl chloride	15.55	1.0	20	0	77.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*43.2*	*1.0*	*50*	*0*	*86.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.8*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*44.92*	*1.0*	*50*	*0*	*89.8*	*80 - 119*				
Surr: Toluene-d8	*53.54*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060114-01MSD** Units: **UG/L** Analysis Date: **05-Jun-2020 16:13**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608828** 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	22.36	5.53	20	
1,1,1-Trichloroethane	19.4	1.0	20	0	97.0	74 - 131	19.16	1.22	20	
1,1,2,2-Tetrachloroethane	21	1.0	20	0	105	71 - 121	22.31	6.03	20	
1,1,2-Trichloroethane	21.12	1.0	20	0	106	80 - 119	22.39	5.86	20	
1,1-Dichloroethane	18.26	1.0	20	0	91.3	77 - 125	18.12	0.78	20	
1,1-Dichloroethene	18.19	1.0	20	0	90.9	71 - 131	18.68	2.66	20	
1,1-Dichloropropene	20.93	1.0	20	0	105	78 - 125	20.14	3.86	20	
1,2,3-Trichlorobenzene	31.03	1.0	20	0	155	69 - 129	25.15	20.9	20	SR
1,2,3-Trichloropropane	21.01	1.0	20	0	105	73 - 122	21.25	1.14	20	
1,2,4-Trichlorobenzene	28.59	1.0	20	0	143	69 - 130	22.9	22.1	20	SR
1,2,4-Trimethylbenzene	21.79	1.0	20	0	109	76 - 124	21.94	0.685	20	
1,2-Dibromo-3-chloropropane	24.2	1.0	20	0	121	62 - 128	23.89	1.29	20	
1,2-Dibromoethane	21.16	1.0	20	0	106	77 - 121	22.67	6.92	20	
1,2-Dichlorobenzene	21.69	1.0	20	0	108	80 - 119	22.22	2.43	20	
1,2-Dichloroethane	20.79	1.0	20	0.8439	99.7	73 - 128	21.6	3.85	20	
1,2-Dichloropropane	20.86	1.0	20	0	104	78 - 122	21.1	1.14	20	
1,3,5-Trimethylbenzene	21.42	1.0	20	0	107	75 - 124	21.27	0.699	20	
1,3-Dichlorobenzene	20.95	1.0	20	0	105	80 - 119	21.35	1.91	20	
1,3-Dichloropropane	20.89	1.0	20	0	104	80 - 119	21.65	3.57	20	
1,4-Dichlorobenzene	20.87	1.0	20	0	104	79 - 118	21.15	1.32	20	
2,2-Dichloropropane	18.43	1.0	20	0	92.2	60 - 139	17.85	3.21	20	
2-Butanone	34.46	2.0	40	0	86.2	56 - 143	34.32	0.398	20	
2-Chlorotoluene	20.4	1.0	20	0	102	79 - 122	21.05	3.15	20	
2-Hexanone	45.58	2.0	40	0	114	57 - 139	46.56	2.14	20	
4-Chlorotoluene	20.45	1.0	20	0	102	78 - 122	21.12	3.22	20	
4-Isopropyltoluene	22.61	1.0	20	0	113	77 - 127	22.61	0.0187	20	
4-Methyl-2-pentanone	44.84	2.0	40	0	112	67 - 130	46.19	2.96	20	
Acetone	29.83	2.0	40	0	74.6	39 - 160	29.57	0.879	20	
Benzene	20.52	1.0	20	0	103	79 - 120	20.42	0.477	20	
Bromobenzene	20.51	1.0	20	0	103	80 - 120	21.45	4.48	20	
Bromochloromethane	18.17	1.0	20	0	90.9	78 - 123	18.06	0.635	20	
Bromodichloromethane	20.3	1.0	20	0	102	79 - 125	20.5	0.974	20	
Bromoform	22.17	1.0	20	0	111	66 - 130	22.68	2.27	20	
Bromomethane	16.3	1.0	20	0	81.5	53 - 141	17.25	5.67	20	

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060114-01MSD** Units: **UG/L** Analysis Date: **05-Jun-2020 16:13**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608828** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	38.27	2.0	40	0	95.7	64 - 133	37.79	1.26	20	
Carbon tetrachloride	20.53	1.0	20	0	103	72 - 136	20.43	0.448	20	
Chlorobenzene	20.72	1.0	20	0	104	82 - 118	21.46	3.48	20	
Chloroethane	17.46	1.0	20	0	87.3	60 - 138	17.3	0.962	20	
Chloroform	18.24	1.0	20	0	91.2	79 - 124	18.44	1.07	20	
Chloromethane	14.6	1.0	20	0	73.0	50 - 139	14.86	1.73	20	
cis-1,2-Dichloroethene	35.35	1.0	20	16.85	92.5	78 - 123	35.3	0.159	20	
cis-1,3-Dichloropropene	20.14	1.0	20	0	101	75 - 124	20.71	2.77	20	
Dibromochloromethane	20.79	1.0	20	0	104	74 - 126	21.33	2.57	20	
Dibromomethane	20.32	1.0	20	0	102	79 - 123	20.78	2.25	20	
Dichlorodifluoromethane	11.87	1.0	20	0	59.4	32 - 152	11.65	1.86	20	
Ethylbenzene	21.93	1.0	20	0	110	79 - 121	22.34	1.86	20	
Hexachlorobutadiene	28.39	1.0	20	0	142	66 - 134	25.39	11.1	20	S
Isopropylbenzene	22	1.0	20	0	110	72 - 131	22.33	1.51	20	
m,p-Xylene	42.89	2.0	40	0	107	80 - 121	44.11	2.81	20	
Methylene chloride	18.66	2.0	20	0	93.3	74 - 124	18.32	1.86	20	
Naphthalene	28.88	1.0	20	0	144	61 - 128	23.85	19.1	20	S
n-Butylbenzene	23.75	1.0	20	0	119	75 - 128	23.36	1.66	20	
n-Propylbenzene	21.72	1.0	20	0	109	76 - 126	21.92	0.936	20	
o-Xylene	21.27	1.0	20	0	106	78 - 122	22.25	4.5	20	
sec-Butylbenzene	22.41	1.0	20	0	112	77 - 126	22.11	1.36	20	
Styrene	21.09	1.0	20	0	105	78 - 123	21.64	2.55	20	
tert-Butylbenzene	21.91	1.0	20	0	110	78 - 124	21.96	0.209	20	
Tetrachloroethene	22.72	1.0	20	0	114	74 - 129	23.34	2.68	20	
Toluene	21.21	1.0	20	0	106	80 - 121	21.9	3.16	20	
trans-1,2-Dichloroethene	19.43	1.0	20	0	97.2	75 - 124	18.7	3.87	20	
trans-1,3-Dichloropropene	20.83	1.0	20	0	104	73 - 127	20.64	0.941	20	
Trichloroethene	23.99	1.0	20	3.195	104	79 - 123	24.61	2.55	20	
Trichlorofluoromethane	19.41	1.0	20	0	97.1	65 - 141	19.35	0.331	20	
Vinyl chloride	15.67	1.0	20	0	78.3	58 - 137	15.55	0.764	20	
Surr: 1,2-Dichloroethane-d4	*42.55*	*1.0*	*50*	*0*	*85.1*	*81 - 118*	*43.2*	*1.51*	*20*	
Surr: 4-Bromofluorobenzene	*50.44*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.8*	*0.718*	*20*	
Surr: Dibromofluoromethane	*45*	*1.0*	*50*	*0*	*90.0*	*80 - 119*	*44.92*	*0.181*	*20*	
Surr: Toluene-d8	*51.99*	*1.0*	*50*	*0*	*104*	*89 - 112*	*53.54*	*2.92*	*20*	

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060133

QC BATCH REPORT

Batch ID: R362756 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20060133-01	HS20060133-02	HS20060133-03	HS20060133-04
HS20060133-05	HS20060133-06	HS20060133-07	HS20060133-08
HS20060133-09	HS20060133-10		

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060133**

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
Illinois	2000322020-4	09-May-2021
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: 18-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060133 **Date/Time Received:** 03-Jun-2020 09:05

Client Name: Bhate Environmental **Received by:** Paresh M. Giga

Completed By: /S/ Paresh M. Giga (eSignature) 03-Jun-2020 15:47 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 04-Jun-2020 11:03 (Date/Time)

Matrices: **GW/Water** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.0C U/C	IR25	
Cooler(s)/Kit(s):	46039		
Date/Time sample(s) sent to storage:	6/3/2020 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:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

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

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
18CPTMW22SW_060120	01 JUN 2020	0750	-	N		WG	6	X	X	X	X				
MW20_060120	01 JUN 2020	0840	-	N		WG	5	X	X	X					
18CPTMW22DW_060120	01 JUN 2020	0930	-	N		WG	6	X	X	X	X				
18CPTMW22R_060120	01 JUN 2020	1020	-	N		WG	6	X	X	X	X				
18CPTMW26SW_060120	01 JUN 2020	1110	-	N		WG	5	X	X		X				
MW8_060120	01 JUN 2020	1200	-	N		WG	5	X	X		X				
18MW22_060120	01 JUN 2020	1305	-	N		WG	6	X	X	X	X				
C04_060120	01 JUN 2020	1355	-	N		WG	4	X	X						
C04_060120_A	01 JUN 2020	1355	-	FD		WG	4	X	X						
TRIP BLANK	01 JUN 2020		-	TB		W	2	X							

Sample Analysis Requested (5) | Quality Assurance Samples (6)

HS20060133

Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS: ____

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/2/20	1430	1.	6/3/2020	09:05
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 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 10199901 in the Equipment Blank Lot Control

46039. 1.00

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

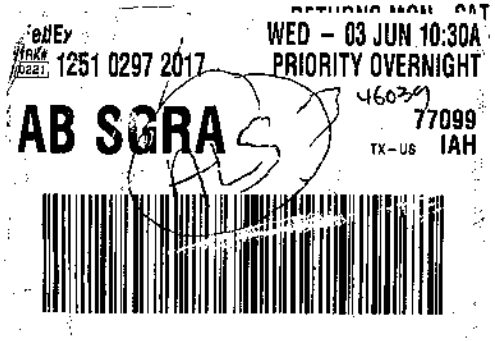
46039

CUSTODY SEAL

Date: 6/2/20 Time: 1430
Name: Scott Bessinger
Company: BHATG

Seal Broken By: SM
Date: 06/03/20

46039



RETURNS MON - SAT
WED - 03 JUN 10:30A
PRIORITY OVERNIGHT

FedEx
TRK# 0221 1251 0297 2017

AB SGRA

46039
77099
TX-US IAH

ALS

June 16, 2020 Service Request No:E2000492

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

Laboratory Results for: HS20060133

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 04, 2020
For your reference, these analyses have been assigned our service request number **E2000492.**

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.:**	E2000492
Project:	HS20060133	**Date Received:**	06/04/20
Sample Matrix:	Water		

CASE NARRATIVE

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

Sample Receipt

Nine samples were received for analysis at ALS Environmental in Houston on 06/04/20.

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:

EQ2000277: 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, DLCS, MS, & MSD 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.

Client: ALS Environmental - US **Service Request:**E2000492
Project: HS20060133

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000492-001	18CPTMW22SW_060120	6/1/2020	0750
E2000492-002	MW20_060120	6/1/2020	0840
E2000492-003	18CPTMW22DW_060120	6/1/2020	0930
E2000492-004	18CPTMW22R_060120	6/1/2020	1020
E2000492-005	18CPTMW26SW_060120	6/1/2020	1110
E2000492-006	MW8_060120	6/1/2020	1200
E2000492-007	18WW22_060120	6/1/2020	1305
E2000492-008	C04_060120	6/1/2020	1355

Service Request Summary

Folder #: **E2000492**
Client Name: ALS Environmental - US
Project Name: HS20060133
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: 06/04/20
Internal Due Date: 6/17/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060133
EDD: No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000492-001	18CPTMW22SW_060120	Ground Water	06/01/20 0750	**IV**
E2000492-002	MW20_060120	Ground Water	06/01/20 0840	**IV**
E2000492-003	18CPTMW22DW_060120	Ground Water	06/01/20 0930	**IV**
E2000492-004	18CPTMW22R_060120	Ground Water	06/01/20 1020	**IV**
E2000492-005	18CPTMW26SW_060120	Ground Water	06/01/20 1110	**IV**
E2000492-006	MW8_060120	Ground Water	06/01/20 1200	**IV**
E2000492-007	18WW22_060120	Ground Water	06/01/20 1305	**IV**
E2000492-008	C04_060120	Ground Water	06/01/20 1355	**IV**
E2000492-009	C04_060120_a	Ground Water	06/01/20 1355	**IV**

Service Request Summary

Folder #:	**E2000492**
Client Name:	ALS Environmental - US
Project Name:	HS20060133
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:	06/04/20
Internal Due Date:	6/17/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20060133
EDD:	No EDD Specified

9 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-AirArch 4

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	9	Level IV due 6/24,level II 6/17

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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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: **Texas** **COC ID:** **14026**

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:	HS20060133
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060133-01**	**18CPTMW22SW_060120**	**Groundwater**	**01 Jun 2020 07:50**
	SUB_Perch-6850			17 Jun 2020
2.	**HS20060133-02**	**MW20_060120**	**Groundwater**	**01 Jun 2020 08:40**
	SUB_Perch-6850			17 Jun 2020
3.	**HS20060133-03**	**18CPTMW22DW_060120**	**Groundwater**	**01 Jun 2020 09:30**
	SUB_Perch-6850			17 Jun 2020
4.	**HS20060133-04**	**18CPTMW22R_060120**	**Groundwater**	**01 Jun 2020 10:20**
	SUB_Perch-6850			17 Jun 2020
5.	**HS20060133-05**	**18CPTMW26SW_060120**	**Groundwater**	**01 Jun 2020 11:10**
	SUB_Perch-6850			17 Jun 2020
6.	**HS20060133-06**	**MW8_060120**	**Groundwater**	**01 Jun 2020 12:00**
	SUB_Perch-6850			17 Jun 2020
7.	**HS20060133-07**	**18WW22_060120**	**Groundwater**	**01 Jun 2020 13:05**
	SUB_Perch-6850			17 Jun 2020
8.	**HS20060133-08**	**C04_060120**	**Groundwater**	**01 Jun 2020 13:55**
	SUB_Perch-6850			17 Jun 2020
9.	**HS20060133-09**	**C04_060120_a**	**Groundwater**	**01 Jun 2020 13:55**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14026**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
SUB_Perch-6850			17 Jun 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: _____

Received By: _____ Date/Time: 6/11/20 1945

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

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID IR11

Date/Time Received: 6/14/20 Initials: CG

Date/Time Logged in: 6/14/20 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
   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?
-		6/14/20	1450	CG	1.1	☒
						☐
						☐
						☐

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:

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#: 359779 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/9/20 09:47

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000491-001	18WW19_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000491-002	18WW20-060320	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000491-003	18CPTMW19_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000491-004	18CPTMW19_060320_a	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000491-005	18CPTMW19SW_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000491-006	18WW08_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000491-007	18WW09_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000491-008	CO9_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000491-009	CO6_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000492-001	18CPTMW22SW_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000492-002	MW20_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000492-003	18CPTMW22DW_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000492-004	18CPTMW22R_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000492-005	18CPTMW26SW_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000492-006	MW8_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000492-007	18WW22_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2000492-008	C04_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2000492-009	C04_060120_a	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000227-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000227-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000227-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000227-04	18WW19_060320 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000227-05	18WW19_060320 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

EQ2000227-02	100.00µL	EQ2000227-03	100.00µL	EQ2000227-04	100.00µL	EQ2000227-05	100.00µL

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

E2000491-001	1.00µL	E2000491-002	1.00µL	E2000491-003	1.00µL	E2000491-004	1.00µL	E2000491-005	1.00µL	E2000491-006	1.00µL
E2000491-007	1.00µL	E2000491-008	1.00µL	E2000491-009	1.00µL	E2000492-001	1.00µL	E2000492-002	1.00µL	E2000492-003	1.00µL
E2000492-004	1.00µL	E2000492-005	1.00µL	E2000492-006	1.00µL	E2000492-007	1.00µL	E2000492-008	1.00µL	E2000492-009	1.00µL
EQ2000227-01	1.00µL	EQ2000227-02	1.00µL	EQ2000227-03	1.00µL	EQ2000227-04	1.00µL	EQ2000227-05	1.00µL		

Preparation Information Benchsheet

Prep Run#: 359779 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/9/20 09:47

Preparation Steps

Step: Preparation
Started: 6/9/20 09:47
Finished: 6/9/20 13:43
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 6/10/20

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 0750
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW22SW_060120	**Units:**	µg/L
Lab Code:	E2000492-001	**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	**383**		1.00	0.500	0.250	10	6/ 9/20	6/16/20 14:07	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 0840
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	MW20_060120	**Units:**	µg/L
Lab Code:	E2000492-002	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 18:15	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 0930
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW22DW_060120	**Units:**	µg/L
Lab Code:	E2000492-003	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 18:23	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 1020
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW22R_060120	**Units:**	µg/L
Lab Code:	E2000492-004	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 13:17	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 1110
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW26SW_060120	**Units:**	µg/L
Lab Code:	E2000492-005	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 13:25	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 1200
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	MW8_060120	**Units:**	µg/L
Lab Code:	E2000492-006	**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	**2150**		5.00	2.50	1.25	50	6/ 9/20	6/16/20 14:23	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 1305
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW22_060120	**Units:**	µg/L
Lab Code:	E2000492-007	**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	**0.364**		0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 13:33	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 1355
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	C04_060120	**Units:**	µg/L
Lab Code:	E2000492-008	**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	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 13:51	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	6/ 1/20 1355
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	C04_060120_a	**Units:**	µg/L
Lab Code:	E2000492-009	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 19:18	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2000491-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:43	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000227-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:04	359779	683807	

Accuracy & Precision

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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Analyzed:**	6/16/20 - 6/16/20
Sample Matrix:	Ground Water		

Lab Control Sample Summary

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	359779

	Lab Control Sample EQ2000227-02			Duplicate Lab Control Sample EQ2000227-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.102	0.100	102	0.0926	0.100	93	84 - 119	10	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:**	E2000492
Project:	HS20060133	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000227-02	**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	**0.102**		0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 13:43	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000227-03	**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	**0.0926**	J	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:19	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	6/15/20

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:	E2000491-001	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS **Matrix Spike** EQ2000227-04			Batch QCDMS **Duplicate Matrix Spike** EQ2000227-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.104	0.100	104	0.102	0.100	102	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:**	E2000492
Project:	HS20060133	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000227-04	**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	**0.104**		0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:27	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000227-05	**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	**0.102**		0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:35	359779	683807	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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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

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

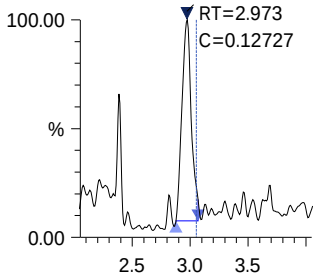
Date acquired: 6/2/2020 3:37:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_009.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

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

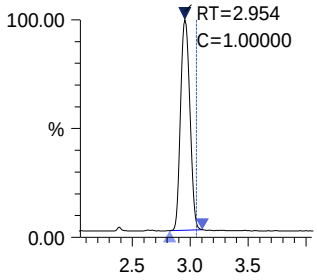
Q 99.00>83.00 (-) 4.13e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 137060

ISTD 107.00>89.00 (-) 2.48e4



ALS Group Houston

PERCHLORATE2

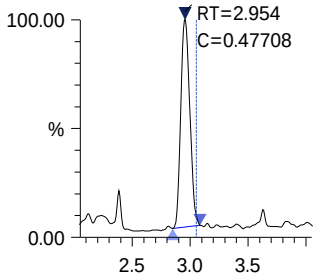
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

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

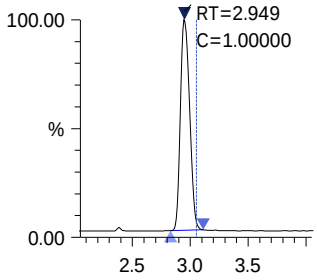
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



ALS Group Houston

PERCHLORATE3

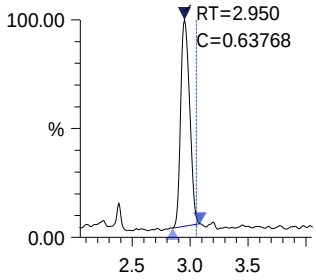
Date acquired: 6/2/2020 3:53:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_011.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

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

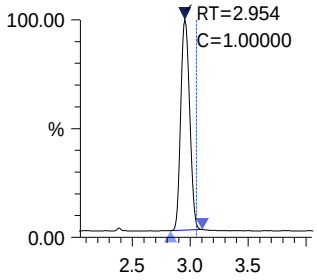
Q 99.00>83.00 (-) 2.17e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 142915

ISTD 107.00>89.00 (-) 2.70e4



ALS Group Houston

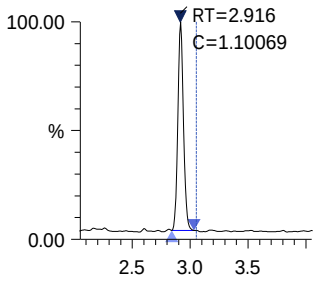
PERCHLORATE4

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

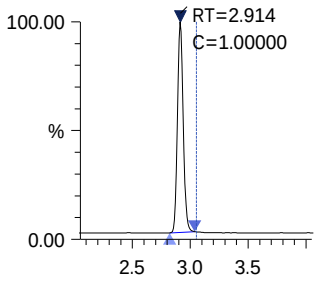
Perchlorate

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

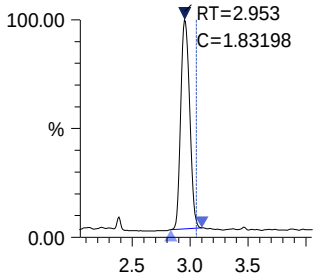
PERCHLORATE5

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

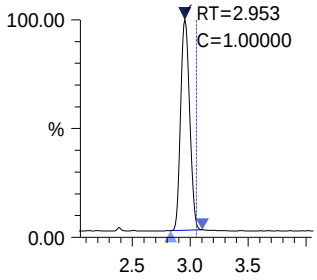
Perchlorate

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

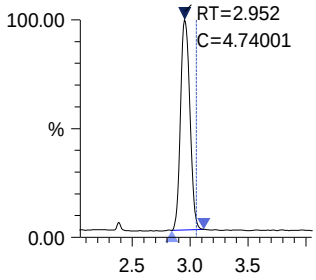
Date acquired: 6/2/2020 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_014.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

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

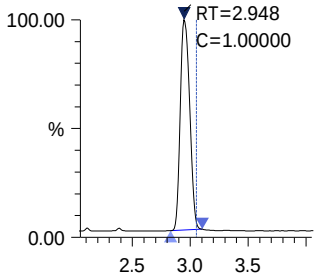
Q 99.00>83.00 (-) 1.50e4



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 140500

ISTD 107.00>89.00 (-) 2.51e4



ALS Group Houston

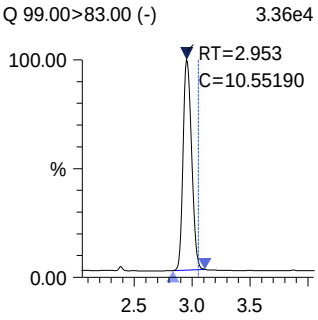
PERCHLORATE7

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

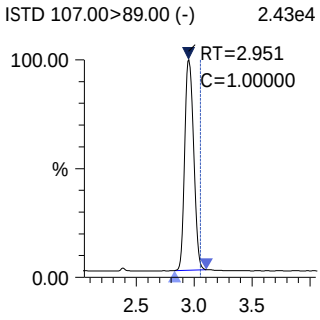
Perchlorate

Conc 10.55190
Area 173998



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 128928



ALS Group Houston

PERCHLORATE8

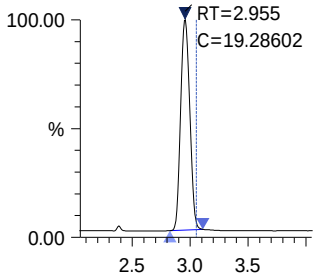
Date acquired: 6/2/2020 4:37:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

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

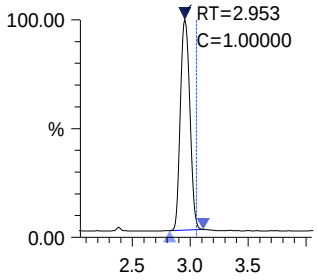
Q 99.00>83.00 (-) 5.85e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 131734

ISTD 107.00>89.00 (-) 2.34e4



ALS Group Houston

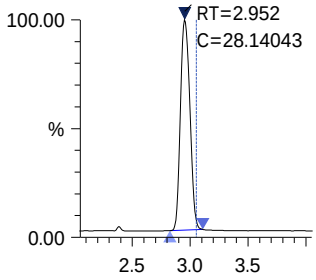
PERCHLORATE9

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

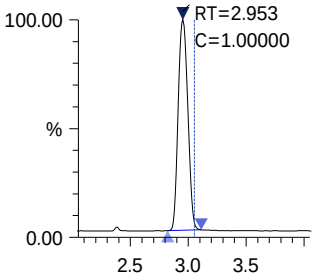
Perchlorate

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

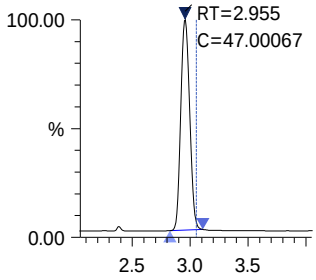
Date acquired: 6/2/2020 4:52:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

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

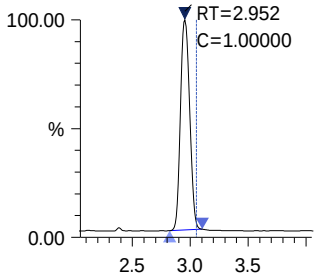
Q 99.00>83.00 (-) 1.36e5



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

PERCHLORATEICV

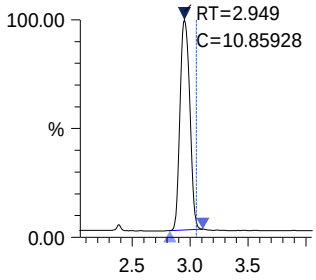
Date acquired: 6/2/2020 5:00:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

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

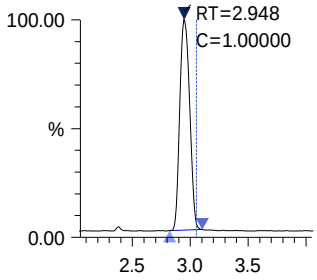
Q 99.00>83.00 (-) 3.04e4



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

20200615

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		20200615_001	Perchlorate6850b.lcm	1x	☒	
	null		20200615_002	Perchlorate6850b.lcm	1x	☒	
	null		20200615_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_005	Perchlorate6850b.lcm	1x	☒	
	LODV		20200615_006	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-02		20200615_007	Perchlorate6850b.lcm	1x	☒	do not use
	ICAL 1		20200615_008	Perchlorate6850b.lcm	1x	☒	do not use
	LODV		20200615_009	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-02		20200615_012	Perchlorate6850b.lcm	1x	☒	do not use
	LODV		20200615_013	Perchlorate6850b.lcm	1x	☒	do not use
	LODV		20200615_014	Perchlorate6850b.lcm	1x	☒	do not use
	IB		20200615_015	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_016	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_017	Perchlorate6850b.lcm	1x	☒	
	LODV		20200615_018	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_019	Perchlorate6850b.lcm	1x	☒	3100807-04
	LODV		20200615_020	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-01		20200615_021	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-02		20200615_022	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-03		20200615_023	Perchlorate6850b.lcm	1x	☒	
	E2000473-001		20200615_024	Perchlorate6850b.lcm	1x	☒	
	ICS		20200615_025	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_026	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000215-02		20200615_027	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-01		20200615_028	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200615_029	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-03		20200615_030	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-04		20200615_031	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-05		20200615_032	Perchlorate6850b.lcm	1x	☒	
	E2000491-001		20200615_033	Perchlorate6850b.lcm	1x	☒	
	E2000491-002		20200615_034	Perchlorate6850b.lcm	1x	☒	
	E2000491-003		20200615_035	Perchlorate6850b.lcm	1x	☒	
	E2000491-004		20200615_036	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_037	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000491-005		20200615_038	Perchlorate6850b.lcm	1x	☒	reanalyze @ 2X
	E2000491-006		20200615_039	Perchlorate6850b.lcm	1x	☒	reanalyze
	E2000491-007		20200615_040	Perchlorate6850b.lcm	1x	☒	
	E2000491-008		20200615_041	Perchlorate6850b.lcm	1x	☒	
	E2000491-009		20200615_042	Perchlorate6850b.lcm	1x	☒	
	E2000492-001		20200615_043	Perchlorate6850b.lcm	1x	☒	reanalyze @ 10X
	E2000492-002		20200615_044	Perchlorate6850b.lcm	1x	☒	
	E2000492-003		20200615_045	Perchlorate6850b.lcm	1x	☒	
	E2000492-004		20200615_046	Perchlorate6850b.lcm	1x	☒	
	E2000492-005		20200615_047	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_048	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000492-006		20200615_049	Perchlorate6850b.lcm	1x	☒	reanalyze @ 50X
	E2000492-007		20200615_050	Perchlorate6850b.lcm	1x	☒	reanalyze
	E2000492-008		20200615_051	Perchlorate6850b.lcm	1x	☒	reanalyze
	E2000492-009		20200615_052	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_053	Perchlorate6850b.lcm	1x	☒	3100807-04

20200616

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		20200616_001	Perchlorate6850b.lcm	1x	☒	
	null		20200616_002	Perchlorate6850b.lcm	1x	☒	
	null		20200616_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_005	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_006	Perchlorate6850b.lcm	1x	☒	
	LODV		20200616_007	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_008	Perchlorate6850b.lcm	1x	☒	3100807-04
	ICS		20200616_009	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_010	Perchlorate6850b.lcm	1x	☒	
	E2000491-006[DNU]		20200616_011	Perchlorate6850b.lcm	1x	☒	do not use
	E2000492-004		20200616_012	Perchlorate6850b.lcm	1x	☒	
	E2000492-005		20200616_013	Perchlorate6850b.lcm	1x	☒	
	E2000492-007		20200616_014	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_015	Perchlorate6850b.lcm	1x	☒	
	E2000492-008RR		20200616_016	Perchlorate6850b.lcm	1x	☒	
	E2000491-005X2		20200616_017	Perchlorate6850b.lcm	2x	☒	
	E2000492-001X10		20200616_018	Perchlorate6850b.lcm	10x	☒	
	PERCHLORATE7		20200616_019	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000492-006X50		20200616_020	Perchlorate6850b.lcm	50x	☒	
	EQ2000228-01		20200616_021	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-02		20200616_022	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-03		20200616_023	Perchlorate6850b.lcm	1x	☒	
	E2000493-001		20200616_024	Perchlorate6850b.lcm	1x	☒	
	E2000493-002		20200616_025	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_026	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/15/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200615\20200615_026

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 683807
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.2	0.1279	0.1428	11.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/15/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200615\20200615_037

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 683807
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279	0.1382	8.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/15/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200615\20200615_048

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 683807
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1279	0.1363	6.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/15/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200615\20200615_053

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 683807
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1279	0.1292	1.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/16/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200616\20200616_008

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 683807
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1279	0.1366	6.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/16/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200616\20200616_019

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 683807
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	0.1279	0.1346	5.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000492
Project:	HS20060133	**Date Analyzed:**	6/16/20

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\20200616\20200616_026	**Calibration ID:**	EC2000007
		Analysis Lot:	683807
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	0.1279	0.1361	6.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/15/20 15:44

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

File ID: I:\LCMS01\DATA\20200615\20200615_026
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000236-01
Analysis Lot: 683807
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	EQ2000236-01	116,446	3.04
Method Blank	EQ2000227-01	132,215	3.04
Duplicate Lab Control Sample	EQ2000227-03	142,110	3.04
Batch QCMS	EQ2000227-04	137,277	3.04
Batch QCDMS	EQ2000227-05	137,768	3.04
Batch QC	E2000491-001	137,049	3.04

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:**	E2000492
Project:	HS20060133	**Date Analyzed:**	6/15/20 17:15

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200615\20200615_037	**Lab Code:**	EQ2000236-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-02	123,220	3.04
MW20_060120	E2000492-002	144,504	3.04
18CPTMW22DW_060120	E2000492-003	149,536	3.03

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:**	E2000492
Project:	HS20060133	**Date Analyzed:**	6/15/20 18:47

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200615\20200615_048	**Lab Code:**	EQ2000236-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-03	118,003	3.04

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:**	E2000492
Project:	HS20060133	**Date Analyzed:**	6/15/20 19:26

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200615\20200615_053	**Lab Code:**	EQ2000236-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-07	121,261	3.04

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060133

Service Request: E2000492
Date Analyzed: 6/16/20 12:44

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

File ID: I:\LCMS01\DATA\20200616\20200616_008
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2000236-04
Analysis Lot: 683807
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	EQ2000236-04	112,993	3.04
18CPTMW22R_060120	E2000492-004	152,869	3.04
18CPTMW26SW_060120	E2000492-005	153,012	3.01
18WW22_060120	E2000492-007	173,735	3.04
Lab Control Sample	EQ2000227-02	143,312	2.99
C04_060120	E2000492-008	172,187	3.03
18CPTMW22SW_060120	E2000492-001	126,882	3.04

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:**	E2000492
Project:	HS20060133	**Date Analyzed:**	6/16/20 14:15

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200616\20200616_019	**Lab Code:**	EQ2000236-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-05	121,207	3.04
MW8_060120	E2000492-006	116,386	3.04

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:**	E2000492
Project:	HS20060133	**Date Analyzed:**	6/16/20 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\20200616\20200616_026	**Lab Code:**	EQ2000236-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-06	116,422	2.99

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

ALS Group Houston

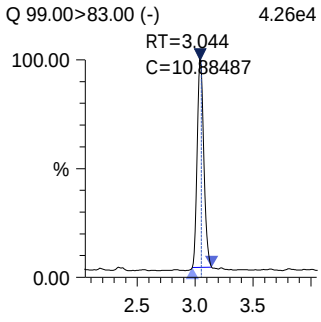
PERCHLORATE7

Date acquired: 6/15/2020 3:44:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_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	6/15/2020 3:44:28 PM	162113	10.88487	20200615_026	3.044	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/15/2020 3:44:28 PM	116446	1.00000	20200615_026	3.042	25.0000	1.0000	4

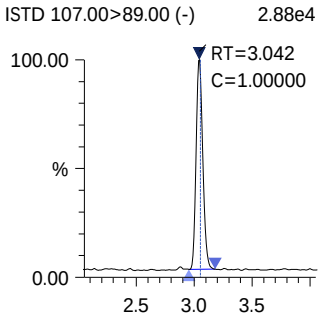
Perchlorate

Conc 10.88487
Area 162113



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 116446



ALS Group Houston

EQ2000227-01

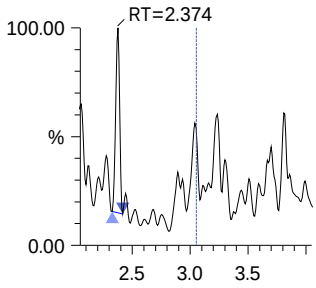
Date acquired: 6/15/2020 4:04:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_028.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-01	6/15/2020 4:04:03 PM	----	----	20200615_028	----	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	EQ2000227-01	6/15/2020 4:04:03 PM	132215	1.00000	20200615_028	3.042	25.0000	1.0000	10

Perchlorate

Conc ----
Area ----

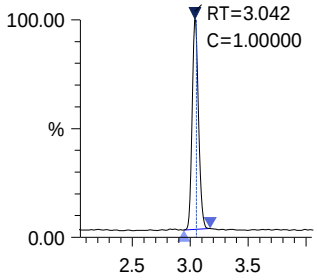
Q 99.00>83.00 (-) 8.01e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 132215

ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

EQ2000227-03

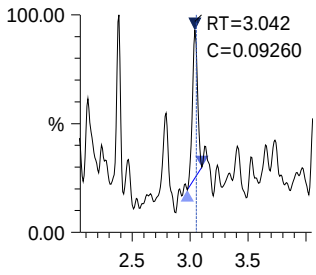
Date acquired: 6/15/2020 4:19:53 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_030.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-03	6/15/2020 4:19:53 PM	1683	0.09260	20200615_030	3.042	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	EQ2000227-03	6/15/2020 4:19:53 PM	142110	1.00000	20200615_030	3.044	25.0000	1.0000	12

Perchlorate

Conc 0.09260
Area 1683

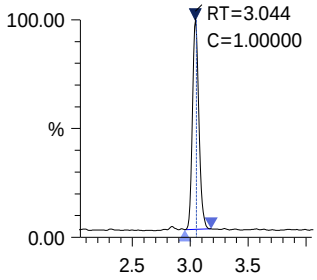
Q 99.00>83.00 (-) 8.01e2



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 142110

ISTD 107.00>89.00 (-) 3.64e4



ALS Group Houston

EQ2000227-04

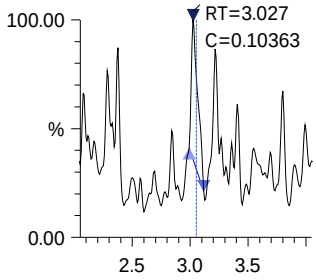
Date acquired: 6/15/2020 4:27:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_031.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-04	6/15/2020 4:27:49 PM	1820	0.10363	20200615_031	3.027	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	EQ2000227-04	6/15/2020 4:27:49 PM	137277	1.00000	20200615_031	3.036	25.0000	1.0000	13

Perchlorate

Conc 0.10363
Area 1820

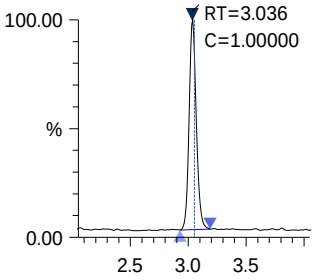
Q 99.00>83.00 (-) 7.21e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 137277

ISTD 107.00>89.00 (-) 3.16e4



ALS Group Houston

EQ2000227-05

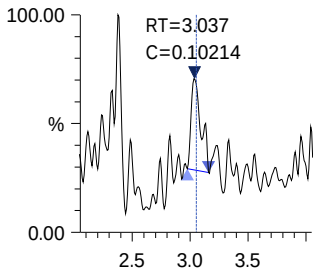
Date acquired: 6/15/2020 4:35:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_032.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-05	6/15/2020 4:35:44 PM	1800	0.10214	20200615_032	3.037	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	EQ2000227-05	6/15/2020 4:35:44 PM	137768	1.00000	20200615_032	3.035	25.0000	1.0000	14

Perchlorate

Conc 0.10214
Area 1800

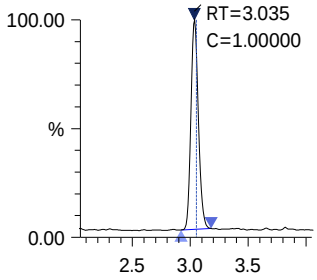
Q 99.00>83.00 (-) 7.10e2



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 137768

ISTD 107.00>89.00 (-) 3.05e4



ALS Group Houston

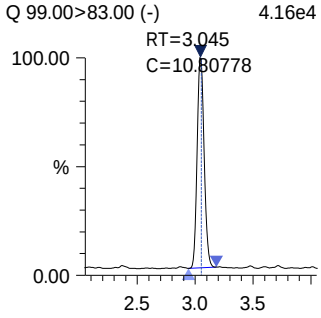
PERCHLORATE7

Date acquired: 6/15/2020 5:15:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_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	6/15/2020 5:15:20 PM	170329	10.80778	20200615_037	3.045	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/15/2020 5:15:20 PM	123220	1.00000	20200615_037	3.043	25.0000	1.0000	4

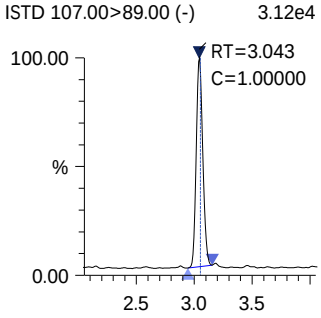
Perchlorate

Conc 10.80778
Area 170329



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 123220



ALS Group Houston

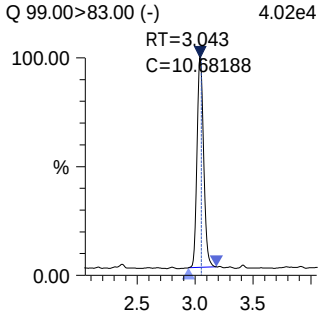
PERCHLORATE7

Date acquired: 6/16/2020 12:44:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_008.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	6/16/2020 12:44:46 PM	154372	10.68188	20200616_008	3.043	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 12:44:46 PM	112993	1.00000	20200616_008	3.040	25.0000	1.0000	4

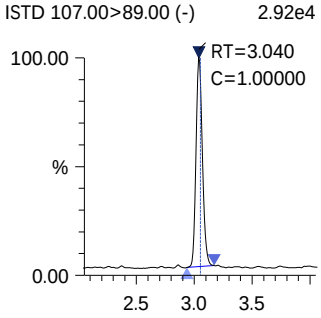
Perchlorate

Conc 10.68188
Area 154372



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112993



ALS Group Houston

EQ2000227-02

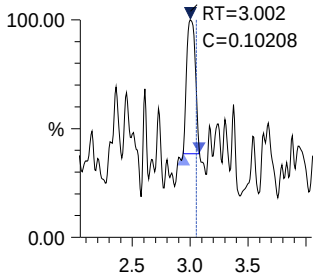
Date acquired: 6/16/2020 1:43:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_015.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-02	6/16/2020 1:43:10 PM	1871	0.10208	20200616_015	3.002	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	EQ2000227-02	6/16/2020 1:43:10 PM	143312	1.00000	20200616_015	2.993	25.0000	1.0000	11

Perchlorate

Conc 0.10208
Area 1871

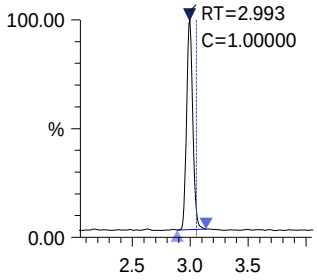
Q 99.00>83.00 (-) 5.66e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 143312

ISTD 107.00>89.00 (-) 3.87e4



ALS Group Houston

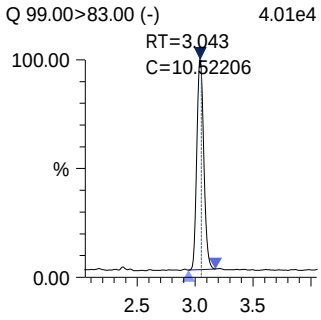
PERCHLORATE7

Date acquired: 6/16/2020 2:15:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_019.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	6/16/2020 2:15:37 PM	163116	10.52206	20200616_019	3.043	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 2:15:37 PM	121207	1.00000	20200616_019	3.039	25.0000	1.0000	4

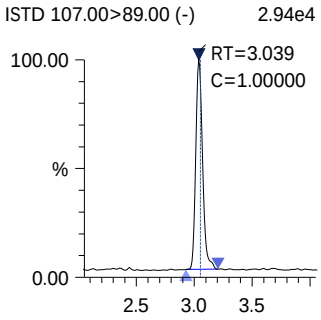
Perchlorate

Conc 10.52206
Area 163116



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 121207



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

June 18, 2020

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

Work Order: **HS20060135**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 9 sample(s) on Jun 03, 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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060135

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060135-01	18CPTMW12SW_060220	Groundwater		02-Jun-2020 07:35	03-Jun-2020 09:05	☐
HS20060135-02	18CPTMW12DW_060220	Groundwater		02-Jun-2020 08:25	03-Jun-2020 09:05	☐
HS20060135-03	MW7_060220	Groundwater		02-Jun-2020 09:15	03-Jun-2020 09:05	☐
HS20060135-04	MW9_060220	Groundwater		02-Jun-2020 10:05	03-Jun-2020 09:05	☐
HS20060135-05	18CPTMW23SW_060220	Groundwater		02-Jun-2020 11:00	03-Jun-2020 09:05	☐
HS20060135-06	18CPTMW23_060220	Groundwater		02-Jun-2020 11:50	03-Jun-2020 09:05	☐
HS20060135-07	18WW24_060220	Groundwater		02-Jun-2020 12:45	03-Jun-2020 09:05	☐
HS20060135-08	18WW14_060220	Groundwater		02-Jun-2020 13:40	03-Jun-2020 09:05	☐
HS20060135-09	Trip Blank	Water	CG-042320-24	02-Jun-2020 00:00	03-Jun-2020 09:05	☐

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060135

CASE NARRATIVE

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: 154162

Sample ID: 18CPTMW23_060220 (HS20060135-06)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: MW7_060220 (HS20060135-03)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R362756

Sample ID: VLCSW-200605

• 1,2,3_Trichlorobenzene and Methylene Chloride exceeded QC limits for LCS. Samples are ND for these compounds.

Sample ID: HS20060114-01MS

• MS and MSD are for an unrelated sample

Batch ID: R362787

Sample ID: CCV

• 1,2,3_Trichlorobenzene and Naphthalene exceeded %D limits for CCV. Samples are ND for these compounds.

Sample ID: VLCSW-200607

• 1,2-Dibromo-3-Chloropropane and 1,2,3-Trichlorobenzene exceeded QC limits for LCS.

Sample ID: HS20060202-01MS

• MS and MSD are for an unrelated sample

Metals by Method SW7470

Batch ID: 154514

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

Metals by Method SW6020

Batch ID: 154143

Sample ID: HS20060202-01MS

• MS and MSD are for an unrelated sample

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW12SW_060220
Collection Date: 02-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-01
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	05-Jun-2020 19:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 19:25
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 19:25
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 19:25
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 19:25
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 19:25
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW12SW_060220
Collection Date: 02-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-01
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	05-Jun-2020 19:25
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 19:25
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 19:25
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 19:25
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:25
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
Trichloroethene	**0.86**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 19:25
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:25
Surr: 1,2-Dichloroethane-d4	*88.1*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 19:25*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 19:25*
Surr: Dibromofluoromethane	*91.3*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 19:25*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 19:25*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.99**		**0.050**	**0.050**	**0.050**	**ug/L**	5	17-Jun-2020 17:21
Surr: 2-Fluorobiphenyl	*88.6*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 17:21*
Surr: 4-Terphenyl-d14	*106*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 17:21*
Surr: Nitrobenzene-d5	*42.1*			**0**	*40-140*	*%REC*	*5*	*17-Jun-2020 17:21*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW12SW_060220
Collection Date: 02-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0233**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 10:39
Antimony	**0.000459**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Arsenic	**0.000653**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Barium	**0.675**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:39
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:39
Calcium	**51.3**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 10:39
Chromium	**0.0266**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Cobalt	**0.00106**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	17-Jun-2020 10:39
Iron	**0.265**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:39
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 10:39
Magnesium	**33.8**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:39
Manganese	**0.122**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Nickel	**0.00147**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Potassium	**98.4**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:39
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 10:39
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 10:39
Sodium	**219**		**0.140**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 01:00
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:39
Vanadium	**0.000625**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
Zinc	**0.00374**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:39
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:50
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060135
Sample ID: 18CPTMW12DW_060220 Lab ID:HS20060135-02
Collection Date: 02-Jun-2020 08:25 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	05-Jun-2020 19:49
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 19:49
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 19:49
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 19:49
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 19:49
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 19:49
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW12DW_060220
Collection Date: 02-Jun-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-02
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	05-Jun-2020 19:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 19:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 19:49
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 19:49
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 19:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 19:49
Surr: 1,2-Dichloroethane-d4	*88.3*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 19:49*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 19:49*
Surr: Dibromofluoromethane	*90.5*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 19:49*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 19:49*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**2.7**		**0.10**	**0.10**	**0.10**	**ug/L**	10	17-Jun-2020 17:40
Surr: 2-Fluorobiphenyl	*125*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 17:40*
Surr: 4-Terphenyl-d14	*96.5*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 17:40*
Surr: Nitrobenzene-d5	*138*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 17:40*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW12DW_060220
Collection Date: 02-Jun-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0103**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 11:01
Antimony	**0.000421**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:01
Arsenic	**0.00349**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:01
Barium	**0.103**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:01
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:01
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:01
Calcium	**7.48**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 11:01
Chromium	**0.00413**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:01
Cobalt	0.000500	U	0.000100	0.000500	0.00500	mg/L	1	17-Jun-2020 11:01
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	17-Jun-2020 11:01
Iron	**0.900**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:01
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 11:01
Magnesium	**4.19**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:01
Manganese	**0.0266**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:01
Nickel	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 11:01
Potassium	**77.0**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:01
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 11:01
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 11:01
Sodium	**151**		**0.140**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 01:02
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:01
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 11:01
Zinc	**0.00502**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:01
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:52
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW7_060220
Collection Date: 02-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-03
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	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,1,1-Trichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,1-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
1,1-Dichloroethene	**7.6**		**1.0**	**2.5**	**5.0**	**UG/L**	5	05-Jun-2020 21:01
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,2-Dibromo-3-chloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
1,2-Dibromoethane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,2-Dichloroethane	**27**		**1.0**	**2.5**	**5.0**	**UG/L**	5	05-Jun-2020 21:01
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
2,2-Dichloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
2-Butanone	5.0	U	2.5	5.0	10	UG/L	5	05-Jun-2020 21:01
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
2-Hexanone	10	U	5.0	10	10	UG/L	5	05-Jun-2020 21:01
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
4-Methyl-2-pentanone	10	U	3.5	10	10	UG/L	5	05-Jun-2020 21:01
Acetone	5.0	U	2.0	5.0	10	UG/L	5	05-Jun-2020 21:01
Benzene	**6.4**		**1.0**	**2.5**	**5.0**	**UG/L**	5	05-Jun-2020 21:01
Bromobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Bromochloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
Bromodichloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
Bromoform	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Bromomethane	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Carbon disulfide	5.0	U	3.0	5.0	10	UG/L	5	05-Jun-2020 21:01
Carbon tetrachloride	**3.6**	J	**2.5**	**5.0**	**5.0**	**UG/L**	5	05-Jun-2020 21:01
Chlorobenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Chloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Chloroform	**13**		**1.0**	**2.5**	**5.0**	**UG/L**	5	05-Jun-2020 21:01

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW7_060220
Collection Date: 02-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
cis-1,2-Dichloroethene	**19**		**1.0**	**2.5**	**5.0**	**UG/L**	5	05-Jun-2020 21:01
cis-1,3-Dichloropropene	2.5	U	0.50	2.5	5.0	UG/L	5	05-Jun-2020 21:01
Dibromochloromethane	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Dibromomethane	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Ethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Isopropylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
m,p-Xylene	5.0	U	2.5	5.0	10	UG/L	5	05-Jun-2020 21:01
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	05-Jun-2020 21:01
n-Butylbenzene	5.0	U	2.0	5.0	5.0	UG/L	5	05-Jun-2020 21:01
n-Propylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Naphthalene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
o-Xylene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Styrene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Tetrachloroethene	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Toluene	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
trans-1,2-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
trans-1,3-Dichloropropene	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
Trichloroethene	**2,100**		**4.0**	**10**	**20**	**UG/L**	20	05-Jun-2020 15:25
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	05-Jun-2020 21:01
Vinyl chloride	2.5	U	1.0	2.5	5.0	UG/L	5	05-Jun-2020 21:01
Surr: 1,2-Dichloroethane-d4	*87.1*			**0**	*81-118*	*%REC*	*20*	*05-Jun-2020 15:25*
Surr: 1,2-Dichloroethane-d4	*86.9*			**0**	*81-118*	*%REC*	*5*	*05-Jun-2020 21:01*
Surr: 4-Bromofluorobenzene	*99.2*			**0**	*85-114*	*%REC*	*20*	*05-Jun-2020 15:25*
Surr: 4-Bromofluorobenzene	*99.7*			**0**	*85-114*	*%REC*	*5*	*05-Jun-2020 21:01*
Surr: Dibromofluoromethane	*87.5*			**0**	*80-119*	*%REC*	*20*	*05-Jun-2020 15:25*
Surr: Dibromofluoromethane	*89.1*			**0**	*80-119*	*%REC*	*5*	*05-Jun-2020 21:01*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*20*	*05-Jun-2020 15:25*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*5*	*05-Jun-2020 21:01*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**30**		**1.0**	**1.0**	**1.0**	**ug/L**	100	17-Jun-2020 18:00
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*17-Jun-2020 18:00*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*17-Jun-2020 18:00*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*17-Jun-2020 18:00*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW7_060220
Collection Date: 02-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060135
Sample ID: MW9_060220 Lab ID:HS20060135-04
Collection Date: 02-Jun-2020 10:05 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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,1-Dichloroethane	**0.41**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 15:01
1,1-Dichloroethene	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 15:01
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 15:01
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 15:01
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 15:01
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 15:01
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 15:01
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Chloroform	**0.83**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 15:01

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW9_060220
Collection Date: 02-Jun-2020 10:05

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-04
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	05-Jun-2020 15:01
cis-1,2-Dichloroethene	**12**		**0.20**	**0.50**	**1.0**	**UG/L**	1	05-Jun-2020 15:01
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 15:01
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 15:01
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 15:01
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 15:01
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
Trichloroethene	**710**		**5.0**	**12**	**25**	**UG/L**	25	05-Jun-2020 16:37
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 15:01
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 15:01
Surr: 1,2-Dichloroethane-d4	*87.9*			**0**	*81-118*	*%REC*	*25*	*05-Jun-2020 16:37*
Surr: 1,2-Dichloroethane-d4	*87.0*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 15:01*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*25*	*05-Jun-2020 16:37*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 15:01*
Surr: Dibromofluoromethane	*90.4*			**0**	*80-119*	*%REC*	*25*	*05-Jun-2020 16:37*
Surr: Dibromofluoromethane	*90.5*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 15:01*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 15:01*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*25*	*05-Jun-2020 16:37*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**2.6**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 14:39
Surr: 2-Fluorobiphenyl	*99.5*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 14:39*
Surr: 4-Terphenyl-d14	*77.7*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 14:39*
Surr: Nitrobenzene-d5	*48.7*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 14:39*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW9_060220
Collection Date: 02-Jun-2020 10:05

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0262**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 11:04
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 11:04
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 11:04
Barium	**0.0989**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:04
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:04
Calcium	**12.8**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 11:04
Chromium	**0.154**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
Cobalt	**0.00167**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
Copper	**0.00114**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
Iron	**1.16**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:04
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 11:04
Magnesium	**2.64**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:04
Manganese	**0.0492**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
Nickel	**0.0829**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
Potassium	**0.408**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:04
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 11:04
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 11:04
Sodium	**14.0**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:04
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:04
Vanadium	**0.00297**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
Zinc	**0.00526**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:04
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:54
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW23SW_060220
Collection Date: 02-Jun-2020 11:00

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 20:13
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 20:13
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 20:13
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 20:13
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 20:13
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW23SW_060220
Collection Date: 02-Jun-2020 11:00

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-05
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	05-Jun-2020 20:13
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 20:13
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 20:13
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:13
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:13
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:13
Surr: 1,2-Dichloroethane-d4	*86.9*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 20:13*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 20:13*
Surr: Dibromofluoromethane	*90.3*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 20:13*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 20:13*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.3**		**0.10**	**0.10**	**0.10**	**ug/L**	10	17-Jun-2020 18:39
Surr: 2-Fluorobiphenyl	*97.2*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 18:39*
Surr: 4-Terphenyl-d14	*87.9*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 18:39*
Surr: Nitrobenzene-d5	*77.0*			**0**	*40-140*	*%REC*	*10*	*17-Jun-2020 18:39*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW23_060220
Collection Date: 02-Jun-2020 11:50

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-06
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	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,1,1-Trichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,1-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
1,1-Dichloroethene	**4.7**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 15:07
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,2-Dibromo-3-chloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
1,2-Dibromoethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,2-Dichloroethane	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 15:07
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
2,2-Dichloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
2-Butanone	5.0	U	2.5	5.0	10	UG/L	5	07-Jun-2020 15:07
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
2-Hexanone	10	U	5.0	10	10	UG/L	5	07-Jun-2020 15:07
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
4-Methyl-2-pentanone	10	U	3.5	10	10	UG/L	5	07-Jun-2020 15:07
Acetone	5.0	U	2.0	5.0	10	UG/L	5	07-Jun-2020 15:07
Benzene	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
Bromobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Bromochloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
Bromodichloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
Bromoform	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Bromomethane	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Carbon disulfide	5.0	U	3.0	5.0	10	UG/L	5	07-Jun-2020 15:07
Carbon tetrachloride	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Chlorobenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Chloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Chloroform	**3.1**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 15:07

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW23_060220
Collection Date: 02-Jun-2020 11:50

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
cis-1,2-Dichloroethene	**120**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 15:07
cis-1,3-Dichloropropene	2.5	U	0.50	2.5	5.0	UG/L	5	07-Jun-2020 15:07
Dibromochloromethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Dibromomethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Ethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Isopropylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
m,p-Xylene	5.0	U	2.5	5.0	10	UG/L	5	07-Jun-2020 15:07
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	07-Jun-2020 15:07
n-Butylbenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 15:07
n-Propylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Naphthalene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
o-Xylene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Styrene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Tetrachloroethene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Toluene	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
trans-1,2-Dichloroethene	**2.0**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 15:07
trans-1,3-Dichloropropene	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 15:07
Trichloroethene	**2,300**		**5.0**	**12**	**25**	**UG/L**	25	07-Jun-2020 16:19
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 15:07
Vinyl chloride	**2.1**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 15:07
Surr: 1,2-Dichloroethane-d4	*86.8*			**0**	*81-118*	*%REC*	*5*	*07-Jun-2020 15:07*
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*25*	*07-Jun-2020 16:19*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*5*	*07-Jun-2020 15:07*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*25*	*07-Jun-2020 16:19*
Surr: Dibromofluoromethane	*89.4*			**0**	*80-119*	*%REC*	*5*	*07-Jun-2020 15:07*
Surr: Dibromofluoromethane	*88.1*			**0**	*80-119*	*%REC*	*25*	*07-Jun-2020 16:19*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*5*	*07-Jun-2020 15:07*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*25*	*07-Jun-2020 16:19*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**16**		**1.0**	**1.0**	**1.0**	**ug/L**	100	17-Jun-2020 18:59
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*17-Jun-2020 18:59*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*17-Jun-2020 18:59*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*17-Jun-2020 18:59*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW23_060220
Collection Date: 02-Jun-2020 11:50

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW24_060220
Collection Date: 02-Jun-2020 12:45

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-07
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	05-Jun-2020 20:37
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 20:37
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	05-Jun-2020 20:37
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	05-Jun-2020 20:37
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 20:37
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	05-Jun-2020 20:37
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW24_060220
Collection Date: 02-Jun-2020 12:45

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-07
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	05-Jun-2020 20:37
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	05-Jun-2020 20:37
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	05-Jun-2020 20:37
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	05-Jun-2020 20:37
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	05-Jun-2020 20:37
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	05-Jun-2020 20:37
Surr: 1,2-Dichloroethane-d4	*86.9*			**0**	*81-118*	*%REC*	*1*	*05-Jun-2020 20:37*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*05-Jun-2020 20:37*
Surr: Dibromofluoromethane	*89.8*			**0**	*80-119*	*%REC*	*1*	*05-Jun-2020 20:37*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*05-Jun-2020 20:37*

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW24_060220
Collection Date: 02-Jun-2020 12:45

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0819**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 13:09
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 13:09
Arsenic	**0.000639**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:09
Barium	**0.0491**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:09
Beryllium	**0.000664**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 13:09
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 13:09
Calcium	**39.3**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 13:09
Chromium	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 13:09
Cobalt	**0.00203**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:09
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	17-Jun-2020 13:09
Iron	**0.0867**	J	**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:09
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 13:09
Magnesium	**33.4**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:09
Manganese	**0.433**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:09
Nickel	**0.0555**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 13:09
Potassium	**0.501**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:09
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 13:09
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 13:09
Sodium	**513**		**0.140**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 01:06
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 13:09
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 13:09
Zinc	**0.0442**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:09
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	**0.0000320**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	16-Jun-2020 16:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW14_060220
Collection Date: 02-Jun-2020 13:40

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0545**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 11:09
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 11:09
Arsenic	**0.000746**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Barium	**0.984**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:09
Cadmium	**0.000524**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 11:09
Calcium	**43.3**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 11:09
Chromium	**0.598**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Cobalt	**0.00311**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Copper	**0.00780**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Iron	**3.26**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:09
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 11:09
Magnesium	**33.2**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:09
Manganese	**0.244**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Nickel	**0.253**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Potassium	**3.79**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:09
Selenium	**0.00145**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 11:09
Sodium	**117**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 11:09
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 11:09
Vanadium	**0.00347**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
Zinc	**0.0121**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 11:09
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	**0.0000340**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	16-Jun-2020 16:57
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060135

Sample ID: Trip Blank Lab ID:HS20060135-09

Collection Date: 02-Jun-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	07-Jun-2020 13:55
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 13:55
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 13:55
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 13:55
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 13:55
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 13:55
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55

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

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 02-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060135
Lab ID:HS20060135-09
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	07-Jun-2020 13:55
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 13:55
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 13:55
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 13:55
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 13:55
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 13:55
Surr: 1,2-Dichloroethane-d4	*85.9*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 13:55*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 13:55*
Surr: Dibromofluoromethane	*88.7*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 13:55*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 13:55*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

Batch ID: 154143 **Start Date:** 05 Jun 2020 10:00 **End Date:** 05 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060135-01		10 (mL)	10 (mL)	1
HS20060135-02		10 (mL)	10 (mL)	1
HS20060135-04		10 (mL)	10 (mL)	1
HS20060135-07		10 (mL)	10 (mL)	1
HS20060135-08		10 (mL)	10 (mL)	1

Batch ID: 154162 **Start Date:** 05 Jun 2020 09:00 **End Date:** 05 Jun 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
HS20060135-01	1	1000 (mL)	1 (mL)	0.001
HS20060135-02	1	1000 (mL)	1 (mL)	0.001
HS20060135-03	1	1000 (mL)	1 (mL)	0.001
HS20060135-04	1	1000 (mL)	1 (mL)	0.001
HS20060135-05	1	1000 (mL)	1 (mL)	0.001
HS20060135-06	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154514 **Start Date:** 16 Jun 2020 11:00 **End Date:** 16 Jun 2020 13:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060135-01		10 (mL)	10 (mL)	1
HS20060135-02		10 (mL)	10 (mL)	1
HS20060135-04		10 (mL)	10 (mL)	1
HS20060135-07		10 (mL)	10 (mL)	1
HS20060135-08		10 (mL)	10 (mL)	1

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154143 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060135-01	18CPTMW12SW_060220	02 Jun 2020 07:35		05 Jun 2020 14:00	17 Jun 2020 10:39	1
HS20060135-01	18CPTMW12SW_060220	02 Jun 2020 07:35		05 Jun 2020 14:00	13 Jun 2020 01:00	10
HS20060135-02	18CPTMW12DW_060220	02 Jun 2020 08:25		05 Jun 2020 14:00	17 Jun 2020 11:01	1
HS20060135-02	18CPTMW12DW_060220	02 Jun 2020 08:25		05 Jun 2020 14:00	13 Jun 2020 01:02	10
HS20060135-04	MW9_060220	02 Jun 2020 10:05		05 Jun 2020 14:00	17 Jun 2020 11:04	1
HS20060135-07	18WW24_060220	02 Jun 2020 12:45		05 Jun 2020 14:00	17 Jun 2020 13:09	1
HS20060135-07	18WW24_060220	02 Jun 2020 12:45		05 Jun 2020 14:00	13 Jun 2020 01:06	10
HS20060135-08	18WW14_060220	02 Jun 2020 13:40		05 Jun 2020 14:00	17 Jun 2020 11:09	1
Batch ID: 154162 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060135-01	18CPTMW12SW_060220	02 Jun 2020 07:35		05 Jun 2020 13:59	17 Jun 2020 17:21	5
HS20060135-02	18CPTMW12DW_060220	02 Jun 2020 08:25		05 Jun 2020 13:59	17 Jun 2020 17:40	10
HS20060135-03	MW7_060220	02 Jun 2020 09:15		05 Jun 2020 13:59	17 Jun 2020 18:00	100
HS20060135-04	MW9_060220	02 Jun 2020 10:05		05 Jun 2020 13:59	18 Jun 2020 14:39	10
HS20060135-05	18CPTMW23SW_060220	02 Jun 2020 11:00		05 Jun 2020 13:59	17 Jun 2020 18:39	10
HS20060135-06	18CPTMW23_060220	02 Jun 2020 11:50		05 Jun 2020 13:59	17 Jun 2020 18:59	100
Batch ID: 154514 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060135-01	18CPTMW12SW_060220	02 Jun 2020 07:35		16 Jun 2020 11:00	16 Jun 2020 16:50	1
HS20060135-02	18CPTMW12DW_060220	02 Jun 2020 08:25		16 Jun 2020 11:00	16 Jun 2020 16:52	1
HS20060135-04	MW9_060220	02 Jun 2020 10:05		16 Jun 2020 11:00	16 Jun 2020 16:54	1
HS20060135-07	18WW24_060220	02 Jun 2020 12:45		16 Jun 2020 11:00	16 Jun 2020 16:55	1
HS20060135-08	18WW14_060220	02 Jun 2020 13:40		16 Jun 2020 11:00	16 Jun 2020 16:57	1
Batch ID: R362756 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060135-01	18CPTMW12SW_060220	02 Jun 2020 07:35			05 Jun 2020 19:25	1
HS20060135-02	18CPTMW12DW_060220	02 Jun 2020 08:25			05 Jun 2020 19:49	1
HS20060135-03	MW7_060220	02 Jun 2020 09:15			05 Jun 2020 21:01	5
HS20060135-03	MW7_060220	02 Jun 2020 09:15			05 Jun 2020 15:25	20
HS20060135-04	MW9_060220	02 Jun 2020 10:05			05 Jun 2020 16:37	25
HS20060135-04	MW9_060220	02 Jun 2020 10:05			05 Jun 2020 15:01	1
HS20060135-05	18CPTMW23SW_060220	02 Jun 2020 11:00			05 Jun 2020 20:13	1
HS20060135-07	18WW24_060220	02 Jun 2020 12:45			05 Jun 2020 20:37	1
Batch ID: R362787 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060135-09	Trip Blank	02 Jun 2020 00:00			07 Jun 2020 13:55	1
Batch ID: R362787 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060135-06	18CPTMW23_060220	02 Jun 2020 11:50			07 Jun 2020 16:19	25
HS20060135-06	18CPTMW23_060220	02 Jun 2020 11:50			07 Jun 2020 15:07	5

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R363524 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060135-01	18CPTMW12SW_060220	02 Jun 2020 07:35			18 Jun 2020 15:50	1
HS20060135-02	18CPTMW12DW_060220	02 Jun 2020 08:25			18 Jun 2020 15:50	1
HS20060135-03	MW7_060220	02 Jun 2020 09:15			18 Jun 2020 15:50	1
HS20060135-04	MW9_060220	02 Jun 2020 10:05			18 Jun 2020 15:50	1
HS20060135-05	18CPTMW23SW_060220	02 Jun 2020 11:00			18 Jun 2020 15:50	1
HS20060135-06	18CPTMW23_060220	02 Jun 2020 11:50			18 Jun 2020 15:50	1
HS20060135-07	18WW24_060220	02 Jun 2020 12:45			18 Jun 2020 15:50	1
HS20060135-08	18WW14_060220	02 Jun 2020 13:40			18 Jun 2020 15:50	1

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:54**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622461** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **13-Jun-2020 00:19**
Client ID: Run ID: **ICPMS04_363205** SeqNo: **5618488** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1036	0.0100	0.1	0	104	84 - 117				
Antimony	0.04444	0.00500	0.05	0	88.9	85 - 117				
Arsenic	0.04839	0.00500	0.05	0	96.8	84 - 116				
Barium	0.04305	0.00500	0.05	0	86.1	86 - 114				
Beryllium	0.04253	0.00200	0.05	0	85.1	83 - 121				
Cadmium	0.04548	0.00200	0.05	0	91.0	87 - 115				
Calcium	4.915	0.500	5	0	98.3	87 - 118				
Chromium	0.04599	0.00500	0.05	0	92.0	85 - 116				
Cobalt	0.04668	0.00500	0.05	0	93.4	86 - 115				
Copper	0.04723	0.00500	0.05	0	94.5	85 - 118				
Iron	4.804	0.200	5	0	96.1	87 - 118				
Lead	0.04455	0.00500	0.05	0	89.1	88 - 115				
Magnesium	4.772	0.200	5	0	95.4	83 - 118				
Manganese	0.04766	0.00500	0.05	0	95.3	87 - 115				
Nickel	0.04851	0.00500	0.05	0	97.0	85 - 117				
Potassium	4.928	0.200	5	0	98.6	87 - 115				
Selenium	0.04925	0.00500	0.05	0	98.5	80 - 120				
Thallium	0.04384	0.00200	0.05	0	87.7	82 - 116				
Vanadium	0.04598	0.00500	0.05	0	92.0	86 - 115				
Zinc	0.04946	0.00500	0.05	0	98.9	83 - 119				

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:57**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622462** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	0.04405	0.00500	0.05	0	88.1	85 - 116				
Sodium	4.488	0.200	5	0	89.8	85 - 117				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:27**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622452** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4279	0.0100	0.2	0.1871	120	84 - 117				S
Antimony	0.05061	0.00500	0.05	0.000066	101	85 - 117				
Arsenic	0.05255	0.00500	0.05	0.00058	104	84 - 116				
Barium	0.1782	0.00500	0.05	0.1242	108	86 - 114				
Beryllium	0.05514	0.00200	0.05	0.000124	110	83 - 121				
Cadmium	0.05175	0.00200	0.05	0.00014	103	87 - 115				
Calcium	11.32	0.500	5	6.187	103	87 - 118				
Chromium	0.06117	0.00500	0.05	0.01191	98.5	85 - 116				
Cobalt	0.04819	0.00500	0.05	0.000522	95.3	86 - 115				
Copper	0.05324	0.00500	0.05	0.00134	104	85 - 118				
Iron	22.72	0.200	5	17.7	100	87 - 118				
Lead	0.05014	0.00500	0.05	0.000553	99.2	88 - 115				
Magnesium	8.37	0.200	5	3.314	101	83 - 118				
Manganese	0.3712	0.00500	0.05	0.3265	89.3	87 - 115				O
Nickel	0.05722	0.00500	0.05	0.006132	102	85 - 117				
Potassium	7.374	0.200	5	2.014	107	87 - 115				
Selenium	0.05536	0.00500	0.05	-0.000101	111	80 - 120				
Silver	0.05019	0.00500	0.05	0.000014	100	85 - 116				
Sodium	27.24	0.200	5	22.16	101	85 - 117				O
Thallium	0.04787	0.00200	0.05	0.000063	95.6	82 - 116				
Vanadium	0.05291	0.00500	0.05	0.002064	102	86 - 115				
Zinc	0.05854	0.00500	0.05	0.006047	105	83 - 119				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:30**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622453** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4083	0.0100	0.2	0.1871	111	84 - 117	0.4279	4.69	20	
Antimony	0.04837	0.00500	0.05	0.000066	96.6	85 - 117	0.05061	4.53	20	
Arsenic	0.05104	0.00500	0.05	0.00058	101	84 - 116	0.05255	2.92	20	
Barium	0.1734	0.00500	0.05	0.1242	98.3	86 - 114	0.1782	2.75	20	
Beryllium	0.05386	0.00200	0.05	0.000124	107	83 - 121	0.05514	2.35	20	
Cadmium	0.05011	0.00200	0.05	0.00014	99.9	87 - 115	0.05175	3.23	20	
Calcium	10.87	0.500	5	6.187	93.8	87 - 118	11.32	3.97	20	
Chromium	0.05865	0.00500	0.05	0.01191	93.5	85 - 116	0.06117	4.21	20	
Cobalt	0.04616	0.00500	0.05	0.000522	91.3	86 - 115	0.04819	4.31	20	
Copper	0.05055	0.00500	0.05	0.00134	98.4	85 - 118	0.05324	5.19	20	
Iron	21.65	0.200	5	17.7	79.0	87 - 118	22.72	4.82	20	S
Lead	0.04823	0.00500	0.05	0.000553	95.4	88 - 115	0.05014	3.89	20	
Magnesium	8.178	0.200	5	3.314	97.3	83 - 118	8.37	2.32	20	
Manganese	0.3574	0.00500	0.05	0.3265	61.7	87 - 115	0.3712	3.79	20	SO
Nickel	0.05436	0.00500	0.05	0.006132	96.4	85 - 117	0.05722	5.14	20	
Potassium	7.075	0.200	5	2.014	101	87 - 115	7.374	4.13	20	
Selenium	0.05171	0.00500	0.05	-0.000101	104	80 - 120	0.05536	6.81	20	
Silver	0.04799	0.00500	0.05	0.000014	96.0	85 - 116	0.05019	4.49	20	
Sodium	26.07	0.200	5	22.16	78.1	85 - 117	27.24	4.39	20	SO
Thallium	0.04564	0.00200	0.05	0.000063	91.1	82 - 116	0.04787	4.78	20	
Vanadium	0.05056	0.00500	0.05	0.002064	97.0	86 - 115	0.05291	4.54	20	
Zinc	0.05664	0.00500	0.05	0.006047	101	83 - 119	0.05854	3.3	20	

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060202-01PDS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:32**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622454** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4005	0.0100	0.2	0.1871	107	80 - 120				
Antimony	0.1916	0.00500	0.2	0.000066	95.8	80 - 120				
Arsenic	0.2107	0.00500	0.2	0.00058	105	80 - 120				
Barium	0.3222	0.00500	0.2	0.1242	99.0	80 - 120				
Cadmium	0.2032	0.00200	0.2	0.00014	102	80 - 120				
Calcium	26.11	0.500	20	6.187	99.6	80 - 120				
Chromium	0.2118	0.00500	0.2	0.01191	99.9	80 - 120				
Cobalt	0.1896	0.00500	0.2	0.000522	94.6	80 - 120				
Copper	0.2057	0.00500	0.2	0.00134	102	80 - 120				
Iron	37.41	0.200	20	17.7	98.6	80 - 120				
Lead	0.2051	0.00500	0.2	0.000553	102	80 - 120				
Magnesium	23.55	0.200	20	3.314	101	80 - 120				
Manganese	0.5342	0.00500	0.2	0.3265	104	80 - 120				
Nickel	0.2062	0.00500	0.2	0.006132	100	80 - 120				
Potassium	22.5	0.200	20	2.014	102	80 - 120				
Selenium	0.2133	0.00500	0.2	-0.000101	107	80 - 120				
Sodium	41.58	0.200	20	22.16	97.1	80 - 120				
Thallium	0.2051	0.00200	0.2	0.000063	102	80 - 120				
Vanadium	0.2053	0.00500	0.2	0.002064	102	80 - 120				
Zinc	0.2152	0.00500	0.2	0.006047	105	80 - 120				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060202-01SD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:25**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622451** PrepDate: **05-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.1824	0.0500					0.1871	2.56	10	
Antimony	0.00250	0.0250					0.000066	0	10	U
Arsenic	0.00250	0.0250					0.00058	0	10	U
Barium	0.1203	0.0250					0.1242	3.17	10	
Beryllium	0.00250	0.0100					0.000124	0	10	U
Cadmium	0.00250	0.0100					0.00014	0	10	U
Calcium	5.988	2.50					6.187	3.21	10	
Chromium	0.02323	0.0250					0.01191	0	10	J
Cobalt	0.00250	0.0250					0.000522	0	10	U
Copper	0.0125	0.0250					0.00134	0	10	U
Iron	17.81	1.00					17.7	0.621	10	
Lead	0.00500	0.0250					0.000553	0	10	U
Magnesium	3.144	1.00					3.314	5.11	10	
Manganese	0.3208	0.0250					0.3265	1.75	10	
Nickel	0.007999	0.0250					0.006132	0	10	J
Potassium	1.999	1.00					2.014	0.717	10	
Selenium	0.0125	0.0250					-0.000101	0	10	U
Silver	0.00250	0.0250					0.000014	0	10	U
Sodium	22.42	1.00					22.16	1.16	10	
Thallium	0.00250	0.0100					0.000063	0	10	U
Vanadium	0.007346	0.0250					0.002064	0	10	J
Zinc	0.02549	0.0250					0.006047	0	10	

The following samples were analyzed in this batch: HS20060135-01 HS20060135-02 HS20060135-04 HS20060135-07 HS20060135-08

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154514 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:30**
Client ID: Run ID: **HG03_363352** SeqNo: **5621648** PrepDate: **16-Jun-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-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:31**
Client ID: Run ID: **HG03_363352** SeqNo: **5621649** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00506	0.000200	0.005	0	101	82 - 119				

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **16-Jun-2020 16:35**
Client ID: Run ID: **HG03_363352** SeqNo: **5621651** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119				

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **16-Jun-2020 16:37**
Client ID: Run ID: **HG03_363352** SeqNo: **5621652** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119	0.005080	0	20	

The following samples were analyzed in this batch: HS20060135-01 HS20060135-02 HS20060135-04 HS20060135-07 HS20060135-08

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: 154162 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154162** Units: **ug/L** Analysis Date: **17-Jun-2020 14:05**
Client ID: Run ID: **SV-6_363438** SeqNo: **5625117** PrepDate: **05-Jun-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	*0.07895*	*0*	*0.08*	*0*	*98.7*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08965*	*0*	*0.08*	*0*	*112*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.09208*	*0*	*0.08*	*0*	*115*	*40 - 140*				

LCS Sample ID: **LCS-154162** Units: **ug/L** Analysis Date: **17-Jun-2020 14:25**
Client ID: Run ID: **SV-6_363438** SeqNo: **5625118** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.06057	0.010	0.08	0	75.7	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08227*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08257*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.09886*	*0*	*0.08*	*0*	*124*	*40 - 140*				

LCSD Sample ID: **LCSD-154162** Units: **ug/L** Analysis Date: **17-Jun-2020 14:44**
Client ID: Run ID: **SV-6_363438** SeqNo: **5625119** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.05081	0.010	0.08	0	63.5	40 - 140	0.06057	17.5	20	
Surr: 2-Fluorobiphenyl	*0.07826*	*0*	*0.08*	*0*	*97.8*	*40 - 140*	*0.08227*	*4.99*	*20*	
Surr: 4-Terphenyl-d14	*0.08379*	*0*	*0.08*	*0*	*105*	*40 - 140*	*0.08257*	*1.46*	*20*	
Surr: Nitrobenzene-d5	*0.09518*	*0*	*0.08*	*0*	*119*	*40 - 140*	*0.09886*	*3.79*	*20*	

The following samples were analyzed in this batch: HS20060135-01 HS20060135-02 HS20060135-03 HS20060135-04 HS20060135-05 HS20060135-06

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 12:12**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608818** 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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 12:12**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608818** 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	*43.59*	*1.0*	*50*	*0*	*87.2*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.59*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*45.12*	*1.0*	*50*	*0*	*90.2*	*80 - 119*				
Surr: Toluene-d8	*54.1*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 11:24**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608817** 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	20.1	1.0	20	0	100	78 - 124				
1,1,1-Trichloroethane	19.58	1.0	20	0	97.9	74 - 131				
1,1,2,2-Tetrachloroethane	20.17	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	20.84	1.0	20	0	104	80 - 119				
1,1-Dichloroethane	20.04	1.0	20	0	100	77 - 125				
1,1-Dichloroethene	19.37	1.0	20	0	96.8	71 - 131				
1,1-Dichloropropene	18.37	1.0	20	0	91.8	78 - 125				
1,2,3-Trichlorobenzene	26.29	1.0	20	0	131	69 - 129				S
1,2,3-Trichloropropane	20.01	1.0	20	0	100	73 - 122				
1,2,4-Trichlorobenzene	23.72	1.0	20	0	119	69 - 130				
1,2,4-Trimethylbenzene	19.05	1.0	20	0	95.3	76 - 124				
1,2-Dibromo-3-chloropropane	21.8	1.0	20	0	109	62 - 128				
1,2-Dibromoethane	20.48	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	19.76	1.0	20	0	98.8	80 - 119				
1,2-Dichloroethane	20.65	1.0	20	0	103	73 - 128				
1,2-Dichloropropane	21.17	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	18.22	1.0	20	0	91.1	75 - 124				
1,3-Dichlorobenzene	19.01	1.0	20	0	95.0	80 - 119				
1,3-Dichloropropane	20.47	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	19.33	1.0	20	0	96.6	79 - 118				
2,2-Dichloropropane	20.21	1.0	20	0	101	60 - 139				
2-Butanone	39.35	2.0	40	0	98.4	56 - 143				
2-Chlorotoluene	18.15	1.0	20	0	90.7	79 - 122				
2-Hexanone	43.17	2.0	40	0	108	57 - 139				
4-Chlorotoluene	18.48	1.0	20	0	92.4	78 - 122				
4-Isopropyltoluene	18.48	1.0	20	0	92.4	77 - 127				
4-Methyl-2-pentanone	41.93	2.0	40	0	105	67 - 130				
Acetone	41.64	2.0	40	0	104	39 - 160				
Benzene	19.99	1.0	20	0	99.9	79 - 120				
Bromobenzene	19.54	1.0	20	0	97.7	80 - 120				
Bromochloromethane	20.48	1.0	20	0	102	78 - 123				
Bromodichloromethane	20.64	1.0	20	0	103	79 - 125				
Bromoform	21.14	1.0	20	0	106	66 - 130				
Bromomethane	21.94	1.0	20	0	110	53 - 141				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200605** Units: **UG/L** Analysis Date: **05-Jun-2020 11:24**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608817** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	39.58	2.0	40	0	98.9	64 - 133				
Carbon tetrachloride	18.46	1.0	20	0	92.3	72 - 136				
Chlorobenzene	19.82	1.0	20	0	99.1	82 - 118				
Chloroethane	19.4	1.0	20	0	97.0	60 - 138				
Chloroform	20.27	1.0	20	0	101	79 - 124				
Chloromethane	20.05	1.0	20	0	100	50 - 139				
cis-1,2-Dichloroethene	20.21	1.0	20	0	101	78 - 123				
cis-1,3-Dichloropropene	20.53	1.0	20	0	103	75 - 124				
Dibromochloromethane	19.97	1.0	20	0	99.8	74 - 126				
Dibromomethane	20.6	1.0	20	0	103	79 - 123				
Dichlorodifluoromethane	19.02	1.0	20	0	95.1	32 - 152				
Ethylbenzene	19.23	1.0	20	0	96.2	79 - 121				
Hexachlorobutadiene	25.34	1.0	20	0	127	66 - 134				
Isopropylbenzene	18.57	1.0	20	0	92.9	72 - 131				
m,p-Xylene	38.57	2.0	40	0	96.4	80 - 121				
Methylene chloride	27.28	2.0	20	0	136	74 - 124				S
Naphthalene	22.61	1.0	20	0	113	61 - 128				
n-Butylbenzene	18.68	1.0	20	0	93.4	75 - 128				
n-Propylbenzene	18.45	1.0	20	0	92.2	76 - 126				
o-Xylene	19.69	1.0	20	0	98.5	78 - 122				
sec-Butylbenzene	17.83	1.0	20	0	89.2	77 - 126				
Styrene	19.82	1.0	20	0	99.1	78 - 123				
tert-Butylbenzene	17.64	1.0	20	0	88.2	78 - 124				
Tetrachloroethene	19.22	1.0	20	0	96.1	74 - 129				
Toluene	19.45	1.0	20	0	97.2	80 - 121				
trans-1,2-Dichloroethene	20.63	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	21.24	1.0	20	0	106	73 - 127				
Trichloroethene	19.67	1.0	20	0	98.3	79 - 123				
Trichlorofluoromethane	19.32	1.0	20	0	96.6	65 - 141				
Vinyl chloride	17.43	1.0	20	0	87.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*52.3*	*1.0*	*50*	*0*	*105*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.05*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*51.39*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*47.59*	*1.0*	*50*	*0*	*95.2*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060114-01MS** Units: **UG/L** Analysis Date: **05-Jun-2020 15:49**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608827** 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	22.36	1.0	20	0	112	78 - 124				
1,1,1-Trichloroethane	19.16	1.0	20	0	95.8	74 - 131				
1,1,2,2-Tetrachloroethane	22.31	1.0	20	0	112	71 - 121				
1,1,2-Trichloroethane	22.39	1.0	20	0	112	80 - 119				
1,1-Dichloroethane	18.12	1.0	20	0	90.6	77 - 125				
1,1-Dichloroethene	18.68	1.0	20	0	93.4	71 - 131				
1,1-Dichloropropene	20.14	1.0	20	0	101	78 - 125				
1,2,3-Trichlorobenzene	25.15	1.0	20	0	126	69 - 129				
1,2,3-Trichloropropane	21.25	1.0	20	0	106	73 - 122				
1,2,4-Trichlorobenzene	22.9	1.0	20	0	114	69 - 130				
1,2,4-Trimethylbenzene	21.94	1.0	20	0	110	76 - 124				
1,2-Dibromo-3-chloropropane	23.89	1.0	20	0	119	62 - 128				
1,2-Dibromoethane	22.67	1.0	20	0	113	77 - 121				
1,2-Dichlorobenzene	22.22	1.0	20	0	111	80 - 119				
1,2-Dichloroethane	21.6	1.0	20	0.8439	104	73 - 128				
1,2-Dichloropropane	21.1	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	21.27	1.0	20	0	106	75 - 124				
1,3-Dichlorobenzene	21.35	1.0	20	0	107	80 - 119				
1,3-Dichloropropane	21.65	1.0	20	0	108	80 - 119				
1,4-Dichlorobenzene	21.15	1.0	20	0	106	79 - 118				
2,2-Dichloropropane	17.85	1.0	20	0	89.2	60 - 139				
2-Butanone	34.32	2.0	40	0	85.8	56 - 143				
2-Chlorotoluene	21.05	1.0	20	0	105	79 - 122				
2-Hexanone	46.56	2.0	40	0	116	57 - 139				
4-Chlorotoluene	21.12	1.0	20	0	106	78 - 122				
4-Isopropyltoluene	22.61	1.0	20	0	113	77 - 127				
4-Methyl-2-pentanone	46.19	2.0	40	0	115	67 - 130				
Acetone	29.57	2.0	40	0	73.9	39 - 160				
Benzene	20.42	1.0	20	0	102	79 - 120				
Bromobenzene	21.45	1.0	20	0	107	80 - 120				
Bromochloromethane	18.06	1.0	20	0	90.3	78 - 123				
Bromodichloromethane	20.5	1.0	20	0	102	79 - 125				
Bromoform	22.68	1.0	20	0	113	66 - 130				
Bromomethane	17.25	1.0	20	0	86.2	53 - 141				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060114-01MS** Units: **UG/L** Analysis Date: **05-Jun-2020 15:49**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608827** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	37.79	2.0	40	0	94.5	64 - 133				
Carbon tetrachloride	20.43	1.0	20	0	102	72 - 136				
Chlorobenzene	21.46	1.0	20	0	107	82 - 118				
Chloroethane	17.3	1.0	20	0	86.5	60 - 138				
Chloroform	18.44	1.0	20	0	92.2	79 - 124				
Chloromethane	14.86	1.0	20	0	74.3	50 - 139				
cis-1,2-Dichloroethene	35.3	1.0	20	16.85	92.2	78 - 123				
cis-1,3-Dichloropropene	20.71	1.0	20	0	104	75 - 124				
Dibromochloromethane	21.33	1.0	20	0	107	74 - 126				
Dibromomethane	20.78	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	11.65	1.0	20	0	58.3	32 - 152				
Ethylbenzene	22.34	1.0	20	0	112	79 - 121				
Hexachlorobutadiene	25.39	1.0	20	0	127	66 - 134				
Isopropylbenzene	22.33	1.0	20	0	112	72 - 131				
m,p-Xylene	44.11	2.0	40	0	110	80 - 121				
Methylene chloride	18.32	2.0	20	0	91.6	74 - 124				
Naphthalene	23.85	1.0	20	0	119	61 - 128				
n-Butylbenzene	23.36	1.0	20	0	117	75 - 128				
n-Propylbenzene	21.92	1.0	20	0	110	76 - 126				
o-Xylene	22.25	1.0	20	0	111	78 - 122				
sec-Butylbenzene	22.11	1.0	20	0	111	77 - 126				
Styrene	21.64	1.0	20	0	108	78 - 123				
tert-Butylbenzene	21.96	1.0	20	0	110	78 - 124				
Tetrachloroethene	23.34	1.0	20	0	117	74 - 129				
Toluene	21.9	1.0	20	0	109	80 - 121				
trans-1,2-Dichloroethene	18.7	1.0	20	0	93.5	75 - 124				
trans-1,3-Dichloropropene	20.64	1.0	20	0	103	73 - 127				
Trichloroethene	24.61	1.0	20	3.195	107	79 - 123				
Trichlorofluoromethane	19.35	1.0	20	0	96.7	65 - 141				
Vinyl chloride	15.55	1.0	20	0	77.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*43.2*	*1.0*	*50*	*0*	*86.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.8*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*44.92*	*1.0*	*50*	*0*	*89.8*	*80 - 119*				
Surr: Toluene-d8	*53.54*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060114-01MSD** Units: **UG/L** Analysis Date: **05-Jun-2020 16:13**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608828** 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	22.36	5.53	20	
1,1,1-Trichloroethane	19.4	1.0	20	0	97.0	74 - 131	19.16	1.22	20	
1,1,2,2-Tetrachloroethane	21	1.0	20	0	105	71 - 121	22.31	6.03	20	
1,1,2-Trichloroethane	21.12	1.0	20	0	106	80 - 119	22.39	5.86	20	
1,1-Dichloroethane	18.26	1.0	20	0	91.3	77 - 125	18.12	0.78	20	
1,1-Dichloroethene	18.19	1.0	20	0	90.9	71 - 131	18.68	2.66	20	
1,1-Dichloropropene	20.93	1.0	20	0	105	78 - 125	20.14	3.86	20	
1,2,3-Trichlorobenzene	31.03	1.0	20	0	155	69 - 129	25.15	20.9	20	SR
1,2,3-Trichloropropane	21.01	1.0	20	0	105	73 - 122	21.25	1.14	20	
1,2,4-Trichlorobenzene	28.59	1.0	20	0	143	69 - 130	22.9	22.1	20	SR
1,2,4-Trimethylbenzene	21.79	1.0	20	0	109	76 - 124	21.94	0.685	20	
1,2-Dibromo-3-chloropropane	24.2	1.0	20	0	121	62 - 128	23.89	1.29	20	
1,2-Dibromoethane	21.16	1.0	20	0	106	77 - 121	22.67	6.92	20	
1,2-Dichlorobenzene	21.69	1.0	20	0	108	80 - 119	22.22	2.43	20	
1,2-Dichloroethane	20.79	1.0	20	0.8439	99.7	73 - 128	21.6	3.85	20	
1,2-Dichloropropane	20.86	1.0	20	0	104	78 - 122	21.1	1.14	20	
1,3,5-Trimethylbenzene	21.42	1.0	20	0	107	75 - 124	21.27	0.699	20	
1,3-Dichlorobenzene	20.95	1.0	20	0	105	80 - 119	21.35	1.91	20	
1,3-Dichloropropane	20.89	1.0	20	0	104	80 - 119	21.65	3.57	20	
1,4-Dichlorobenzene	20.87	1.0	20	0	104	79 - 118	21.15	1.32	20	
2,2-Dichloropropane	18.43	1.0	20	0	92.2	60 - 139	17.85	3.21	20	
2-Butanone	34.46	2.0	40	0	86.2	56 - 143	34.32	0.398	20	
2-Chlorotoluene	20.4	1.0	20	0	102	79 - 122	21.05	3.15	20	
2-Hexanone	45.58	2.0	40	0	114	57 - 139	46.56	2.14	20	
4-Chlorotoluene	20.45	1.0	20	0	102	78 - 122	21.12	3.22	20	
4-Isopropyltoluene	22.61	1.0	20	0	113	77 - 127	22.61	0.0187	20	
4-Methyl-2-pentanone	44.84	2.0	40	0	112	67 - 130	46.19	2.96	20	
Acetone	29.83	2.0	40	0	74.6	39 - 160	29.57	0.879	20	
Benzene	20.52	1.0	20	0	103	79 - 120	20.42	0.477	20	
Bromobenzene	20.51	1.0	20	0	103	80 - 120	21.45	4.48	20	
Bromochloromethane	18.17	1.0	20	0	90.9	78 - 123	18.06	0.635	20	
Bromodichloromethane	20.3	1.0	20	0	102	79 - 125	20.5	0.974	20	
Bromoform	22.17	1.0	20	0	111	66 - 130	22.68	2.27	20	
Bromomethane	16.3	1.0	20	0	81.5	53 - 141	17.25	5.67	20	

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060114-01MSD** Units: **UG/L** Analysis Date: **05-Jun-2020 16:13**
Client ID: Run ID: **VOA6_362756** SeqNo: **5608828** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	38.27	2.0	40	0	95.7	64 - 133	37.79	1.26	20	
Carbon tetrachloride	20.53	1.0	20	0	103	72 - 136	20.43	0.448	20	
Chlorobenzene	20.72	1.0	20	0	104	82 - 118	21.46	3.48	20	
Chloroethane	17.46	1.0	20	0	87.3	60 - 138	17.3	0.962	20	
Chloroform	18.24	1.0	20	0	91.2	79 - 124	18.44	1.07	20	
Chloromethane	14.6	1.0	20	0	73.0	50 - 139	14.86	1.73	20	
cis-1,2-Dichloroethene	35.35	1.0	20	16.85	92.5	78 - 123	35.3	0.159	20	
cis-1,3-Dichloropropene	20.14	1.0	20	0	101	75 - 124	20.71	2.77	20	
Dibromochloromethane	20.79	1.0	20	0	104	74 - 126	21.33	2.57	20	
Dibromomethane	20.32	1.0	20	0	102	79 - 123	20.78	2.25	20	
Dichlorodifluoromethane	11.87	1.0	20	0	59.4	32 - 152	11.65	1.86	20	
Ethylbenzene	21.93	1.0	20	0	110	79 - 121	22.34	1.86	20	
Hexachlorobutadiene	28.39	1.0	20	0	142	66 - 134	25.39	11.1	20	S
Isopropylbenzene	22	1.0	20	0	110	72 - 131	22.33	1.51	20	
m,p-Xylene	42.89	2.0	40	0	107	80 - 121	44.11	2.81	20	
Methylene chloride	18.66	2.0	20	0	93.3	74 - 124	18.32	1.86	20	
Naphthalene	28.88	1.0	20	0	144	61 - 128	23.85	19.1	20	S
n-Butylbenzene	23.75	1.0	20	0	119	75 - 128	23.36	1.66	20	
n-Propylbenzene	21.72	1.0	20	0	109	76 - 126	21.92	0.936	20	
o-Xylene	21.27	1.0	20	0	106	78 - 122	22.25	4.5	20	
sec-Butylbenzene	22.41	1.0	20	0	112	77 - 126	22.11	1.36	20	
Styrene	21.09	1.0	20	0	105	78 - 123	21.64	2.55	20	
tert-Butylbenzene	21.91	1.0	20	0	110	78 - 124	21.96	0.209	20	
Tetrachloroethene	22.72	1.0	20	0	114	74 - 129	23.34	2.68	20	
Toluene	21.21	1.0	20	0	106	80 - 121	21.9	3.16	20	
trans-1,2-Dichloroethene	19.43	1.0	20	0	97.2	75 - 124	18.7	3.87	20	
trans-1,3-Dichloropropene	20.83	1.0	20	0	104	73 - 127	20.64	0.941	20	
Trichloroethene	23.99	1.0	20	3.195	104	79 - 123	24.61	2.55	20	
Trichlorofluoromethane	19.41	1.0	20	0	97.1	65 - 141	19.35	0.331	20	
Vinyl chloride	15.67	1.0	20	0	78.3	58 - 137	15.55	0.764	20	
Surr: 1,2-Dichloroethane-d4	*42.55*	*1.0*	*50*	*0*	*85.1*	*81 - 118*	*43.2*	*1.51*	*20*	
Surr: 4-Bromofluorobenzene	*50.44*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.8*	*0.718*	*20*	
Surr: Dibromofluoromethane	*45*	*1.0*	*50*	*0*	*90.0*	*80 - 119*	*44.92*	*0.181*	*20*	
Surr: Toluene-d8	*51.99*	*1.0*	*50*	*0*	*104*	*89 - 112*	*53.54*	*2.92*	*20*	

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362756 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:				
	HS20060135-01	HS20060135-02	HS20060135-03	HS20060135-04
	HS20060135-05	HS20060135-07		

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 13:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609445** 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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 13:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609445** 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	*42.34*	*1.0*	*50*	*0*	*84.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.03*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*43.54*	*1.0*	*50*	*0*	*87.1*	*80 - 119*				
Surr: Toluene-d8	*53.96*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 12:43**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609444** 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	21.06	1.0	20	0	105	78 - 124				
1,1,1-Trichloroethane	20.13	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	20.91	1.0	20	0	105	71 - 121				
1,1,2-Trichloroethane	21.52	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	20.59	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	19.37	1.0	20	0	96.9	71 - 131				
1,1-Dichloropropene	19.17	1.0	20	0	95.8	78 - 125				
1,2,3-Trichlorobenzene	27.16	1.0	20	0	136	69 - 129				S
1,2,3-Trichloropropane	20.83	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	25.4	1.0	20	0	127	69 - 130				
1,2,4-Trimethylbenzene	19.2	1.0	20	0	96.0	76 - 124				
1,2-Dibromo-3-chloropropane	26.65	1.0	20	0	133	62 - 128				S
1,2-Dibromoethane	21.61	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	20.39	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	21.15	1.0	20	0	106	73 - 128				
1,2-Dichloropropane	21.22	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	18.61	1.0	20	0	93.0	75 - 124				
1,3-Dichlorobenzene	19.47	1.0	20	0	97.4	80 - 119				
1,3-Dichloropropane	20.93	1.0	20	0	105	80 - 119				
1,4-Dichlorobenzene	18.86	1.0	20	0	94.3	79 - 118				
2,2-Dichloropropane	20.21	1.0	20	0	101	60 - 139				
2-Butanone	43.17	2.0	40	0	108	56 - 143				
2-Chlorotoluene	17.99	1.0	20	0	89.9	79 - 122				
2-Hexanone	47.25	2.0	40	0	118	57 - 139				
4-Chlorotoluene	18.23	1.0	20	0	91.1	78 - 122				
4-Isopropyltoluene	18.63	1.0	20	0	93.2	77 - 127				
4-Methyl-2-pentanone	45.11	2.0	40	0	113	67 - 130				
Acetone	46.39	2.0	40	0	116	39 - 160				
Benzene	20.46	1.0	20	0	102	79 - 120				
Bromobenzene	19.73	1.0	20	0	98.6	80 - 120				
Bromochloromethane	20.83	1.0	20	0	104	78 - 123				
Bromodichloromethane	21.34	1.0	20	0	107	79 - 125				
Bromoform	22.89	1.0	20	0	114	66 - 130				
Bromomethane	22.06	1.0	20	0	110	53 - 141				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 12:43**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609444** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.85	2.0	40	0	99.6	64 - 133				
Carbon tetrachloride	18.88	1.0	20	0	94.4	72 - 136				
Chlorobenzene	19.86	1.0	20	0	99.3	82 - 118				
Chloroethane	19.52	1.0	20	0	97.6	60 - 138				
Chloroform	20.73	1.0	20	0	104	79 - 124				
Chloromethane	19.72	1.0	20	0	98.6	50 - 139				
cis-1,2-Dichloroethene	21.06	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	21.53	1.0	20	0	108	75 - 124				
Dibromochloromethane	20.97	1.0	20	0	105	74 - 126				
Dibromomethane	21.74	1.0	20	0	109	79 - 123				
Dichlorodifluoromethane	19.78	1.0	20	0	98.9	32 - 152				
Ethylbenzene	19.45	1.0	20	0	97.2	79 - 121				
Hexachlorobutadiene	26.33	1.0	20	0	132	66 - 134				
Isopropylbenzene	19.18	1.0	20	0	95.9	72 - 131				
m,p-Xylene	39.44	2.0	40	0	98.6	80 - 121				
Methylene chloride	22.56	2.0	20	0	113	74 - 124				
Naphthalene	24.96	1.0	20	0	125	61 - 128				
n-Butylbenzene	18.88	1.0	20	0	94.4	75 - 128				
n-Propylbenzene	18.3	1.0	20	0	91.5	76 - 126				
o-Xylene	19.84	1.0	20	0	99.2	78 - 122				
sec-Butylbenzene	17.91	1.0	20	0	89.5	77 - 126				
Styrene	20.41	1.0	20	0	102	78 - 123				
tert-Butylbenzene	18.09	1.0	20	0	90.5	78 - 124				
Tetrachloroethene	19.69	1.0	20	0	98.4	74 - 129				
Toluene	19.84	1.0	20	0	99.2	80 - 121				
trans-1,2-Dichloroethene	20.61	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	22.11	1.0	20	0	111	73 - 127				
Trichloroethene	20.49	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	19.93	1.0	20	0	99.6	65 - 141				
Vinyl chloride	18.12	1.0	20	0	90.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.17*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.12*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*52.59*	*1.0*	*50*	*0*	*105*	*80 - 119*				
Surr: Toluene-d8	*46.61*	*1.0*	*50*	*0*	*93.2*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060202-01MS** Units: **UG/L** Analysis Date: **07-Jun-2020 15:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609450** 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	21.29	1.0	20	0	106	78 - 124				
1,1,1-Trichloroethane	18.27	1.0	20	0	91.4	74 - 131				
1,1,2,2-Tetrachloroethane	21.58	1.0	20	0	108	71 - 121				
1,1,2-Trichloroethane	21.58	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	17.27	1.0	20	0	86.4	77 - 125				
1,1-Dichloroethene	17.93	1.0	20	0	89.7	71 - 131				
1,1-Dichloropropene	19.53	1.0	20	0	97.7	78 - 125				
1,2,3-Trichlorobenzene	27.88	1.0	20	0	139	69 - 129				S
1,2,3-Trichloropropane	21.09	1.0	20	0	105	73 - 122				
1,2,4-Trichlorobenzene	26.24	1.0	20	0	131	69 - 130				S
1,2,4-Trimethylbenzene	21.3	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	25.58	1.0	20	0	128	62 - 128				
1,2-Dibromoethane	21.6	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	22.29	1.0	20	0	111	80 - 119				
1,2-Dichloroethane	19.79	1.0	20	0	98.9	73 - 128				
1,2-Dichloropropane	20.18	1.0	20	0	101	78 - 122				
1,3,5-Trimethylbenzene	20.76	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.78	1.0	20	0	104	80 - 119				
1,3-Dichloropropane	20.87	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.77	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	17.19	1.0	20	0	86.0	60 - 139				
2-Butanone	34.12	2.0	40	0	85.3	56 - 143				
2-Chlorotoluene	20.22	1.0	20	0	101	79 - 122				
2-Hexanone	47.59	2.0	40	0	119	57 - 139				
4-Chlorotoluene	19.97	1.0	20	0	99.8	78 - 122				
4-Isopropyltoluene	21.69	1.0	20	0	108	77 - 127				
4-Methyl-2-pentanone	46.03	2.0	40	0	115	67 - 130				
Acetone	30.09	2.0	40	0	75.2	39 - 160				
Benzene	19.35	1.0	20	0	96.7	79 - 120				
Bromobenzene	20.97	1.0	20	0	105	80 - 120				
Bromochloromethane	17.4	1.0	20	0	87.0	78 - 123				
Bromodichloromethane	19.36	1.0	20	0	96.8	79 - 125				
Bromoform	22.48	1.0	20	0	112	66 - 130				
Bromomethane	15.86	1.0	20	0	79.3	53 - 141				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060202-01MS** Units: **UG/L** Analysis Date: **07-Jun-2020 15:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609450** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	35.76	2.0	40	0	89.4	64 - 133				
Carbon tetrachloride	19.7	1.0	20	0	98.5	72 - 136				
Chlorobenzene	20.69	1.0	20	0	103	82 - 118				
Chloroethane	16.35	1.0	20	0	81.7	60 - 138				
Chloroform	17.58	1.0	20	0	87.9	79 - 124				
Chloromethane	13.44	1.0	20	0	67.2	50 - 139				
cis-1,2-Dichloroethene	17.89	1.0	20	0	89.5	78 - 123				
cis-1,3-Dichloropropene	19.77	1.0	20	0	98.8	75 - 124				
Dibromochloromethane	21.12	1.0	20	0	106	74 - 126				
Dibromomethane	19.73	1.0	20	0	98.7	79 - 123				
Dichlorodifluoromethane	10.16	1.0	20	0	50.8	32 - 152				
Ethylbenzene	21.38	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	28.02	1.0	20	0	140	66 - 134				S
Isopropylbenzene	21.34	1.0	20	0	107	72 - 131				
m,p-Xylene	42.58	2.0	40	0	106	80 - 121				
Methylene chloride	17.6	2.0	20	0	88.0	74 - 124				
Naphthalene	26.8	1.0	20	0	134	61 - 128				S
n-Butylbenzene	22.03	1.0	20	0	110	75 - 128				
n-Propylbenzene	20.81	1.0	20	0	104	76 - 126				
o-Xylene	21.36	1.0	20	0	107	78 - 122				
sec-Butylbenzene	21.07	1.0	20	0	105	77 - 126				
Styrene	21.23	1.0	20	0	106	78 - 123				
tert-Butylbenzene	20.87	1.0	20	0	104	78 - 124				
Tetrachloroethene	22.06	1.0	20	0	110	74 - 129				
Toluene	20.94	1.0	20	0	105	80 - 121				
trans-1,2-Dichloroethene	17.8	1.0	20	0	89.0	75 - 124				
trans-1,3-Dichloropropene	19.79	1.0	20	0	99.0	73 - 127				
Trichloroethene	20.71	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	17.39	1.0	20	0	86.9	65 - 141				
Vinyl chloride	14.37	1.0	20	0	71.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44*	*1.0*	*50*	*0*	*88.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.09*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*44.73*	*1.0*	*50*	*0*	*89.5*	*80 - 119*				
Surr: Toluene-d8	*53.41*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060202-01MSD** Units: **UG/L** Analysis Date: **07-Jun-2020 15:55**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609451** 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	20.1	1.0	20	0	101	78 - 124	21.29	5.75	20	
1,1,1-Trichloroethane	18.37	1.0	20	0	91.9	74 - 131	18.27	0.562	20	
1,1,2,2-Tetrachloroethane	19.43	1.0	20	0	97.1	71 - 121	21.58	10.5	20	
1,1,2-Trichloroethane	19.82	1.0	20	0	99.1	80 - 119	21.58	8.54	20	
1,1-Dichloroethane	16.79	1.0	20	0	84.0	77 - 125	17.27	2.84	20	
1,1-Dichloroethene	17.44	1.0	20	0	87.2	71 - 131	17.93	2.76	20	
1,1-Dichloropropene	19.36	1.0	20	0	96.8	78 - 125	19.53	0.872	20	
1,2,3-Trichlorobenzene	33.72	1.0	20	0	169	69 - 129	27.88	18.9	20	S
1,2,3-Trichloropropane	18.95	1.0	20	0	94.7	73 - 122	21.09	10.7	20	
1,2,4-Trichlorobenzene	29.46	1.0	20	0	147	69 - 130	26.24	11.6	20	S
1,2,4-Trimethylbenzene	18.69	1.0	20	0	93.5	76 - 124	21.3	13	20	
1,2-Dibromo-3-chloropropane	25.98	1.0	20	0	130	62 - 128	25.58	1.53	20	S
1,2-Dibromoethane	20.68	1.0	20	0	103	77 - 121	21.6	4.36	20	
1,2-Dichlorobenzene	19.64	1.0	20	0	98.2	80 - 119	22.29	12.6	20	
1,2-Dichloroethane	18.62	1.0	20	0	93.1	73 - 128	19.79	6.09	20	
1,2-Dichloropropane	19.48	1.0	20	0	97.4	78 - 122	20.18	3.51	20	
1,3,5-Trimethylbenzene	18.37	1.0	20	0	91.9	75 - 124	20.76	12.2	20	
1,3-Dichlorobenzene	18.63	1.0	20	0	93.1	80 - 119	20.78	10.9	20	
1,3-Dichloropropane	19.72	1.0	20	0	98.6	80 - 119	20.87	5.64	20	
1,4-Dichlorobenzene	17.95	1.0	20	0	89.7	79 - 118	20.77	14.6	20	
2,2-Dichloropropane	16.61	1.0	20	0	83.0	60 - 139	17.19	3.47	20	
2-Butanone	34.68	2.0	40	0	86.7	56 - 143	34.12	1.65	20	
2-Chlorotoluene	17.65	1.0	20	0	88.3	79 - 122	20.22	13.6	20	
2-Hexanone	45.45	2.0	40	0	114	57 - 139	47.59	4.6	20	
4-Chlorotoluene	17.55	1.0	20	0	87.7	78 - 122	19.97	12.9	20	
4-Isopropyltoluene	19.61	1.0	20	0	98.1	77 - 127	21.69	10.1	20	
4-Methyl-2-pentanone	44.39	2.0	40	0	111	67 - 130	46.03	3.63	20	
Acetone	29.7	2.0	40	0	74.2	39 - 160	30.09	1.32	20	
Benzene	18.88	1.0	20	0	94.4	79 - 120	19.35	2.43	20	
Bromobenzene	17.78	1.0	20	0	88.9	80 - 120	20.97	16.5	20	
Bromochloromethane	16.81	1.0	20	0	84.0	78 - 123	17.4	3.47	20	
Bromodichloromethane	19.04	1.0	20	0	95.2	79 - 125	19.36	1.65	20	
Bromoform	21.25	1.0	20	0	106	66 - 130	22.48	5.61	20	
Bromomethane	15.4	1.0	20	0	77.0	53 - 141	15.86	2.96	20	

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060135

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060202-01MSD** Units: **UG/L** Analysis Date: **07-Jun-2020 15:55**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609451** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	35.06	2.0	40	0	87.7	64 - 133	35.76	1.96	20	
Carbon tetrachloride	19.37	1.0	20	0	96.9	72 - 136	19.7	1.68	20	
Chlorobenzene	19.29	1.0	20	0	96.5	82 - 118	20.69	7.01	20	
Chloroethane	15.7	1.0	20	0	78.5	60 - 138	16.35	4.08	20	
Chloroform	16.96	1.0	20	0	84.8	79 - 124	17.58	3.63	20	
Chloromethane	13.16	1.0	20	0	65.8	50 - 139	13.44	2.05	20	
cis-1,2-Dichloroethene	17.45	1.0	20	0	87.2	78 - 123	17.89	2.53	20	
cis-1,3-Dichloropropene	19.12	1.0	20	0	95.6	75 - 124	19.77	3.33	20	
Dibromochloromethane	19.44	1.0	20	0	97.2	74 - 126	21.12	8.26	20	
Dibromomethane	19.08	1.0	20	0	95.4	79 - 123	19.73	3.33	20	
Dichlorodifluoromethane	10.09	1.0	20	0	50.4	32 - 152	10.16	0.684	20	
Ethylbenzene	19.88	1.0	20	0	99.4	79 - 121	21.38	7.26	20	
Hexachlorobutadiene	28.29	1.0	20	0	141	66 - 134	28.02	0.943	20	S
Isopropylbenzene	20.16	1.0	20	0	101	72 - 131	21.34	5.67	20	
m,p-Xylene	39.54	2.0	40	0	98.9	80 - 121	42.58	7.39	20	
Methylene chloride	16.82	2.0	20	0	84.1	74 - 124	17.6	4.53	20	
Naphthalene	32.67	1.0	20	0	163	61 - 128	26.8	19.8	20	S
n-Butylbenzene	20.03	1.0	20	0	100	75 - 128	22.03	9.49	20	
n-Propylbenzene	18.52	1.0	20	0	92.6	76 - 126	20.81	11.6	20	
o-Xylene	19.9	1.0	20	0	99.5	78 - 122	21.36	7.08	20	
sec-Butylbenzene	19.3	1.0	20	0	96.5	77 - 126	21.07	8.76	20	
Styrene	19.94	1.0	20	0	99.7	78 - 123	21.23	6.26	20	
tert-Butylbenzene	18.73	1.0	20	0	93.6	78 - 124	20.87	10.8	20	
Tetrachloroethene	21.6	1.0	20	0	108	74 - 129	22.06	2.1	20	
Toluene	19.75	1.0	20	0	98.7	80 - 121	20.94	5.85	20	
trans-1,2-Dichloroethene	17.3	1.0	20	0	86.5	75 - 124	17.8	2.82	20	
trans-1,3-Dichloropropene	18.87	1.0	20	0	94.4	73 - 127	19.79	4.76	20	
Trichloroethene	20.14	1.0	20	0	101	79 - 123	20.71	2.8	20	
Trichlorofluoromethane	17.71	1.0	20	0	88.6	65 - 141	17.39	1.87	20	
Vinyl chloride	14.09	1.0	20	0	70.5	58 - 137	14.37	1.97	20	
Surr: 1,2-Dichloroethane-d4	*43.6*	*1.0*	*50*	*0*	*87.2*	*81 - 118*	*44*	*0.923*	*20*	
Surr: 4-Bromofluorobenzene	*51.62*	*1.0*	*50*	*0*	*103*	*85 - 114*	*50.09*	*3.01*	*20*	
Surr: Dibromofluoromethane	*44.74*	*1.0*	*50*	*0*	*89.5*	*80 - 119*	*44.73*	*0.0254*	*20*	
Surr: Toluene-d8	*51.62*	*1.0*	*50*	*0*	*103*	*89 - 112*	*53.41*	*3.41*	*20*	

ALS Houston, US Date: 18-Jun-20

Client:	Bhate Environmental Associates, Inc.
Project:	LHAAP 18 24
WorkOrder:	HS20060135

QC BATCH REPORT

Batch ID:	**R362787 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20060135-06 HS20060135-09

ALS Houston, US Date: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060135**

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
Illinois	2000322020-4	09-May-2021
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: 18-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060135

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060135-01	18CPTMW12SW_060220	Login	6/3/2020 3:54:21 PM	PMG	MET040
HS20060135-01	18CPTMW12SW_060220	Login	6/3/2020 3:54:21 PM	PMG	Sub
HS20060135-01	18CPTMW12SW_060220	Login	6/3/2020 3:54:21 PM	PMG	EXT137
HS20060135-01	18CPTMW12SW_060220	Login	6/3/2020 3:54:21 PM	PMG	VOA065

ALS Houston, US Date: 18-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060135 **Date/Time Received:** 03-Jun-2020 09:05

Client Name: Bhate Environmental **Received by:** Paresh M. Giga

Completed By: /S/ Paresh M. Giga (eSignature) 03-Jun-2020 15:47 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 04-Jun-2020 11:03 (Date/Time)

Matrices: GW/Water Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:None
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	2.8C U/C	IR25	
Cooler(s)/Kit(s):	44997		
Date/Time sample(s) sent to storage:	6/3/2020 16:30		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

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

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) / Quality Assurance Samples (6)

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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
18CPTMW12SW_060220	02JUN2020	0735	-	N		WG	6	X	X	X	X				
18CPTMW12DW_060220	02JUN2020	0825	-	N		WG	6	X	X	X	X				
MW7_060220	02JUN2020	0915	-	N		WG	5	X	X		X				
MW9_060220	02JUN2020	1005		N		WG	6	X	X	X	X				
18CPTMW23SW_060220	02JUN2020	1100		N		WG	5	X	X		X				
18CPTMW23_060220	02JUN2020	1150	-	N		WG	5	X	X		X				
18WW24_060220	02JUN2020	1245	-	N		WG	5	X	X	X					
18WW14_060220	02JUN2020	1340	-	N		WG	2		X	X					
TRIP BLANK	02JUN2020		-	N		W	2	X							
			-												
			-												

HS20060135
Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS:

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/2/20	1430	1. [signature]	6/3/2020	09:05
2.			2.		
3.			3.		

Cooler # 44997 Temp 2.8 ZR # 25 CF 0 0

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

Method of Shipment: _____

Fed _____ Ex _____ Airbill Number:

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

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

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)
4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks
5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.
6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/30/99 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

44997

CUSTODY SEAL
Date: 6/2/20 Time: 1430
Name: SCOTT BEESINGER
Company: BHATE

Seal Broken By: SM
Date: 06/03/20

44997



June 18, 2020 Service Request No:E2000493

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

Laboratory Results for: HS20060135

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 04, 2020
For your reference, these analyses have been assigned our service request number **E2000493.**

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.:**	E2000493
Project:	HS20060135	**Date Received:**	06/04/20
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

Eight samples were received for analysis at ALS Environmental in Houston on 06/04/20.

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:

EQ2000228: 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.

Client: ALS Environmental - US **Service Request:**E2000493

Project: HS20060135

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000493-001	18CPTMW12SW_060220	6/2/2020	0735
E2000493-002	18CPTWM12DW_060220	6/2/2020	0825
E2000493-003	MW7_060220	6/2/2020	0915
E2000493-004	MW9_060220	6/2/2020	1005
E2000493-005	18CPTMW23SW_060220	6/2/2020	1100
E2000493-006	18CPTMW23_060220	6/2/2020	1150
E2000493-007	18WW24_060220	6/2/2020	1245
E2000493-008	18WW14_060220	6/2/2020	1340

Service Request Summary

Folder #: **E2000493**
Client Name: ALS Environmental - US
Project Name: HS20060135
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: 06/04/20
Internal Due Date: 6/17/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060135
EDD: No EDD Specified

8 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000493-001	18CPTMW12SW_060220	Ground Water	06/02/20 0735	**IV**
E2000493-002	18CPTWM12DW_060220	Ground Water	06/02/20 0825	**IV**
E2000493-003	MW7_060220	Ground Water	06/02/20 0915	**IV**
E2000493-004	MW9_060220	Ground Water	06/02/20 1005	**IV**
E2000493-005	18CPTMW23SW_060220	Ground Water	06/02/20 1100	**IV**
E2000493-006	18CPTMW23_060220	Ground Water	06/02/20 1150	**IV**
E2000493-007	18WW24_060220	Ground Water	06/02/20 1245	**IV**
E2000493-008	18WW14_060220	Ground Water	06/02/20 1340	**IV**

Service Request Summary

Folder #: **E2000493**
Client Name: ALS Environmental - US
Project Name: HS20060135
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: 06/04/20
Internal Due Date: 6/17/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060135
EDD: No EDD Specified

8 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	8	Level IV due 6/24,level II 6/17

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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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
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Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14027**

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:	HS20060135
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060135-01**	**18CPTMW12SW_060220**	**Groundwater**	**02 Jun 2020 07:35**
	SUB_Perch-6850			17 Jun 2020
2.	**HS20060135-02**	**18CPTMW12DW_060220**	**Groundwater**	**02 Jun 2020 08:25**
	SUB_Perch-6850			17 Jun 2020
3.	**HS20060135-03**	**MW7_060220**	**Groundwater**	**02 Jun 2020 09:15**
	SUB_Perch-6850			17 Jun 2020
4.	**HS20060135-04**	**MW9_060220**	**Groundwater**	**02 Jun 2020 10:05**
	SUB_Perch-6850			17 Jun 2020
5.	**HS20060135-05**	**18CPTMW23SW_060220**	**Groundwater**	**02 Jun 2020 11:00**
	SUB_Perch-6850			17 Jun 2020
6.	**HS20060135-06**	**18CPTMW23_060220**	**Groundwater**	**02 Jun 2020 11:50**
	SUB_Perch-6850			17 Jun 2020
7.	**HS20060135-07**	**18WW24_060220**	**Groundwater**	**02 Jun 2020 12:45**
	SUB_Perch-6850			17 Jun 2020
8.	**HS20060135-08**	**18WW14_060220**	**Groundwater**	**02 Jun 2020 13:40**
	SUB_Perch-6850			17 Jun 2020

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14027**

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: _____

Received By: _____ Date/Time: 6/4/20 1945

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

ALS Environmental

Cooler Receipt Form

Project Chemist: CG

Client/Project: ALS-H

Thermometer ID: IR11

Date/Time Received: 6/14/16 Initials: CG

Date/Time Logged in: 6/14/16 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?
-		6/14/16	1540	CG	1.1	☒
						☐
						☐
						☐

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:

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

Preparation Information Benchsheet

Prep Run#: 359781 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/9/20 09:50

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000493-001	18CPTMW12SW_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000493-002	18CPTWM12DW_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000493-003	MW7_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000493-004	MW9_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000493-005	18CPTMW23SW_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000493-006	18CPTMW23_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000493-007	18WW24_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000493-008	18WW14_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000494-001	102_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000494-002	129_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000494-003	120_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000494-004	MW14_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000495-001	LH18/24-SP650_060220_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000496-001	LH18/24-SP140_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000497-001	LH18/24-SP650_060220_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
16	EQ2000228-01	MB		6850/ClO4 DOD			Liquid	10mL	
17	EQ2000228-02	LCS		6850/ClO4 DOD			Liquid	10mL	
18	EQ2000228-03	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

EQ2000228-02 100.00µL EQ2000228-03 100.00µL

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

E2000493-001	1.00µL	E2000493-002	1.00µL	E2000493-003	1.00µL	E2000493-004	1.00µL	E2000493-005	1.00µL	E2000493-006	1.00µL
E2000493-007	1.00µL	E2000493-008	1.00µL	E2000494-001	1.00µL	E2000494-002	1.00µL	E2000494-003	1.00µL	E2000494-004	1.00µL
E2000495-001	1.00µL	E2000496-001	1.00µL	E2000497-001	1.00µL	EQ2000228-01	1.00µL	EQ2000228-02	1.00µL	EQ2000228-03	1.00µL

Preparation Steps

Step: Preparation
Started: 6/9/20 09:50
Finished: 6/9/20 13:43
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 359781
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/9/20 09:50

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 0735
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW12SW_060220	**Units:**	µg/L
Lab Code:	E2000493-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.464**		0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 14:55	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 0825
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTWM12DW_060220	**Units:**	µg/L
Lab Code:	E2000493-002	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.795**		0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 15:02	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 0915
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	MW7_060220	**Units:**	µg/L
Lab Code:	E2000493-003	**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	**20300**		50.0	25.0	12.5	500	6/ 9/20	6/17/20 10:40	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 1005
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	MW9_060220	**Units:**	µg/L
Lab Code:	E2000493-004	**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	**584**		2.00	1.00	0.500	20	6/ 9/20	6/17/20 10:47	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 1100
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW23SW_060220	**Units:**	µg/L
Lab Code:	E2000493-005	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 15:46	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 1150
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW23_060220	**Units:**	µg/L
Lab Code:	E2000493-006	**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	**732**		2.00	1.00	0.500	20	6/ 9/20	6/17/20 10:55	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 1245
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW24_060220	**Units:**	µg/L
Lab Code:	E2000493-007	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 16:10	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	6/ 2/20 1340
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW14_060220	**Units:**	µg/L
Lab Code:	E2000493-008	**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	**2.79**		0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 16:18	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000228-01	**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	6/ 9/20	6/16/20 14:31	359781	683950	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20
Sample Matrix:	Ground Water		

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	359781

	Lab Control Sample EQ2000228-02			Duplicate Lab Control Sample EQ2000228-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.114	0.100	114	0.114	0.100	114	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:**	E2000493
Project:	HS20060135	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000228-02	**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	**0.114**		0.100			1	6/ 9/20	6/16/20 14:39	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000228-03	**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	**0.114**		0.100			1	6/ 9/20	6/16/20 14:47	359781	683950	

Initial Calibration

ALS Environmental - Houston HRMS
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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

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

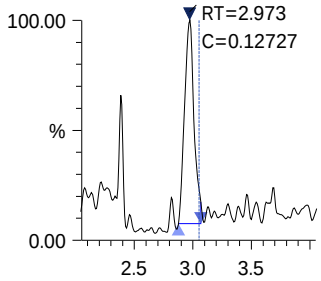
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	6/2/2020 3:37:49 PM	2231	0.12727	20200602_009	2.973	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE1	6/2/2020 3:37:49 PM	137060	1.00000	20200602_009	2.954	25.0000	1.0000	4

Perchlorate

Conc 0.12727

Area 2231

Q 99.00>83.00 (-) 4.13e2

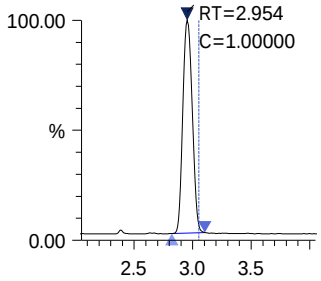


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 137060

ISTD 107.00>89.00 (-) 2.48e4



ALS Group Houston

PERCHLORATE2

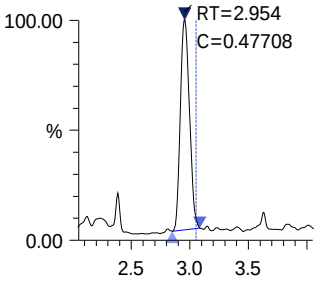
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

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

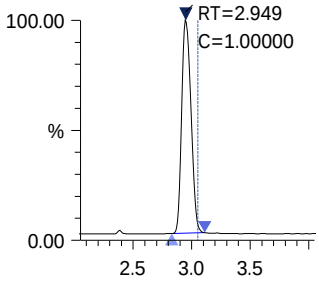
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



ALS Group Houston

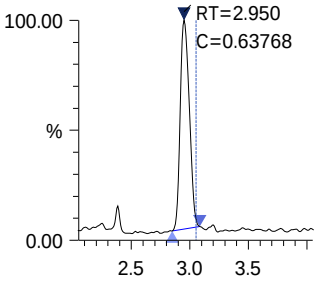
PERCHLORATE3

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

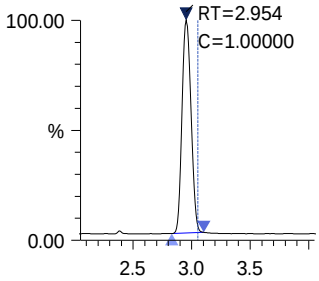
Perchlorate

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

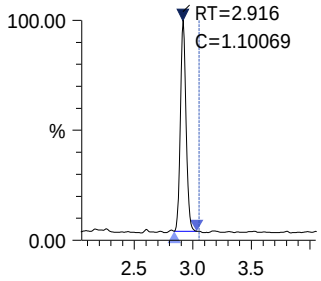
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	6/2/2020 4:05:28 PM	18119	1.10069	20200602_012	2.916	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE4	6/2/2020 4:05:28 PM	128706	1.00000	20200602_012	2.914	25.0000	1.0000	7

Perchlorate

Conc 1.10069

Area 18119

Q 99.00>83.00 (-) 5.42e3

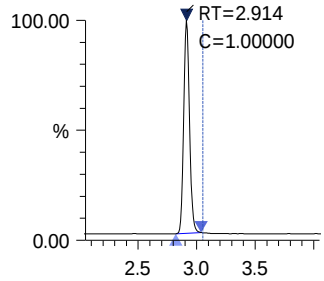


Sodium Perchlorate-18O4_IS

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

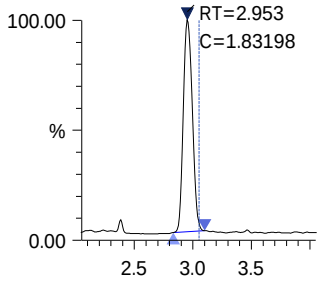
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/2/2020 4:13:21 PM	33971	1.83198	20200602_013	2.953	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/2/2020 4:13:21 PM	144982	1.00000	20200602_013	2.953	25.0000	1.0000	8

Perchlorate

Conc 1.83198

Area 33971

Q 99.00>83.00 (-) 6.29e3

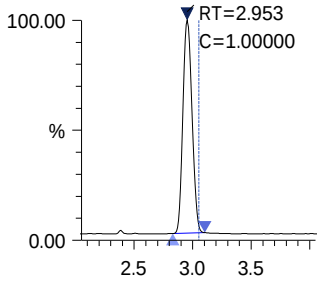


Sodium Perchlorate-18O4_IS

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

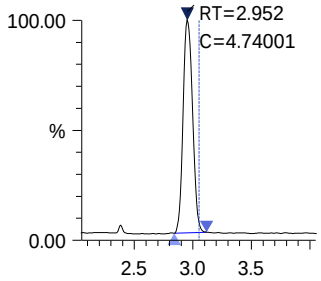
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	6/2/2020 4:21:16 PM	85178	4.74001	20200602_014	2.952	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE6	6/2/2020 4:21:16 PM	140500	1.00000	20200602_014	2.948	25.0000	1.0000	9

Perchlorate

Conc 4.74001

Area 85178

Q 99.00>83.00 (-) 1.50e4

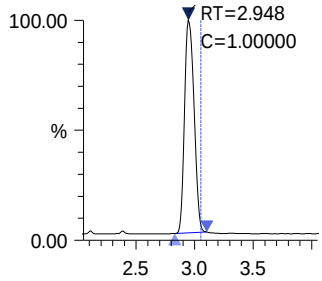


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 140500

ISTD 107.00>89.00 (-) 2.51e4



ALS Group Houston

PERCHLORATE7

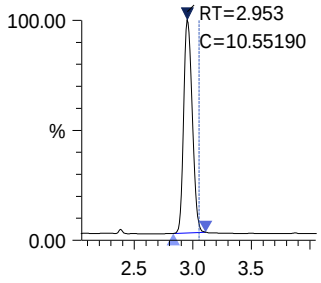
Date acquired: 6/2/2020 4:29:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_015.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

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

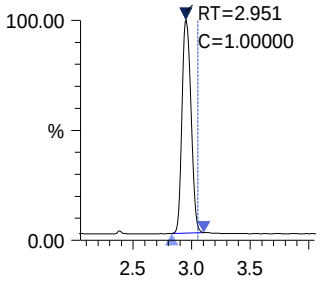
Q 99.00>83.00 (-) 3.36e4



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

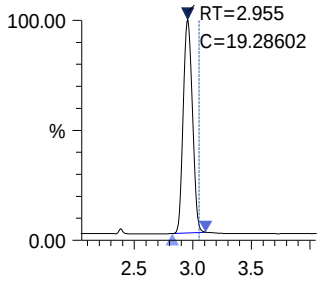
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	6/2/2020 4:37:02 PM	324944	19.28602	20200602_016	2.955	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	6/2/2020 4:37:02 PM	131734	1.00000	20200602_016	2.953	25.0000	1.0000	11

Perchlorate

Conc 19.28602

Area 324944

Q 99.00>83.00 (-) 5.85e4

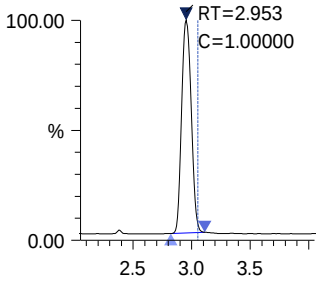


Sodium Perchlorate-18O4_IS

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

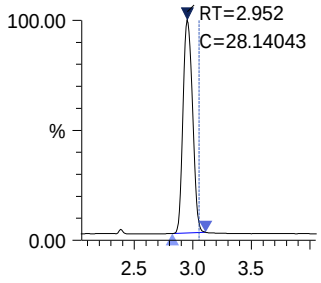
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	6/2/2020 4:44:57 PM	469066	28.14043	20200602_017	2.952	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	6/2/2020 4:44:57 PM	130327	1.00000	20200602_017	2.953	25.0000	1.0000	12

Perchlorate

Conc 28.14043

Area 469066

Q 99.00>83.00 (-) 8.16e4

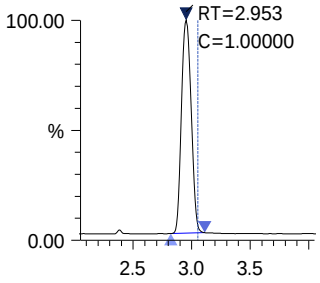


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 130327

ISTD 107.00>89.00 (-) 2.28e4



ALS Group Houston

PERCHLORATE10

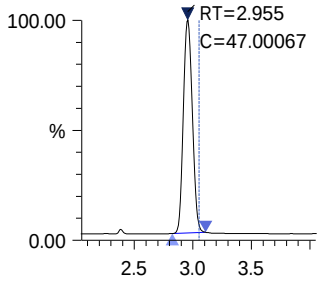
Date acquired: 6/2/2020 4:52:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

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

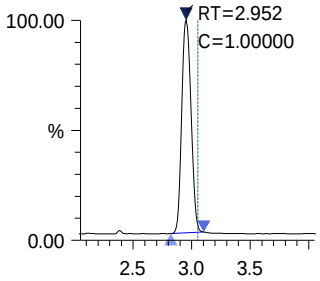
Q 99.00>83.00 (-) 1.36e5



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

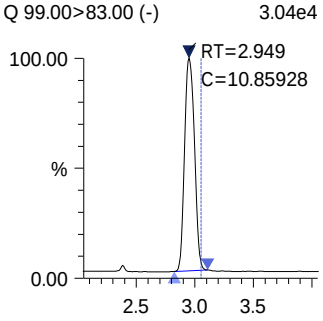
PERCHLORATEICV

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

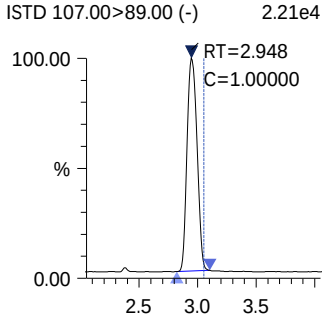
Perchlorate

Conc 10.85928
Area 180334



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 129839



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

20200616

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		20200616_001	Perchlorate6850b.lcm	1x	☒	
	null		20200616_002	Perchlorate6850b.lcm	1x	☒	
	null		20200616_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_005	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_006	Perchlorate6850b.lcm	1x	☒	
	LODV		20200616_007	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_008	Perchlorate6850b.lcm	1x	☒	3100807-04
	ICS		20200616_009	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_010	Perchlorate6850b.lcm	1x	☒	
	E2000491-006		20200616_011	Perchlorate6850b.lcm	1x	☒	do not use
	E2000492-004		20200616_012	Perchlorate6850b.lcm	1x	☒	
	E2000492-005		20200616_013	Perchlorate6850b.lcm	1x	☒	
	E2000492-007		20200616_014	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_015	Perchlorate6850b.lcm	1x	☒	
	E2000492-008		20200616_016	Perchlorate6850b.lcm	1x	☒	
	E2000491-005X2		20200616_017	Perchlorate6850b.lcm	2x	☒	
	E2000492-001X10		20200616_018	Perchlorate6850b.lcm	10x	☒	
	PERCHLORATE7		20200616_019	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000492-006X50		20200616_020	Perchlorate6850b.lcm	50x	☒	
	EQ2000228-01		20200616_021	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-02		20200616_022	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-03		20200616_023	Perchlorate6850b.lcm	1x	☒	
	E2000493-001		20200616_024	Perchlorate6850b.lcm	1x	☒	
	E2000493-002		20200616_025	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_026	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000493-003		20200616_027	Perchlorate6850b.lcm	1x	☒	
	E2000493-004		20200616_028	Perchlorate6850b.lcm	1x	☒	
	E2000493-005		20200616_029	Perchlorate6850b.lcm	1x	☒	
	E2000493-006		20200616_030	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_031	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000493-007		20200616_032	Perchlorate6850b.lcm	1x	☒	
	E2000493-008		20200616_033	Perchlorate6850b.lcm	1x	☒	
	E2000494-001		20200616_034	Perchlorate6850b.lcm	1x	☒	
	E2000494-002		20200616_035	Perchlorate6850b.lcm	1x	☒	
	E2000494-003		20200616_036	Perchlorate6850b.lcm	1x	☒	
	E2000494-004		20200616_037	Perchlorate6850b.lcm	1x	☒	
	E2000495-001		20200616_038	Perchlorate6850b.lcm	1x	☒	
	E2000496-001		20200616_039	Perchlorate6850b.lcm	1x	☒	
	E2000497-001		20200616_040	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_041	Perchlorate6850b.lcm	1x	☒	3100807-04

20200617

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		20200617_001	Perchlorate6850b.lcm	1x	☒	
	null		20200617_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200617_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200617_004	Perchlorate6850b.lcm	1x	☒	
	LODV		20200617_005	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200617_006	Perchlorate6850b.lcm	1x	☒	3100807-04
	ICS		20200617_007	Perchlorate6850b.lcm	1x	☒	
	E2000493-005		20200617_008	Perchlorate6850b.lcm	1x	☒	
	E2000495-001		20200617_009	Perchlorate6850b.lcm	1x	☒	
	E2000497-001		20200617_010	Perchlorate6850b.lcm	1x	☒	
	E2000493-003X500		20200617_011	Perchlorate6850b.lcm	500x	☒	
	E2000493-004X20		20200617_012	Perchlorate6850b.lcm	20x	☒	
	E2000493-006X20		20200617_013	Perchlorate6850b.lcm	20x	☒	
	E2000494-002X100		20200617_014	Perchlorate6850b.lcm	100x	☒	
	E2000494-003X500		20200617_015	Perchlorate6850b.lcm	500x	☒	
	E2000494-004X5000		20200617_016	Perchlorate6850b.lcm	5000x	☒	
	PERCHLORATE7		20200617_017	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000496-001X200		20200617_018	Perchlorate6850b.lcm	200x	☒	
	E2000493-005		20200617_019	Perchlorate6850b.lcm	1x	☒	
	E2000495-001		20200617_020	Perchlorate6850b.lcm	1x	☒	
	E2000497-001		20200617_021	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200617_022	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20

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\20200616\20200616_019	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	0.1279		5.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20

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\20200616\20200616_026	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	0.1279		6.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20

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\20200616\20200616_031	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.2	0.1279		11.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20

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\20200616\20200616_041	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1279		13.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/17/20

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\20200617\20200617_006	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279		8.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/17/20

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\20200617\20200617_017	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1279		10.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/17/20

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\20200617\20200617_022	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1279		10.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20 14:15

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

File ID:	I:\LCMS01\DATA\20200616\20200616_019	**Lab Code:**	EQ2000242-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-01	121,207	3.04
Method Blank	EQ2000228-01	132,882	3.04
Lab Control Sample	EQ2000228-02	144,551	3.04
Duplicate Lab Control Sample	EQ2000228-03	143,510	3.04
18CPTMW12SW_060220	E2000493-001	142,947	3.02
18CPTWM12DW_060220	E2000493-002	136,716	3.03

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:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20 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\20200616\20200616_026	**Lab Code:**	EQ2000242-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-02	116,422	2.99
18CPTMW23SW_060220	E2000493-005	164,818	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:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20 16:02

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

File ID:	I:\LCMS01\DATA\20200616\20200616_031	**Lab Code:**	EQ2000242-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-03	108,679	3.04
18WW24_060220	E2000493-007	187,014	2.98
18WW14_060220	E2000493-008	150,946	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:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/16/20 17:21

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200616\20200616_041	**Lab Code:**	EQ2000242-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-04	111,059	3.03

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:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/17/20 10:00

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

File ID:	I:\LCMS01\DATA\20200617\20200617_006	**Lab Code:**	EQ2000242-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-05	164,082	3.03
MW7_060220	E2000493-003	149,802	3.03
MW9_060220	E2000493-004	167,858	3.03
18CPTMW23_060220	E2000493-006	177,376	3.03

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:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/17/20 11:27

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200617\20200617_017	**Lab Code:**	EQ2000242-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-06	177,876	3.03

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:**	E2000493
Project:	HS20060135	**Date Analyzed:**	6/17/20 12:07

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

File ID:	I:\LCMS01\DATA\20200617\20200617_022	**Lab Code:**	EQ2000242-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-07	167,560	3.03

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

ALS Group Houston

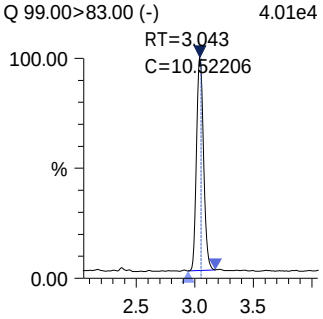
PERCHLORATE7

Date acquired: 6/16/2020 2:15:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_019.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	6/16/2020 2:15:37 PM	163116	10.52206	20200616_019	3.043	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 2:15:37 PM	121207	1.00000	20200616_019	3.039	25.0000	1.0000	4

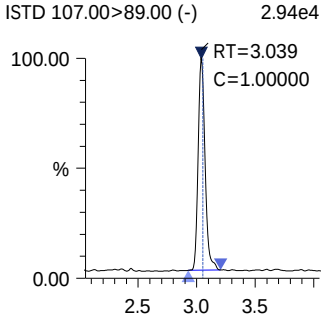
Perchlorate

Conc 10.52206
Area 163116



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 121207



ALS Group Houston

EQ2000228-01

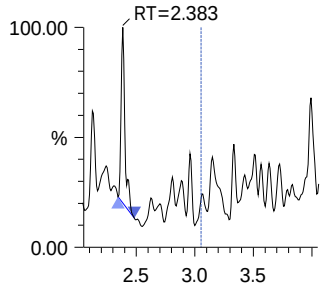
Date acquired: 6/16/2020 2:31:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_021.lcd
Vial: 33 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000228-01	6/16/2020 2:31:26 PM	----	----	20200616_021	----	25.0000	1.0000	33
Sodium Perchlorate-18O4_IS	EQ2000228-01	6/16/2020 2:31:26 PM	132882	1.00000	20200616_021	3.042	25.0000	1.0000	33

Perchlorate

Conc ----
Area ----

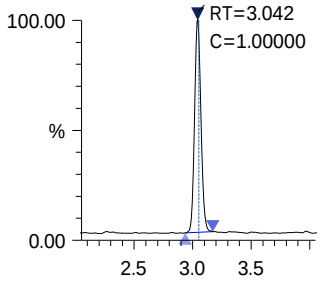
Q 99.00>83.00 (-) 8.78e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 132882

ISTD 107.00>89.00 (-) 3.46e4



ALS Group Houston

EQ2000228-02

Date acquired: 6/16/2020 2:39:18 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_022.lcd
Vial: 34 | Inj. Volume: 25.0000uL | Tray: 1

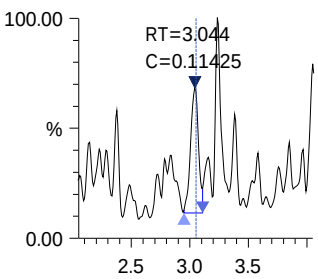
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000228-02	6/16/2020 2:39:18 PM	2112	0.11425	20200616_022	3.044	25.0000	1.0000	34
Sodium Perchlorate-18O4_IS	EQ2000228-02	6/16/2020 2:39:18 PM	144551	1.00000	20200616_022	3.040	25.0000	1.0000	34

Perchlorate

Conc 0.11425

Area 2112

Q 99.00>83.00 (-) 7.77e2

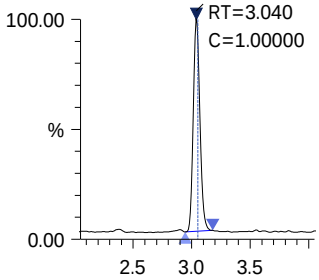


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 144551

ISTD 107.00>89.00 (-) 3.62e4



ALS Group Houston

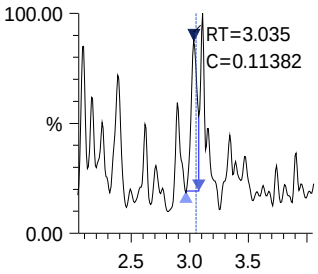
EQ2000228-03

Date acquired: 6/16/2020 2:47:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_023.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	EQ2000228-03	6/16/2020 2:47:11 PM	2089	0.11382	20200616_023	3.035	25.0000	1.0000	35
Sodium Perchlorate-18O4_IS	EQ2000228-03	6/16/2020 2:47:11 PM	143510	1.00000	20200616_023	3.041	25.0000	1.0000	35

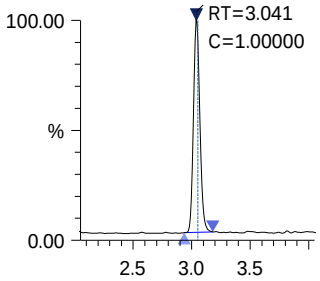
Perchlorate

Conc 0.11382
Area 2089
Q 99.00>83.00 (-) 8.57e2



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 143510
ISTD 107.00>89.00 (-) 3.73e4



ALS Group Houston

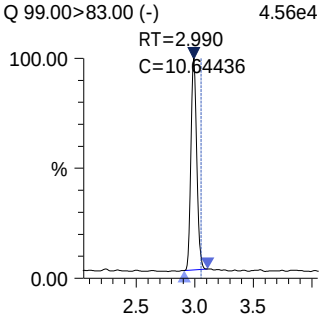
PERCHLORATE7

Date acquired: 6/16/2020 3:23:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_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	6/16/2020 3:23:02 PM	158498	10.64436	20200616_026	2.990	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 3:23:02 PM	116422	1.00000	20200616_026	2.989	25.0000	1.0000	4

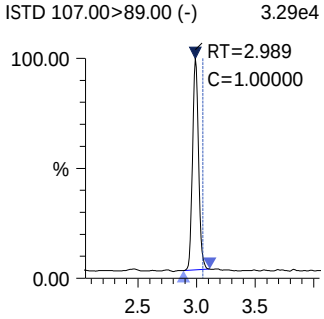
Perchlorate

Conc 10.64436
Area 158498



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 116422



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

June 19, 2020

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

Work Order: **HS20060202**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 10 sample(s) on Jun 04, 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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060202

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060202-01	18WW19_060320	Groundwater		03-Jun-2020 07:35	04-Jun-2020 09:10	
HS20060202-02	18WW20_060320	Groundwater		03-Jun-2020 08:25	04-Jun-2020 09:10	
HS20060202-03	18CPTMW19_060320	Groundwater		03-Jun-2020 09:20	04-Jun-2020 09:10	
HS20060202-04	18CPTMW19_060320_a	Groundwater		03-Jun-2020 09:20	04-Jun-2020 09:10	
HS20060202-05	18CPTMW19SW_060320	Groundwater		03-Jun-2020 10:15	04-Jun-2020 09:10	
HS20060202-06	18WW08_060320	Groundwater		03-Jun-2020 11:10	04-Jun-2020 09:10	
HS20060202-07	18WW09_060320	Groundwater		03-Jun-2020 12:00	04-Jun-2020 09:10	
HS20060202-08	CO9_060320	Groundwater		03-Jun-2020 13:00	04-Jun-2020 09:10	
HS20060202-09	CO6_060320	Groundwater		03-Jun-2020 13:50	04-Jun-2020 09:10	
HS20060202-10	Trip Blank	Water	CG 042320 -30	03-Jun-2020 00:00	04-Jun-2020 09:10	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060202

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: 154163

Sample ID: LCSD-154163

• LCS/LCSD RPD was above the RPD limit surrogate Nitrobenzene-d5.

GCMS Volatiles by Method SW8260

Batch ID: R362787

Sample ID: CCV

• 1,2,3_Trichlorobenzene and Naphthalene exceeded %D limits for CCV; associated samples in the batch are non-detect for these compounds.

Sample ID: VLCSW-200607

• 1,2-Dibromo-3-Chloropropane and 1,2,3-Trichlorobenzene exceeded QC limits for LCS; samples in HS2006202 are non-detect.

Sample ID: 18WW19_060320 (HS20060202-01MS)

• The recovery of the Matrix Spike (MS) and 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.

Metals by Method SW7470

Batch ID: 154514

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

Metals by Method SW6020

Batch ID: 154143

Sample ID: 18WW19_060320 (HS20060202-01MS)

• Aluminum failed for MS but passed for MSD and PDS.

Sample ID: 18WW19_060320 (HS20060202-01MSD)

• Iron failed for MSD but passed for MS and PDS.

• The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount (Manganese,Sodium).

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW19_060320
Collection Date: 03-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-01
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	07-Jun-2020 14:43
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 14:43
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 14:43
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 14:43
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 14:43
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 14:43
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW19_060320
Collection Date: 03-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-01
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	07-Jun-2020 14:43
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 14:43
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 14:43
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:43
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:43
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:43
Surr: 1,2-Dichloroethane-d4	*85.0*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 14:43*
Surr: 4-Bromofluorobenzene	*99.5*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 14:43*
Surr: Dibromofluoromethane	*89.5*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 14:43*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 14:43*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW19_060320
Collection Date: 03-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.187**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 10:22
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 10:22
Arsenic	**0.000580**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Barium	**0.124**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:22
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:22
Calcium	**6.19**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 10:22
Chromium	**0.0119**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Cobalt	**0.000522**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Copper	**0.00134**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Iron	**17.7**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:22
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 10:22
Magnesium	**3.31**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:22
Manganese	**0.327**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Nickel	**0.00613**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Potassium	**2.01**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:22
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 10:22
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 10:22
Sodium	**22.2**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 10:22
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 10:22
Vanadium	**0.00206**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
Zinc	**0.00605**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 10:22
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:33
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW20_060320
Collection Date: 03-Jun-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 18:19
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 18:19
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 18:19
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 18:19
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 18:19
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW20_060320
Collection Date: 03-Jun-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-02
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	07-Jun-2020 18:19
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 18:19
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 18:19
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 18:19
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:19
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
Trichloroethene	**0.60**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	07-Jun-2020 18:19
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:19
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:19
Surr: 1,2-Dichloroethane-d4	*83.9*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 18:19*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 18:19*
Surr: Dibromofluoromethane	*87.1*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 18:19*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 18:19*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.7**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 18:20
Surr: 2-Fluorobiphenyl	*59.9*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:20*
Surr: 4-Terphenyl-d14	*69.9*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:20*
Surr: Nitrobenzene-d5	*60.5*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:20*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW20_060320
Collection Date: 03-Jun-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0328**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 12:40
Antimony	**0.00107**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Arsenic	**0.000435**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Barium	**0.0909**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:40
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:40
Calcium	**2.73**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 12:40
Chromium	**0.00157**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Cobalt	**0.00453**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Copper	**0.00118**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Iron	**7.86**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:40
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 12:40
Magnesium	**1.87**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:40
Manganese	**0.269**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Nickel	**0.00525**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Potassium	**1.24**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:40
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 12:40
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 12:40
Sodium	**24.7**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:40
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:40
Vanadium	**0.00148**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
Zinc	**0.0102**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:40
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 16:59
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060202

Sample ID: 18CPTMW19_060320 Lab ID:HS20060202-03

Collection Date: 03-Jun-2020 09:20 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	07-Jun-2020 18:43
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 18:43
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 18:43
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 18:43
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 18:43
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 18:43
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW19_060320
Collection Date: 03-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-03
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	07-Jun-2020 18:43
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 18:43
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 18:43
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 18:43
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 18:43
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 18:43
Surr: 1,2-Dichloroethane-d4	*84.7*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 18:43*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 18:43*
Surr: Dibromofluoromethane	*89.1*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 18:43*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 18:43*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.2**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 18:40
Surr: 2-Fluorobiphenyl	*57.5*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:40*
Surr: 4-Terphenyl-d14	*75.0*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:40*
Surr: Nitrobenzene-d5	*59.0*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:40*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060202

Sample ID: 18CPTMW19_060320_a Lab ID:HS20060202-04

Collection Date: 03-Jun-2020 09:20 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	07-Jun-2020 19:07
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 19:07
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 19:07
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 19:07
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 19:07
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 19:07
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW19_060320_a
Collection Date: 03-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-04
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	07-Jun-2020 19:07
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 19:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 19:07
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:07
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:07
Surr: 1,2-Dichloroethane-d4	*85.7*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 19:07*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 19:07*
Surr: Dibromofluoromethane	*90.1*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 19:07*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 19:07*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.4**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 18:59
Surr: 2-Fluorobiphenyl	*69.7*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:59*
Surr: 4-Terphenyl-d14	*84.5*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:59*
Surr: Nitrobenzene-d5	*85.0*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 18:59*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW19SW_060320
Collection Date: 03-Jun-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 19:31
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 19:31
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 19:31
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 19:31
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 19:31
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW19SW_060320
Collection Date: 03-Jun-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-05
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	07-Jun-2020 19:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 19:31
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 19:31
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:31
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:31
Surr: 1,2-Dichloroethane-d4	*85.2*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 19:31*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 19:31*
Surr: Dibromofluoromethane	*89.2*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 19:31*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 19:31*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.91**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 19:19
Surr: 2-Fluorobiphenyl	*113*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 19:19*
Surr: 4-Terphenyl-d14	*68.9*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 19:19*
Surr: Nitrobenzene-d5	*76.1*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 19:19*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW19SW_060320
Collection Date: 03-Jun-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0447**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 12:42
Antimony	**0.000556**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Arsenic	**0.00368**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Barium	**0.156**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:42
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:42
Calcium	**9.32**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 12:42
Chromium	**0.00118**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Cobalt	**0.00709**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Copper	**0.00126**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Iron	**11.3**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:42
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 12:42
Magnesium	**5.11**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:42
Manganese	**0.393**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Nickel	**0.00192**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Potassium	**1.29**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:42
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 12:42
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 12:42
Sodium	**25.9**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:42
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:42
Vanadium	**0.00123**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
Zinc	**0.0160**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:42
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 17:00
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW08_060320
Collection Date: 03-Jun-2020 11:10

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-06
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	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 19:55
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 19:55
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 19:55
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 19:55
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 19:55
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW08_060320
Collection Date: 03-Jun-2020 11:10

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-06
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	07-Jun-2020 19:55
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 19:55
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 19:55
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 19:55
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 19:55
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 19:55
Surr: 1,2-Dichloroethane-d4	*85.2*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 19:55*
Surr: 4-Bromofluorobenzene	*99.4*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 19:55*
Surr: Dibromofluoromethane	*88.2*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 19:55*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 19:55*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**2.0**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 19:38
Surr: 2-Fluorobiphenyl	*76.4*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 19:38*
Surr: 4-Terphenyl-d14	*73.2*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 19:38*
Surr: Nitrobenzene-d5	*79.8*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 19:38*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW09_060320
Collection Date: 03-Jun-2020 12:00

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.60**		**0.050**	**0.050**	**0.050**	**ug/L**	5	18-Jun-2020 19:58
Surr: 2-Fluorobiphenyl	*73.3*			**0**	*40-140*	*%REC*	*5*	*18-Jun-2020 19:58*
Surr: 4-Terphenyl-d14	*74.5*			**0**	*40-140*	*%REC*	*5*	*18-Jun-2020 19:58*
Surr: Nitrobenzene-d5	*53.3*			**0**	*40-140*	*%REC*	*5*	*18-Jun-2020 19:58*
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.300**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 12:44
Antimony	**0.000536**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Arsenic	**0.00835**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Barium	**0.274**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:44
Cadmium	**0.000745**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 12:44
Calcium	**18.5**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 12:44
Chromium	**0.0851**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Cobalt	**0.00146**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Copper	**0.00443**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Iron	**48.9**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:44
Lead	**0.000935**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Magnesium	**10.4**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:44
Manganese	**0.881**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Nickel	**0.0339**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Potassium	**2.58**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:44
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 12:44
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 12:44
Sodium	**46.7**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:44
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:44
Vanadium	**0.00423**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
Zinc	**0.0127**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:44
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 17:02
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO9_060320
Collection Date: 03-Jun-2020 13:00

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-08
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	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 17:31
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 17:31
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 17:31
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 17:31
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 17:31
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO9_060320
Collection Date: 03-Jun-2020 13:00

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-08
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	07-Jun-2020 17:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 17:31
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 17:31
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:31
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:31
Surr: 1,2-Dichloroethane-d4	*85.3*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 17:31*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 17:31*
Surr: Dibromofluoromethane	*89.6*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 17:31*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 17:31*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO9_060320
Collection Date: 03-Jun-2020 13:00

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.103**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 12:47
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 12:47
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 12:47
Barium	**0.559**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:47
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:47
Calcium	**136**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 12:47
Chromium	**0.0571**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
Cobalt	**0.000941**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
Copper	**0.00115**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
Iron	**0.457**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:47
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 12:47
Magnesium	**38.0**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:47
Manganese	**0.106**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
Nickel	**0.0670**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
Potassium	**0.687**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:47
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 12:47
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 12:47
Sodium	**107**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:47
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:47
Vanadium	**0.000737**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
Zinc	**0.00942**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:47
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 17:04
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO6_060320
Collection Date: 03-Jun-2020 13:50

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-09
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	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 17:55
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 17:55
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 17:55
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 17:55
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 17:55
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO6_060320
Collection Date: 03-Jun-2020 13:50

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-09
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	07-Jun-2020 17:55
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 17:55
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 17:55
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:55
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:55
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:55
Surr: 1,2-Dichloroethane-d4	*86.0*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 17:55*
Surr: 4-Bromofluorobenzene	*99.7*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 17:55*
Surr: Dibromofluoromethane	*89.2*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 17:55*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 17:55*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO6_060320
Collection Date: 03-Jun-2020 13:50

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0324**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 12:49
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 12:49
Arsenic	**0.00143**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
Barium	**1.05**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:49
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:49
Calcium	**19.8**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 12:49
Chromium	**0.000421**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
Cobalt	**0.00194**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
Copper	**0.00105**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
Iron	**63.4**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:49
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 12:49
Magnesium	**11.6**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:49
Manganese	**0.981**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
Nickel	**0.00168**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
Potassium	**3.83**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:49
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 12:49
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 12:49
Sodium	**184**		**0.140**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 00:43
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:49
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 12:49
Zinc	**0.00959**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:49
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 17:05
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	17-Jun-2020 11:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 03-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-10
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	07-Jun-2020 14:19
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 14:19
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 14:19
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 14:19
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 14:19
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 14:19
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 03-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060202
Lab ID:HS20060202-10
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	07-Jun-2020 14:19
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 14:19
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 14:19
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 14:19
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 14:19
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 14:19
Surr: 1,2-Dichloroethane-d4	*85.2*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 14:19*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 14:19*
Surr: Dibromofluoromethane	*89.0*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 14:19*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 14:19*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

Batch ID: 154143 **Start Date:** 05 Jun 2020 10:00 **End Date:** 05 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060202-01		10 (mL)	10 (mL)	1
HS20060202-02		10 (mL)	10 (mL)	1
HS20060202-05		10 (mL)	10 (mL)	1
HS20060202-07		10 (mL)	10 (mL)	1
HS20060202-08		10 (mL)	10 (mL)	1
HS20060202-09		10 (mL)	10 (mL)	1

Batch ID: 154163 **Start Date:** 05 Jun 2020 10:30 **End Date:** 05 Jun 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
HS20060202-02	1	1000 (mL)	1 (mL)	0.001
HS20060202-03	1	1000 (mL)	1 (mL)	0.001
HS20060202-04	1	1000 (mL)	1 (mL)	0.001
HS20060202-05	1	1000 (mL)	1 (mL)	0.001
HS20060202-06	1	1000 (mL)	1 (mL)	0.001
HS20060202-07	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154514 **Start Date:** 16 Jun 2020 11:00 **End Date:** 16 Jun 2020 13:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060202-01		10 (mL)	10 (mL)	1
HS20060202-02		10 (mL)	10 (mL)	1
HS20060202-05		10 (mL)	10 (mL)	1
HS20060202-07		10 (mL)	10 (mL)	1
HS20060202-08		10 (mL)	10 (mL)	1
HS20060202-09		10 (mL)	10 (mL)	1

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154143 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060202-01	18WW19_060320	03 Jun 2020 07:35		05 Jun 2020 14:00	17 Jun 2020 10:22	1
HS20060202-02	18WW20_060320	03 Jun 2020 08:25		05 Jun 2020 14:00	17 Jun 2020 12:40	1
HS20060202-05	18CPTMW19SW_060320	03 Jun 2020 10:15		05 Jun 2020 14:00	17 Jun 2020 12:42	1
HS20060202-07	18WW09_060320	03 Jun 2020 12:00		05 Jun 2020 14:00	17 Jun 2020 12:44	1
HS20060202-08	CO9_060320	03 Jun 2020 13:00		05 Jun 2020 14:00	17 Jun 2020 12:47	1
HS20060202-09	CO6_060320	03 Jun 2020 13:50		05 Jun 2020 14:00	17 Jun 2020 12:49	1
HS20060202-09	CO6_060320	03 Jun 2020 13:50		05 Jun 2020 14:00	13 Jun 2020 00:43	10
Batch ID: 154163 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060202-02	18WW20_060320	03 Jun 2020 08:25		05 Jun 2020 13:59	18 Jun 2020 18:20	10
HS20060202-03	18CPTMW19_060320	03 Jun 2020 09:20		05 Jun 2020 13:59	18 Jun 2020 18:40	10
HS20060202-04	18CPTMW19_060320_a	03 Jun 2020 09:20		05 Jun 2020 13:59	18 Jun 2020 18:59	10
HS20060202-05	18CPTMW19SW_060320	03 Jun 2020 10:15		05 Jun 2020 13:59	18 Jun 2020 19:19	10
HS20060202-06	18WW08_060320	03 Jun 2020 11:10		05 Jun 2020 13:59	18 Jun 2020 19:38	10
HS20060202-07	18WW09_060320	03 Jun 2020 12:00		05 Jun 2020 13:59	18 Jun 2020 19:58	5
Batch ID: 154514 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060202-01	18WW19_060320	03 Jun 2020 07:35		16 Jun 2020 11:00	16 Jun 2020 16:33	1
HS20060202-02	18WW20_060320	03 Jun 2020 08:25		16 Jun 2020 11:00	16 Jun 2020 16:59	1
HS20060202-05	18CPTMW19SW_060320	03 Jun 2020 10:15		16 Jun 2020 11:00	16 Jun 2020 17:00	1
HS20060202-07	18WW09_060320	03 Jun 2020 12:00		16 Jun 2020 11:00	16 Jun 2020 17:02	1
HS20060202-08	CO9_060320	03 Jun 2020 13:00		16 Jun 2020 11:00	16 Jun 2020 17:04	1
HS20060202-09	CO6_060320	03 Jun 2020 13:50		16 Jun 2020 11:00	16 Jun 2020 17:05	1
Batch ID: R362787 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060202-10	Trip Blank	03 Jun 2020 00:00			07 Jun 2020 14:19	1
Batch ID: R362787 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060202-01	18WW19_060320	03 Jun 2020 07:35			07 Jun 2020 14:43	1
HS20060202-02	18WW20_060320	03 Jun 2020 08:25			07 Jun 2020 18:19	1
HS20060202-03	18CPTMW19_060320	03 Jun 2020 09:20			07 Jun 2020 18:43	1
HS20060202-04	18CPTMW19_060320_a	03 Jun 2020 09:20			07 Jun 2020 19:07	1
HS20060202-05	18CPTMW19SW_060320	03 Jun 2020 10:15			07 Jun 2020 19:31	1
HS20060202-06	18WW08_060320	03 Jun 2020 11:10			07 Jun 2020 19:55	1
HS20060202-08	CO9_060320	03 Jun 2020 13:00			07 Jun 2020 17:31	1
HS20060202-09	CO6_060320	03 Jun 2020 13:50			07 Jun 2020 17:55	1

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R363383 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060202-01	18WW19_060320	03 Jun 2020 07:35			17 Jun 2020 11:43	1
HS20060202-02	18WW20_060320	03 Jun 2020 08:25			17 Jun 2020 11:43	1
HS20060202-03	18CPTMW19_060320	03 Jun 2020 09:20			17 Jun 2020 11:43	1
HS20060202-04	18CPTMW19_060320_a	03 Jun 2020 09:20			17 Jun 2020 11:43	1
HS20060202-05	18CPTMW19SW_060320	03 Jun 2020 10:15			17 Jun 2020 11:43	1
HS20060202-06	18WW08_060320	03 Jun 2020 11:10			17 Jun 2020 11:43	1
HS20060202-07	18WW09_060320	03 Jun 2020 12:00			17 Jun 2020 11:43	1
HS20060202-08	CO9_060320	03 Jun 2020 13:00			17 Jun 2020 11:43	1
HS20060202-09	CO6_060320	03 Jun 2020 13:50			17 Jun 2020 11:43	1

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:54**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622461** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **13-Jun-2020 00:19**
Client ID: Run ID: **ICPMS04_363205** SeqNo: **5618488** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1036	0.0100	0.1	0	104	84 - 117				
Antimony	0.04444	0.00500	0.05	0	88.9	85 - 117				
Arsenic	0.04839	0.00500	0.05	0	96.8	84 - 116				
Barium	0.04305	0.00500	0.05	0	86.1	86 - 114				
Beryllium	0.04253	0.00200	0.05	0	85.1	83 - 121				
Cadmium	0.04548	0.00200	0.05	0	91.0	87 - 115				
Calcium	4.915	0.500	5	0	98.3	87 - 118				
Chromium	0.04599	0.00500	0.05	0	92.0	85 - 116				
Cobalt	0.04668	0.00500	0.05	0	93.4	86 - 115				
Copper	0.04723	0.00500	0.05	0	94.5	85 - 118				
Iron	4.804	0.200	5	0	96.1	87 - 118				
Lead	0.04455	0.00500	0.05	0	89.1	88 - 115				
Magnesium	4.772	0.200	5	0	95.4	83 - 118				
Manganese	0.04766	0.00500	0.05	0	95.3	87 - 115				
Nickel	0.04851	0.00500	0.05	0	97.0	85 - 117				
Potassium	4.928	0.200	5	0	98.6	87 - 115				
Selenium	0.04925	0.00500	0.05	0	98.5	80 - 120				
Thallium	0.04384	0.00200	0.05	0	87.7	82 - 116				
Vanadium	0.04598	0.00500	0.05	0	92.0	86 - 115				
Zinc	0.04946	0.00500	0.05	0	98.9	83 - 119				

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:57**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622462** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	0.04405	0.00500	0.05	0	88.1	85 - 116				
Sodium	4.488	0.200	5	0	89.8	85 - 117				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:27**
Client ID: **18WW19_060320** Run ID: **ICPMS05_363365** SeqNo: **5622452** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4279	0.0100	0.2	0.1871	120	84 - 117				S
Antimony	0.05061	0.00500	0.05	0.000066	101	85 - 117				
Arsenic	0.05255	0.00500	0.05	0.00058	104	84 - 116				
Barium	0.1782	0.00500	0.05	0.1242	108	86 - 114				
Beryllium	0.05514	0.00200	0.05	0.000124	110	83 - 121				
Cadmium	0.05175	0.00200	0.05	0.00014	103	87 - 115				
Calcium	11.32	0.500	5	6.187	103	87 - 118				
Chromium	0.06117	0.00500	0.05	0.01191	98.5	85 - 116				
Cobalt	0.04819	0.00500	0.05	0.000522	95.3	86 - 115				
Copper	0.05324	0.00500	0.05	0.00134	104	85 - 118				
Iron	22.72	0.200	5	17.7	100	87 - 118				
Lead	0.05014	0.00500	0.05	0.000553	99.2	88 - 115				
Magnesium	8.37	0.200	5	3.314	101	83 - 118				
Manganese	0.3712	0.00500	0.05	0.3265	89.3	87 - 115				O
Nickel	0.05722	0.00500	0.05	0.006132	102	85 - 117				
Potassium	7.374	0.200	5	2.014	107	87 - 115				
Selenium	0.05536	0.00500	0.05	-0.000101	111	80 - 120				
Silver	0.05019	0.00500	0.05	0.000014	100	85 - 116				
Sodium	27.24	0.200	5	22.16	101	85 - 117				O
Thallium	0.04787	0.00200	0.05	0.000063	95.6	82 - 116				
Vanadium	0.05291	0.00500	0.05	0.002064	102	86 - 115				
Zinc	0.05854	0.00500	0.05	0.006047	105	83 - 119				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:30**
Client ID: **18WW19_060320** Run ID: **ICPMS05_363365** SeqNo: **5622453** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4083	0.0100	0.2	0.1871	111	84 - 117	0.4279	4.69	20	
Antimony	0.04837	0.00500	0.05	0.000066	96.6	85 - 117	0.05061	4.53	20	
Arsenic	0.05104	0.00500	0.05	0.00058	101	84 - 116	0.05255	2.92	20	
Barium	0.1734	0.00500	0.05	0.1242	98.3	86 - 114	0.1782	2.75	20	
Beryllium	0.05386	0.00200	0.05	0.000124	107	83 - 121	0.05514	2.35	20	
Cadmium	0.05011	0.00200	0.05	0.00014	99.9	87 - 115	0.05175	3.23	20	
Calcium	10.87	0.500	5	6.187	93.8	87 - 118	11.32	3.97	20	
Chromium	0.05865	0.00500	0.05	0.01191	93.5	85 - 116	0.06117	4.21	20	
Cobalt	0.04616	0.00500	0.05	0.000522	91.3	86 - 115	0.04819	4.31	20	
Copper	0.05055	0.00500	0.05	0.00134	98.4	85 - 118	0.05324	5.19	20	
Iron	21.65	0.200	5	17.7	79.0	87 - 118	22.72	4.82	20	S
Lead	0.04823	0.00500	0.05	0.000553	95.4	88 - 115	0.05014	3.89	20	
Magnesium	8.178	0.200	5	3.314	97.3	83 - 118	8.37	2.32	20	
Manganese	0.3574	0.00500	0.05	0.3265	61.7	87 - 115	0.3712	3.79	20	SO
Nickel	0.05436	0.00500	0.05	0.006132	96.4	85 - 117	0.05722	5.14	20	
Potassium	7.075	0.200	5	2.014	101	87 - 115	7.374	4.13	20	
Selenium	0.05171	0.00500	0.05	-0.000101	104	80 - 120	0.05536	6.81	20	
Silver	0.04799	0.00500	0.05	0.000014	96.0	85 - 116	0.05019	4.49	20	
Sodium	26.07	0.200	5	22.16	78.1	85 - 117	27.24	4.39	20	SO
Thallium	0.04564	0.00200	0.05	0.000063	91.1	82 - 116	0.04787	4.78	20	
Vanadium	0.05056	0.00500	0.05	0.002064	97.0	86 - 115	0.05291	4.54	20	
Zinc	0.05664	0.00500	0.05	0.006047	101	83 - 119	0.05854	3.3	20	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060202-01PDS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:32**
Client ID: **18WW19_060320** Run ID: **ICPMS05_363365** SeqNo: **5622454** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4005	0.0100	0.2	0.1871	107	80 - 120				
Antimony	0.1916	0.00500	0.2	0.000066	95.8	80 - 120				
Arsenic	0.2107	0.00500	0.2	0.00058	105	80 - 120				
Barium	0.3222	0.00500	0.2	0.1242	99.0	80 - 120				
Cadmium	0.2032	0.00200	0.2	0.00014	102	80 - 120				
Calcium	26.11	0.500	20	6.187	99.6	80 - 120				
Chromium	0.2118	0.00500	0.2	0.01191	99.9	80 - 120				
Cobalt	0.1896	0.00500	0.2	0.000522	94.6	80 - 120				
Copper	0.2057	0.00500	0.2	0.00134	102	80 - 120				
Iron	37.41	0.200	20	17.7	98.6	80 - 120				
Lead	0.2051	0.00500	0.2	0.000553	102	80 - 120				
Magnesium	23.55	0.200	20	3.314	101	80 - 120				
Manganese	0.5342	0.00500	0.2	0.3265	104	80 - 120				
Nickel	0.2062	0.00500	0.2	0.006132	100	80 - 120				
Potassium	22.5	0.200	20	2.014	102	80 - 120				
Selenium	0.2133	0.00500	0.2	-0.000101	107	80 - 120				
Sodium	41.58	0.200	20	22.16	97.1	80 - 120				
Thallium	0.2051	0.00200	0.2	0.000063	102	80 - 120				
Vanadium	0.2053	0.00500	0.2	0.002064	102	80 - 120				
Zinc	0.2152	0.00500	0.2	0.006047	105	80 - 120				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060202-01SD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:25**
Client ID: **18WW19_060320** Run ID: **ICPMS05_363365** SeqNo: **5622451** PrepDate: **05-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.1824	0.0500					0.1871	2.56	10	
Antimony	0.00250	0.0250					0.000066	0	10	U
Arsenic	0.00250	0.0250					0.00058	0	10	U
Barium	0.1203	0.0250					0.1242	3.17	10	
Beryllium	0.00250	0.0100					0.000124	0	10	U
Cadmium	0.00250	0.0100					0.00014	0	10	U
Calcium	5.988	2.50					6.187	3.21	10	
Chromium	0.02323	0.0250					0.01191	0	10	J
Cobalt	0.00250	0.0250					0.000522	0	10	U
Copper	0.0125	0.0250					0.00134	0	10	U
Iron	17.81	1.00					17.7	0.621	10	
Lead	0.00500	0.0250					0.000553	0	10	U
Magnesium	3.144	1.00					3.314	5.11	10	
Manganese	0.3208	0.0250					0.3265	1.75	10	
Nickel	0.007999	0.0250					0.006132	0	10	J
Potassium	1.999	1.00					2.014	0.717	10	
Selenium	0.0125	0.0250					-0.000101	0	10	U
Silver	0.00250	0.0250					0.000014	0	10	U
Sodium	22.42	1.00					22.16	1.16	10	
Thallium	0.00250	0.0100					0.000063	0	10	U
Vanadium	0.007346	0.0250					0.002064	0	10	J
Zinc	0.02549	0.0250					0.006047	0	10	

The following samples were analyzed in this batch: HS20060202-01 HS20060202-02 HS20060202-05 HS20060202-07 HS20060202-08 HS20060202-09

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154514 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:30**
Client ID: Run ID: **HG03_363352** SeqNo: **5621648** PrepDate: **16-Jun-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-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:31**
Client ID: Run ID: **HG03_363352** SeqNo: **5621649** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00506	0.000200	0.005	0	101	82 - 119				

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **16-Jun-2020 16:35**
Client ID: **18WW19_060320** Run ID: **HG03_363352** SeqNo: **5621651** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119				

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **16-Jun-2020 16:37**
Client ID: **18WW19_060320** Run ID: **HG03_363352** SeqNo: **5621652** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119	0.005080	0	20	

The following samples were analyzed in this batch: HS20060202-01 HS20060202-02 HS20060202-05 HS20060202-07 HS20060202-08 HS20060202-09

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: 154163 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 11:44**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627371** PrepDate: **05-Jun-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	*0.07849*	*0*	*0.08*	*0*	*98.1*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0791*	*0*	*0.08*	*0*	*98.9*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07929*	*0*	*0.08*	*0*	*99.1*	*40 - 140*				

LCS Sample ID: **LCS-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 12:03**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627372** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.07118	0.010	0.08	0	89.0	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08107*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08274*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.1035*	*0*	*0.08*	*0*	*129*	*40 - 140*				

LCSD Sample ID: **LCSD-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 12:23**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627373** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.06157	0.010	0.08	0	77.0	40 - 140	0.07118	14.5	20	
Surr: 2-Fluorobiphenyl	*0.08394*	*0*	*0.08*	*0*	*105*	*40 - 140*	*0.08107*	*3.47*	*20*	
Surr: 4-Terphenyl-d14	*0.08169*	*0*	*0.08*	*0*	*102*	*40 - 140*	*0.08274*	*1.28*	*20*	
Surr: Nitrobenzene-d5	*0.05779*	*0*	*0.08*	*0*	*72.2*	*40 - 140*	*0.1035*	*56.7*	*20*	R

The following samples were analyzed in this batch: HS20060202-02 HS20060202-03 HS20060202-04 HS20060202-05 HS20060202-06 HS20060202-07

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 13:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609445** 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	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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 13:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609445** 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	*42.34*	*1.0*	*50*	*0*	*84.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.03*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*43.54*	*1.0*	*50*	*0*	*87.1*	*80 - 119*				
Surr: Toluene-d8	*53.96*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 12:43**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609444** 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	21.06	1.0	20	0	105	78 - 124				
1,1,1-Trichloroethane	20.13	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	20.91	1.0	20	0	105	71 - 121				
1,1,2-Trichloroethane	21.52	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	20.59	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	19.37	1.0	20	0	96.9	71 - 131				
1,1-Dichloropropene	19.17	1.0	20	0	95.8	78 - 125				
1,2,3-Trichlorobenzene	27.16	1.0	20	0	136	69 - 129				S
1,2,3-Trichloropropane	20.83	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	25.4	1.0	20	0	127	69 - 130				
1,2,4-Trimethylbenzene	19.2	1.0	20	0	96.0	76 - 124				
1,2-Dibromo-3-chloropropane	26.65	1.0	20	0	133	62 - 128				S
1,2-Dibromoethane	21.61	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	20.39	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	21.15	1.0	20	0	106	73 - 128				
1,2-Dichloropropane	21.22	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	18.61	1.0	20	0	93.0	75 - 124				
1,3-Dichlorobenzene	19.47	1.0	20	0	97.4	80 - 119				
1,3-Dichloropropane	20.93	1.0	20	0	105	80 - 119				
1,4-Dichlorobenzene	18.86	1.0	20	0	94.3	79 - 118				
2,2-Dichloropropane	20.21	1.0	20	0	101	60 - 139				
2-Butanone	43.17	2.0	40	0	108	56 - 143				
2-Chlorotoluene	17.99	1.0	20	0	89.9	79 - 122				
2-Hexanone	47.25	2.0	40	0	118	57 - 139				
4-Chlorotoluene	18.23	1.0	20	0	91.1	78 - 122				
4-Isopropyltoluene	18.63	1.0	20	0	93.2	77 - 127				
4-Methyl-2-pentanone	45.11	2.0	40	0	113	67 - 130				
Acetone	46.39	2.0	40	0	116	39 - 160				
Benzene	20.46	1.0	20	0	102	79 - 120				
Bromobenzene	19.73	1.0	20	0	98.6	80 - 120				
Bromochloromethane	20.83	1.0	20	0	104	78 - 123				
Bromodichloromethane	21.34	1.0	20	0	107	79 - 125				
Bromoform	22.89	1.0	20	0	114	66 - 130				
Bromomethane	22.06	1.0	20	0	110	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 12:43**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609444** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.85	2.0	40	0	99.6	64 - 133				
Carbon tetrachloride	18.88	1.0	20	0	94.4	72 - 136				
Chlorobenzene	19.86	1.0	20	0	99.3	82 - 118				
Chloroethane	19.52	1.0	20	0	97.6	60 - 138				
Chloroform	20.73	1.0	20	0	104	79 - 124				
Chloromethane	19.72	1.0	20	0	98.6	50 - 139				
cis-1,2-Dichloroethene	21.06	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	21.53	1.0	20	0	108	75 - 124				
Dibromochloromethane	20.97	1.0	20	0	105	74 - 126				
Dibromomethane	21.74	1.0	20	0	109	79 - 123				
Dichlorodifluoromethane	19.78	1.0	20	0	98.9	32 - 152				
Ethylbenzene	19.45	1.0	20	0	97.2	79 - 121				
Hexachlorobutadiene	26.33	1.0	20	0	132	66 - 134				
Isopropylbenzene	19.18	1.0	20	0	95.9	72 - 131				
m,p-Xylene	39.44	2.0	40	0	98.6	80 - 121				
Methylene chloride	22.56	2.0	20	0	113	74 - 124				
Naphthalene	24.96	1.0	20	0	125	61 - 128				
n-Butylbenzene	18.88	1.0	20	0	94.4	75 - 128				
n-Propylbenzene	18.3	1.0	20	0	91.5	76 - 126				
o-Xylene	19.84	1.0	20	0	99.2	78 - 122				
sec-Butylbenzene	17.91	1.0	20	0	89.5	77 - 126				
Styrene	20.41	1.0	20	0	102	78 - 123				
tert-Butylbenzene	18.09	1.0	20	0	90.5	78 - 124				
Tetrachloroethene	19.69	1.0	20	0	98.4	74 - 129				
Toluene	19.84	1.0	20	0	99.2	80 - 121				
trans-1,2-Dichloroethene	20.61	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	22.11	1.0	20	0	111	73 - 127				
Trichloroethene	20.49	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	19.93	1.0	20	0	99.6	65 - 141				
Vinyl chloride	18.12	1.0	20	0	90.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.17*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.12*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*52.59*	*1.0*	*50*	*0*	*105*	*80 - 119*				
Surr: Toluene-d8	*46.61*	*1.0*	*50*	*0*	*93.2*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060202-01MS** Units: **UG/L** Analysis Date: **07-Jun-2020 15:31**
Client ID: **18WW19_060320** Run ID: **VOA6_362787** SeqNo: **5609450** 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	21.29	1.0	20	0	106	78 - 124				
1,1,1-Trichloroethane	18.27	1.0	20	0	91.4	74 - 131				
1,1,2,2-Tetrachloroethane	21.58	1.0	20	0	108	71 - 121				
1,1,2-Trichloroethane	21.58	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	17.27	1.0	20	0	86.4	77 - 125				
1,1-Dichloroethene	17.93	1.0	20	0	89.7	71 - 131				
1,1-Dichloropropene	19.53	1.0	20	0	97.7	78 - 125				
1,2,3-Trichlorobenzene	27.88	1.0	20	0	139	69 - 129				S
1,2,3-Trichloropropane	21.09	1.0	20	0	105	73 - 122				
1,2,4-Trichlorobenzene	26.24	1.0	20	0	131	69 - 130				S
1,2,4-Trimethylbenzene	21.3	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	25.58	1.0	20	0	128	62 - 128				
1,2-Dibromoethane	21.6	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	22.29	1.0	20	0	111	80 - 119				
1,2-Dichloroethane	19.79	1.0	20	0	98.9	73 - 128				
1,2-Dichloropropane	20.18	1.0	20	0	101	78 - 122				
1,3,5-Trimethylbenzene	20.76	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.78	1.0	20	0	104	80 - 119				
1,3-Dichloropropane	20.87	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.77	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	17.19	1.0	20	0	86.0	60 - 139				
2-Butanone	34.12	2.0	40	0	85.3	56 - 143				
2-Chlorotoluene	20.22	1.0	20	0	101	79 - 122				
2-Hexanone	47.59	2.0	40	0	119	57 - 139				
4-Chlorotoluene	19.97	1.0	20	0	99.8	78 - 122				
4-Isopropyltoluene	21.69	1.0	20	0	108	77 - 127				
4-Methyl-2-pentanone	46.03	2.0	40	0	115	67 - 130				
Acetone	30.09	2.0	40	0	75.2	39 - 160				
Benzene	19.35	1.0	20	0	96.7	79 - 120				
Bromobenzene	20.97	1.0	20	0	105	80 - 120				
Bromochloromethane	17.4	1.0	20	0	87.0	78 - 123				
Bromodichloromethane	19.36	1.0	20	0	96.8	79 - 125				
Bromoform	22.48	1.0	20	0	112	66 - 130				
Bromomethane	15.86	1.0	20	0	79.3	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060202-01MS** Units: **UG/L** Analysis Date: **07-Jun-2020 15:31**
Client ID: **18WW19_060320** Run ID: **VOA6_362787** SeqNo: **5609450** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	35.76	2.0	40	0	89.4	64 - 133				
Carbon tetrachloride	19.7	1.0	20	0	98.5	72 - 136				
Chlorobenzene	20.69	1.0	20	0	103	82 - 118				
Chloroethane	16.35	1.0	20	0	81.7	60 - 138				
Chloroform	17.58	1.0	20	0	87.9	79 - 124				
Chloromethane	13.44	1.0	20	0	67.2	50 - 139				
cis-1,2-Dichloroethene	17.89	1.0	20	0	89.5	78 - 123				
cis-1,3-Dichloropropene	19.77	1.0	20	0	98.8	75 - 124				
Dibromochloromethane	21.12	1.0	20	0	106	74 - 126				
Dibromomethane	19.73	1.0	20	0	98.7	79 - 123				
Dichlorodifluoromethane	10.16	1.0	20	0	50.8	32 - 152				
Ethylbenzene	21.38	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	28.02	1.0	20	0	140	66 - 134				S
Isopropylbenzene	21.34	1.0	20	0	107	72 - 131				
m,p-Xylene	42.58	2.0	40	0	106	80 - 121				
Methylene chloride	17.6	2.0	20	0	88.0	74 - 124				
Naphthalene	26.8	1.0	20	0	134	61 - 128				S
n-Butylbenzene	22.03	1.0	20	0	110	75 - 128				
n-Propylbenzene	20.81	1.0	20	0	104	76 - 126				
o-Xylene	21.36	1.0	20	0	107	78 - 122				
sec-Butylbenzene	21.07	1.0	20	0	105	77 - 126				
Styrene	21.23	1.0	20	0	106	78 - 123				
tert-Butylbenzene	20.87	1.0	20	0	104	78 - 124				
Tetrachloroethene	22.06	1.0	20	0	110	74 - 129				
Toluene	20.94	1.0	20	0	105	80 - 121				
trans-1,2-Dichloroethene	17.8	1.0	20	0	89.0	75 - 124				
trans-1,3-Dichloropropene	19.79	1.0	20	0	99.0	73 - 127				
Trichloroethene	20.71	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	17.39	1.0	20	0	86.9	65 - 141				
Vinyl chloride	14.37	1.0	20	0	71.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44*	*1.0*	*50*	*0*	*88.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.09*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*44.73*	*1.0*	*50*	*0*	*89.5*	*80 - 119*				
Surr: Toluene-d8	*53.41*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060202-01MSD** Units: **UG/L** Analysis Date: **07-Jun-2020 15:55**
Client ID: **18WW19_060320** Run ID: **VOA6_362787** SeqNo: **5609451** 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	20.1	1.0	20	0	101	78 - 124	21.29	5.75	20	
1,1,1-Trichloroethane	18.37	1.0	20	0	91.9	74 - 131	18.27	0.562	20	
1,1,2,2-Tetrachloroethane	19.43	1.0	20	0	97.1	71 - 121	21.58	10.5	20	
1,1,2-Trichloroethane	19.82	1.0	20	0	99.1	80 - 119	21.58	8.54	20	
1,1-Dichloroethane	16.79	1.0	20	0	84.0	77 - 125	17.27	2.84	20	
1,1-Dichloroethene	17.44	1.0	20	0	87.2	71 - 131	17.93	2.76	20	
1,1-Dichloropropene	19.36	1.0	20	0	96.8	78 - 125	19.53	0.872	20	
1,2,3-Trichlorobenzene	33.72	1.0	20	0	169	69 - 129	27.88	18.9	20	S
1,2,3-Trichloropropane	18.95	1.0	20	0	94.7	73 - 122	21.09	10.7	20	
1,2,4-Trichlorobenzene	29.46	1.0	20	0	147	69 - 130	26.24	11.6	20	S
1,2,4-Trimethylbenzene	18.69	1.0	20	0	93.5	76 - 124	21.3	13	20	
1,2-Dibromo-3-chloropropane	25.98	1.0	20	0	130	62 - 128	25.58	1.53	20	S
1,2-Dibromoethane	20.68	1.0	20	0	103	77 - 121	21.6	4.36	20	
1,2-Dichlorobenzene	19.64	1.0	20	0	98.2	80 - 119	22.29	12.6	20	
1,2-Dichloroethane	18.62	1.0	20	0	93.1	73 - 128	19.79	6.09	20	
1,2-Dichloropropane	19.48	1.0	20	0	97.4	78 - 122	20.18	3.51	20	
1,3,5-Trimethylbenzene	18.37	1.0	20	0	91.9	75 - 124	20.76	12.2	20	
1,3-Dichlorobenzene	18.63	1.0	20	0	93.1	80 - 119	20.78	10.9	20	
1,3-Dichloropropane	19.72	1.0	20	0	98.6	80 - 119	20.87	5.64	20	
1,4-Dichlorobenzene	17.95	1.0	20	0	89.7	79 - 118	20.77	14.6	20	
2,2-Dichloropropane	16.61	1.0	20	0	83.0	60 - 139	17.19	3.47	20	
2-Butanone	34.68	2.0	40	0	86.7	56 - 143	34.12	1.65	20	
2-Chlorotoluene	17.65	1.0	20	0	88.3	79 - 122	20.22	13.6	20	
2-Hexanone	45.45	2.0	40	0	114	57 - 139	47.59	4.6	20	
4-Chlorotoluene	17.55	1.0	20	0	87.7	78 - 122	19.97	12.9	20	
4-Isopropyltoluene	19.61	1.0	20	0	98.1	77 - 127	21.69	10.1	20	
4-Methyl-2-pentanone	44.39	2.0	40	0	111	67 - 130	46.03	3.63	20	
Acetone	29.7	2.0	40	0	74.2	39 - 160	30.09	1.32	20	
Benzene	18.88	1.0	20	0	94.4	79 - 120	19.35	2.43	20	
Bromobenzene	17.78	1.0	20	0	88.9	80 - 120	20.97	16.5	20	
Bromochloromethane	16.81	1.0	20	0	84.0	78 - 123	17.4	3.47	20	
Bromodichloromethane	19.04	1.0	20	0	95.2	79 - 125	19.36	1.65	20	
Bromoform	21.25	1.0	20	0	106	66 - 130	22.48	5.61	20	
Bromomethane	15.4	1.0	20	0	77.0	53 - 141	15.86	2.96	20	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060202-01MSD** Units: **UG/L** Analysis Date: **07-Jun-2020 15:55**
Client ID: **18WW19_060320** Run ID: **VOA6_362787** SeqNo: **5609451** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	35.06	2.0	40	0	87.7	64 - 133	35.76	1.96	20	
Carbon tetrachloride	19.37	1.0	20	0	96.9	72 - 136	19.7	1.68	20	
Chlorobenzene	19.29	1.0	20	0	96.5	82 - 118	20.69	7.01	20	
Chloroethane	15.7	1.0	20	0	78.5	60 - 138	16.35	4.08	20	
Chloroform	16.96	1.0	20	0	84.8	79 - 124	17.58	3.63	20	
Chloromethane	13.16	1.0	20	0	65.8	50 - 139	13.44	2.05	20	
cis-1,2-Dichloroethene	17.45	1.0	20	0	87.2	78 - 123	17.89	2.53	20	
cis-1,3-Dichloropropene	19.12	1.0	20	0	95.6	75 - 124	19.77	3.33	20	
Dibromochloromethane	19.44	1.0	20	0	97.2	74 - 126	21.12	8.26	20	
Dibromomethane	19.08	1.0	20	0	95.4	79 - 123	19.73	3.33	20	
Dichlorodifluoromethane	10.09	1.0	20	0	50.4	32 - 152	10.16	0.684	20	
Ethylbenzene	19.88	1.0	20	0	99.4	79 - 121	21.38	7.26	20	
Hexachlorobutadiene	28.29	1.0	20	0	141	66 - 134	28.02	0.943	20	S
Isopropylbenzene	20.16	1.0	20	0	101	72 - 131	21.34	5.67	20	
m,p-Xylene	39.54	2.0	40	0	98.9	80 - 121	42.58	7.39	20	
Methylene chloride	16.82	2.0	20	0	84.1	74 - 124	17.6	4.53	20	
Naphthalene	32.67	1.0	20	0	163	61 - 128	26.8	19.8	20	S
n-Butylbenzene	20.03	1.0	20	0	100	75 - 128	22.03	9.49	20	
n-Propylbenzene	18.52	1.0	20	0	92.6	76 - 126	20.81	11.6	20	
o-Xylene	19.9	1.0	20	0	99.5	78 - 122	21.36	7.08	20	
sec-Butylbenzene	19.3	1.0	20	0	96.5	77 - 126	21.07	8.76	20	
Styrene	19.94	1.0	20	0	99.7	78 - 123	21.23	6.26	20	
tert-Butylbenzene	18.73	1.0	20	0	93.6	78 - 124	20.87	10.8	20	
Tetrachloroethene	21.6	1.0	20	0	108	74 - 129	22.06	2.1	20	
Toluene	19.75	1.0	20	0	98.7	80 - 121	20.94	5.85	20	
trans-1,2-Dichloroethene	17.3	1.0	20	0	86.5	75 - 124	17.8	2.82	20	
trans-1,3-Dichloropropene	18.87	1.0	20	0	94.4	73 - 127	19.79	4.76	20	
Trichloroethene	20.14	1.0	20	0	101	79 - 123	20.71	2.8	20	
Trichlorofluoromethane	17.71	1.0	20	0	88.6	65 - 141	17.39	1.87	20	
Vinyl chloride	14.09	1.0	20	0	70.5	58 - 137	14.37	1.97	20	
Surr: 1,2-Dichloroethane-d4	*43.6*	*1.0*	*50*	*0*	*87.2*	*81 - 118*	*44*	*0.923*	*20*	
Surr: 4-Bromofluorobenzene	*51.62*	*1.0*	*50*	*0*	*103*	*85 - 114*	*50.09*	*3.01*	*20*	
Surr: Dibromofluoromethane	*44.74*	*1.0*	*50*	*0*	*89.5*	*80 - 119*	*44.73*	*0.0254*	*20*	
Surr: Toluene-d8	*51.62*	*1.0*	*50*	*0*	*103*	*89 - 112*	*53.41*	*3.41*	*20*	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060202

QC BATCH REPORT

Batch ID: R362787 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20060202-01	HS20060202-02	HS20060202-03	HS20060202-04
HS20060202-05	HS20060202-06	HS20060202-08	HS20060202-09
HS20060202-10			

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060202**

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
Illinois	2000322020-4	09-May-2021
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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060202

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060202-01	18WW19_060320	Login	6/4/2020 1:38:07 PM	JRM	MET040
HS20060202-01	18WW19_060320	Login	6/4/2020 1:38:07 PM	JRM	Sub
HS20060202-01	18WW19_060320	Login	6/4/2020 1:38:07 PM	JRM	EXT137
HS20060202-01	18WW19_060320	Login	6/4/2020 1:38:07 PM	JRM	VOA065

ALS Houston, US Date: 19-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060202 **Date/Time Received:** 04-Jun-2020 09:10

Client Name: Bhate Environmental **Received by:** Nilesh D. Ranchod

Completed By: /S/ Jared R. Makan (eSignature) 03-Jun-2020 15:47 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 04-Jun-2020 15:47 (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):	1.0°C/1.0°C UC/C	IR25
Cooler(s)/Kit(s):	46040	
Date/Time sample(s) sent to storage:	06/03/2020 14:05	

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: HNO3 preserved metals samples received for 18CPTMW_19_060320 & 18CPTMW_19_060320_a, metals analysis not checked off on COC. Samples placed on hold.
One VOC vial for 18WW20_060320 received broken.

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.O.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Field Sample ID (20 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (3)	Sample Number (4)	Sample Matrix (4)	Number of containers	VOC	PERCHLORATE	TOTAL METALS	1, 4 - DIOXANE							Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
18mw19_060320	03-Jun-2020	0735	-	N		WG	5	X	X	X											
18mw19_060320_MS	03-Jun-2020	0735	-	MS		WG	5	X	X	X											
18mw19_060320_MSD	03-Jun-2020	0735	-	SD		WG	5	X	X	X											
18mw20_060320	03-Jun-2020	0825		N		WG	6	X	X	X	X										
18CPTmw19_060320	03-Jun-2020	0920		N		WG	5	X	X		X										
18CPTmw19_060320_a	03-Jun-2020	0920	-	FD		WG	5	X	X		X										
18CPTmw19SW_060320	03-Jun-2020	1015	-	N		WG	6	X	X	X	X										
18mw08_060320	03-Jun-2020	1110	-	N		WG	5	X	X		X										
18mw09_060320	03-Jun-2020	1200	-	N		WG	3		X	X	X										
C09_060320	03-Jun-2020	1300	-	N		WG	5	X	X	X											
C06_060320	03-Jun-2020	1350	-	N		WG	5	X	X	X											

Sample Analysis Requested (2) | Quality Assurance Samples (5)

COMMENTS: _____

HS20060202

Bhate Environmental Associates, Inc.

LHAAP 18 24

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (signed)	Date	Time	Received by (signed)	Date	Time
Scott Beesinger	6/3/20	1430	1. NA	6/4/20	0915
2.			2.		09.10
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

Analytical Lab: ALS 10450 Stanciff 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), SO = 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

46040

Tamu ux k o
ikAA 25 cmo

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: NW01312-0150

COC Number(1): ____

EIMS Number: ____

Facility/Base i.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Field Sample ID (20 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	1, 4 - DIOXANE									Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
TRIP BLANK	03-JAN-2020			TB		W	2	X															

Sample Analysis Requested [5] | Quality Assurance Samples [6]

COMMENTS: ____

HS20060202
Bhate Environmental Associates, Inc.
LHAAP 18 24

Custody Transfers Prior to Receipt by Laboratory

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

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped ____ No.:

Method of Shipment: ____

Fed Ex ____ Airbill Number: ____

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

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

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

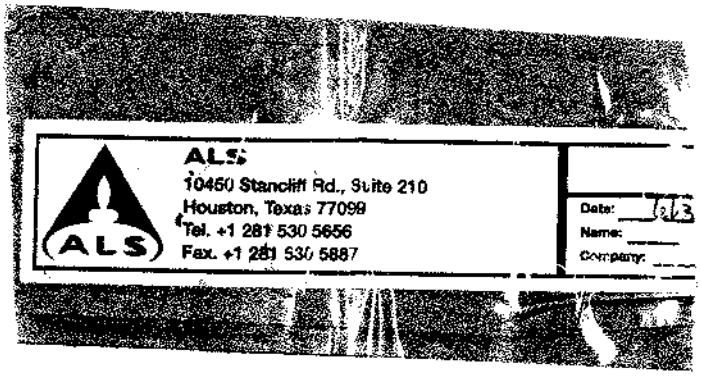
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-t) Samples, FD = Field Duplicate (-u) Samples, FR = Field Replicate (-r) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-a)

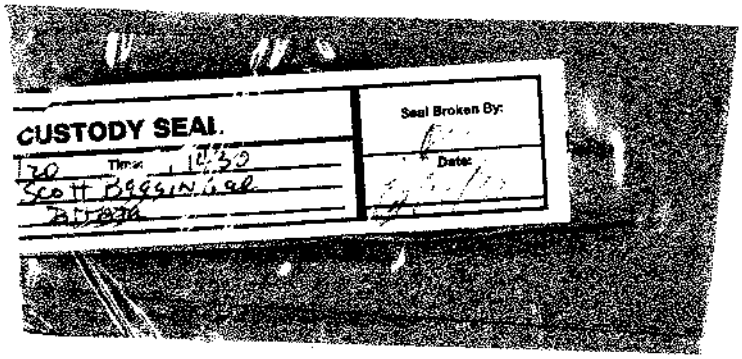
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: AS = 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.) Analysis Requested: Indicate the analytical method requested and the number of containers per sample. Special instructions or QC requirements should be noted on this line or attached as an addendum. All deviations must be approved by the laboratory project manager prior to sample analysis.

6.) Quality Assurance Samples: Indicate the number of blank samples associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 101099EB1 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
Date: 7/13
Name:
Company:


CUSTODY SEAL
Time: 10:30
Seal Broken By:
Date:

00973236

June 16, 2020 Service Request No:E2000491

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

Laboratory Results for: HS20060202

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 04, 2020
For your reference, these analyses have been assigned our service request number **E2000491.**

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.:**	E2000491
Project:	HS20060202	**Date Received:**	06/04/20
Sample Matrix:	Water		

CASE NARRATIVE

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

Sample Receipt

Nine samples were received for analysis at ALS Environmental in Houston on 06/04/20.

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:

EQ2000277: 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, DLCS, MS, & MSD 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.

Client: ALS Environmental - US **Service Request:**E2000491

Project: HS20060202

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000491-001	18WW19_060320	6/3/2020	0735
E2000491-002	18WW20-060320	6/3/2020	0825
E2000491-003	18CPTMW19_060320	6/3/2020	0920
E2000491-004	18CPTMW19_060320_a	6/3/2020	0920
E2000491-005	18CPTMW19SW_060320	6/3/2020	1015
E2000491-006	18WW08_060320	6/3/2020	1110
E2000491-007	18WW09_060320	6/3/2020	1200
E2000491-008	CO9_060320	6/3/2020	1300
E2000491-009	CO6_060320	6/3/2020	1350

Service Request Summary

Folder #: **E2000491**
Client Name: ALS Environmental - US
Project Name: HS20060202
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: 06/04/20
Internal Due Date: 6/18/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060202
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000491-001	18WW19_060320	Ground Water	06/03/20 0735	**IV**
E2000491-002	18WW20-060320	Ground Water	06/03/20 0825	**IV**
E2000491-003	18CPTMW19_060320	Ground Water	06/03/20 0920	**IV**
E2000491-004	18CPTMW19_060320_a	Ground Water	06/03/20 0920	**IV**
E2000491-005	18CPTMW19SW_060320	Ground Water	06/03/20 1015	**IV**
E2000491-006	18WW08_060320	Ground Water	06/03/20 1110	**IV**
E2000491-007	18WW09_060320	Ground Water	06/03/20 1200	**IV**
E2000491-008	CO9_060320	Ground Water	06/03/20 1300	**IV**
E2000491-009	CO6_060320	Ground Water	06/03/20 1350	**IV**

Service Request Summary

Folder #: **E2000491**
Client Name: ALS Environmental - US
Project Name: HS20060202
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: 06/04/20
Internal Due Date: 6/18/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060202
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	8	Level IV due 6/25, level II 6/18
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD! Level IV due 6/25,level II 6/18

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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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: **Texas** **COC ID:** **14041**

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:	HS20060202
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060202-01**	**18WW19_060320**	**Groundwater**	**03 Jun 2020 07:35**
	SUB_Perch-6850			12 Jun 2020
2.	**HS20060202-02**	**18WW20_060320**	**Groundwater**	**03 Jun 2020 08:25**
	SUB_Perch-6850			12 Jun 2020
3.	**HS20060202-03**	**18CPTMW19_060320**	**Groundwater**	**03 Jun 2020 09:20**
	SUB_Perch-6850			12 Jun 2020
4.	**HS20060202-04**	**18CPTMW19_060320_a**	**Groundwater**	**03 Jun 2020 09:20**
	SUB_Perch-6850			12 Jun 2020
5.	**HS20060202-05**	**18CPTMW19SW_060320**	**Groundwater**	**03 Jun 2020 10:15**
	SUB_Perch-6850			12 Jun 2020
6.	**HS20060202-06**	**18WW08_060320**	**Groundwater**	**03 Jun 2020 11:10**
	SUB_Perch-6850			12 Jun 2020
7.	**HS20060202-07**	**18WW09_060320**	**Groundwater**	**03 Jun 2020 12:00**
	SUB_Perch-6850			12 Jun 2020
8.	**HS20060202-08**	**CO9_060320**	**Groundwater**	**03 Jun 2020 13:00**
	SUB_Perch-6850			12 Jun 2020
9.	**HS20060202-09**	**CO6_060320**	**Groundwater**	**03 Jun 2020 13:50**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14041**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
SUB_Perch-6850			12 Jun 2020

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

HS20060202-01 MS/MSD

QC Level: DOD IV (DoD Data Package)

Relinquished By: J. [illegible] Date/Time: 06/04/20

Received By: [signature] Date/Time: 6/4/20 1945

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist: CG

Client/Project: ALS-H

Thermometer ID: IR11

Date/Time Received: 6/14/16 Initials: CG

Date/Time Logged in: 6/14/16 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?
-		6/14/16	1450	CG	1.1	☒
						☐
						☐
						☐

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:

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#: 359779 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/9/20 09:47

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000491-001	18WW19_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000491-002	18WW20-060320	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000491-003	18CPTMW19_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000491-004	18CPTMW19_060320_a	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000491-005	18CPTMW19SW_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000491-006	18WW08_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000491-007	18WW09_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000491-008	CO9_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000491-009	CO6_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000492-001	18CPTMW22SW_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000492-002	MW20_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000492-003	18CPTMW22DW_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000492-004	18CPTMW22R_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000492-005	18CPTMW26SW_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000492-006	MW8_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000492-007	18WW22_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2000492-008	C04_060120	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2000492-009	C04_060120_a	.01	6850/ClO4 DOD			Ground Water	10mL	
19	EQ2000227-01	MB		6850/ClO4 DOD			Liquid	10mL	
20	EQ2000227-02	LCS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000227-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000227-04	18WW19_060320 MS	.01	6850/ClO4 DOD			Liquid	10mL	
23	EQ2000227-05	18WW19_060320 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

EQ2000227-02 100.00µL EQ2000227-03 100.00µL EQ2000227-04 100.00µL EQ2000227-05 100.00µL

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

E2000491-001 1.00µL E2000491-002 1.00µL E2000491-003 1.00µL E2000491-004 1.00µL E2000491-005 1.00µL E2000491-006 1.00µL
E2000491-007 1.00µL E2000491-008 1.00µL E2000491-009 1.00µL E2000492-001 1.00µL E2000492-002 1.00µL E2000492-003 1.00µL
E2000492-004 1.00µL E2000492-005 1.00µL E2000492-006 1.00µL E2000492-007 1.00µL E2000492-008 1.00µL E2000492-009 1.00µL
EQ2000227-01 1.00µL EQ2000227-02 1.00µL EQ2000227-03 1.00µL EQ2000227-04 1.00µL EQ2000227-05 1.00µL

Preparation Information Benchsheet

Prep Run#: 359779
Team: Semivoa GCMS/GRIVERA
Prep WorkFlow: GenExt28Day
Prep Method: Method
Status: Prepped
Prep Date/Time: 6/9/20 09:47

Preparation Steps

Step: Preparation
Started: 6/9/20 09:47
Finished: 6/9/20 13:43
By: GRIVERA
Comments

Comments: _____

Reviewed By: GR Date: 6/10/20

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:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 0735
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW19_060320	**Units:**	µg/L
Lab Code:	E2000491-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:43	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 0825
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW20-060320	**Units:**	µg/L
Lab Code:	E2000491-002	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:51	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 0920
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW19_060320	**Units:**	µg/L
Lab Code:	E2000491-003	**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	**16.6**		0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:59	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 0920
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW19_060320_a	**Units:**	µg/L
Lab Code:	E2000491-004	**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	**17.8**		0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 17:07	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 1015
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18CPTMW19SW_060320	**Units:**	µg/L
Lab Code:	E2000491-005	**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	**45.5**		0.200	0.100	0.0500	2	6/ 9/20	6/16/20 13:59	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 1110
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW08_060320	**Units:**	µg/L
Lab Code:	E2000491-006	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.425**		0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 17:36	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 1200
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW09_060320	**Units:**	µg/L
Lab Code:	E2000491-007	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 17:44	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 1300
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	CO9_060320	**Units:**	µg/L
Lab Code:	E2000491-008	**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	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 17:51	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 1350
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	CO6_060320	**Units:**	µg/L
Lab Code:	E2000491-009	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 17:59	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000227-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:04	359779	683807	

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:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/16/20 - 6/16/20
Sample Matrix:	Ground Water		

Lab Control Sample Summary

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	359779

	Lab Control Sample EQ2000227-02			Duplicate Lab Control Sample EQ2000227-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.102	0.100	102	0.0926	0.100	93	84 - 119	10	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:**	E2000491
Project:	HS20060202	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000227-02	**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	**0.102**		0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 13:43	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000227-03	**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	**0.0926**	J	0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:19	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/3/20
Sample Matrix:	Ground Water	**Date Received:**	6/4/20
		Date Analyzed:	6/15/20

Matrix Spike Summary

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

Sample Name:	18WW19_060320	**Units:**	µg/L
Lab Code:	E2000491-001	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		18WW19_060320MS				18WW19_060320DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000227-04				EQ2000227-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.104	0.100	104		0.102	0.100	102	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:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 0735
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW19_060320	**Units:**	µg/L
Lab Code:	EQ2000227-04	**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	**0.104**		0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:27	359779	683807	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Collected:**	6/ 3/20 0735
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	18WW19_060320	**Units:**	µg/L
Lab Code:	EQ2000227-05	**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	**0.102**		0.100	0.0500	0.0250	1	6/ 9/20	6/15/20 16:35	359779	683807	

Initial Calibration

ALS Environmental - Houston HRMS
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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

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

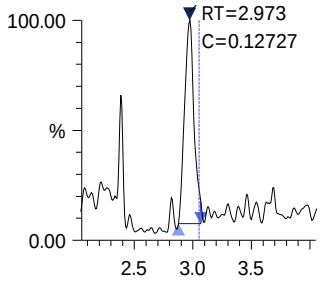
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	6/2/2020 3:37:49 PM	2231	0.12727	20200602_009	2.973	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE1	6/2/2020 3:37:49 PM	137060	1.00000	20200602_009	2.954	25.0000	1.0000	4

Perchlorate

Conc 0.12727

Area 2231

Q 99.00>83.00 (-) 4.13e2

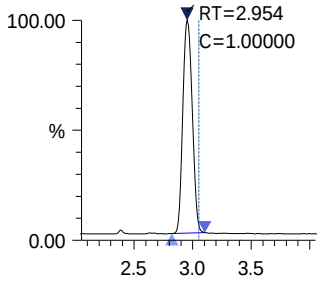


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 137060

ISTD 107.00>89.00 (-) 2.48e4



ALS Group Houston

PERCHLORATE2

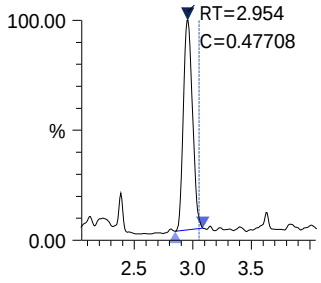
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

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

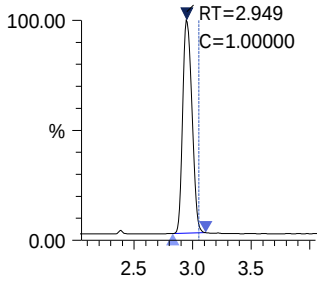
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



ALS Group Houston

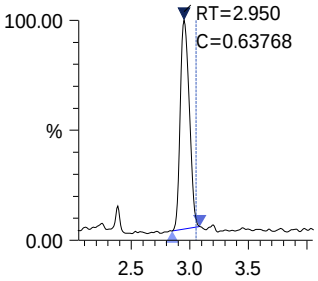
PERCHLORATE3

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

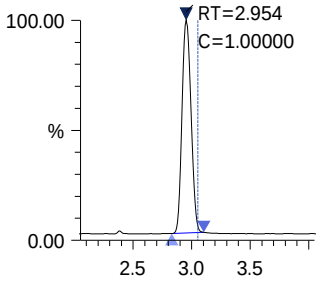
Perchlorate

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

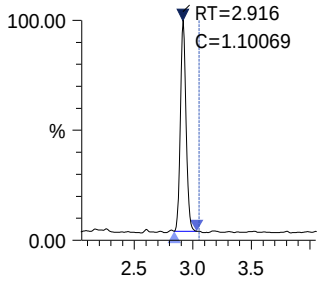
PERCHLORATE4

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

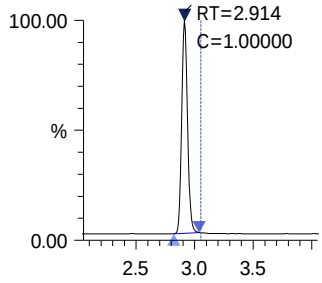
Perchlorate

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

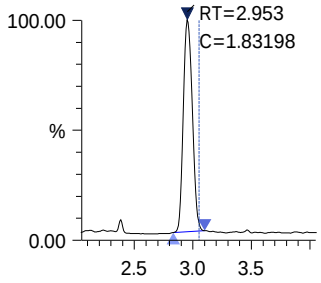
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/2/2020 4:13:21 PM	33971	1.83198	20200602_013	2.953	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/2/2020 4:13:21 PM	144982	1.00000	20200602_013	2.953	25.0000	1.0000	8

Perchlorate

Conc 1.83198

Area 33971

Q 99.00>83.00 (-) 6.29e3

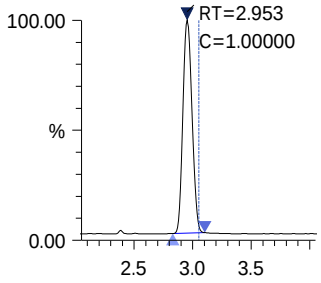


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 144982

ISTD 107.00>89.00 (-) 2.71e4



ALS Group Houston

PERCHLORATE6

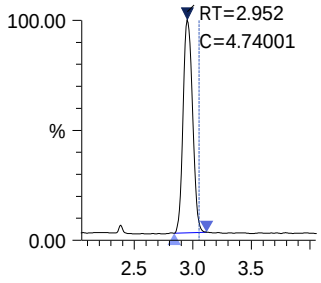
Date acquired: 6/2/2020 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_014.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

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

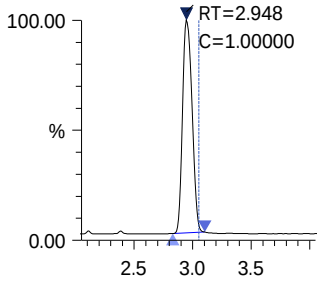
Q 99.00>83.00 (-) 1.50e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 140500

ISTD 107.00>89.00 (-) 2.51e4



ALS Group Houston

PERCHLORATE7

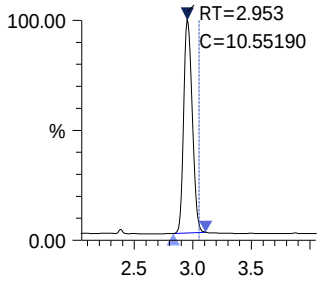
Date acquired: 6/2/2020 4:29:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_015.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

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

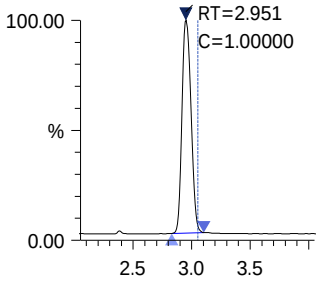
Q 99.00>83.00 (-) 3.36e4



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

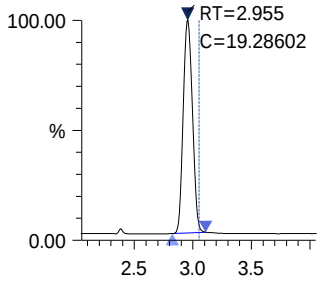
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	6/2/2020 4:37:02 PM	324944	19.28602	20200602_016	2.955	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	6/2/2020 4:37:02 PM	131734	1.00000	20200602_016	2.953	25.0000	1.0000	11

Perchlorate

Conc 19.28602

Area 324944

Q 99.00>83.00 (-) 5.85e4

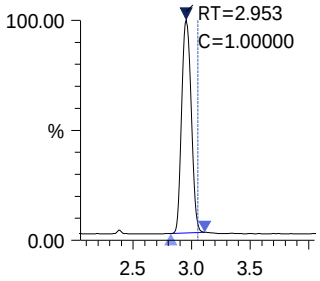


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 131734

ISTD 107.00>89.00 (-) 2.34e4



ALS Group Houston

PERCHLORATE9

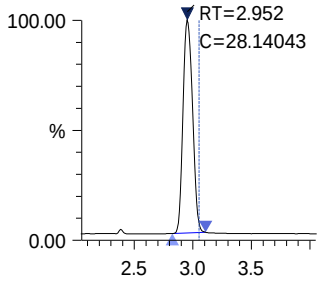
Date acquired: 6/2/2020 4:44:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

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

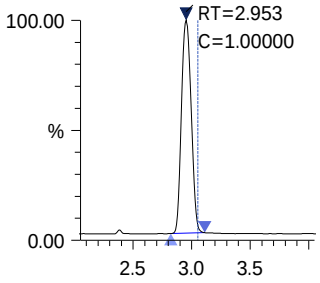
Q 99.00>83.00 (-) 8.16e4



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

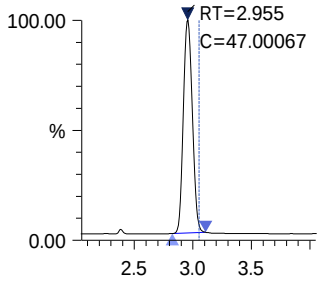
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	6/2/2020 4:52:49 PM	737362	47.00067	20200602_018	2.955	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	6/2/2020 4:52:49 PM	122661	1.00000	20200602_018	2.952	25.0000	1.0000	13

Perchlorate

Conc 47.00067

Area 737362

Q 99.00>83.00 (-) 1.36e5

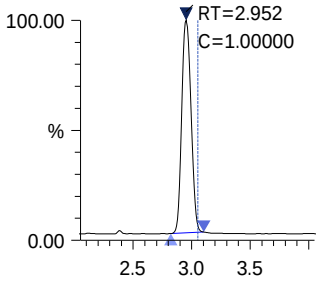


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

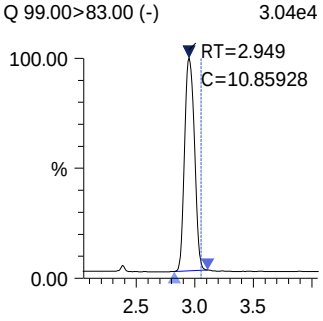
PERCHLORATEICV

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

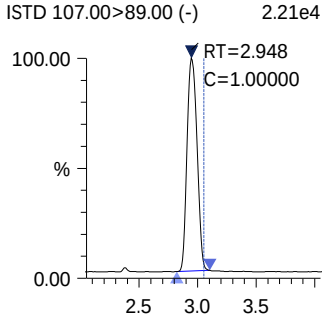
Perchlorate

Conc 10.85928
Area 180334



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 129839



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

20200615

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		20200615_001	Perchlorate6850b.lcm	1x	☒	
	null		20200615_002	Perchlorate6850b.lcm	1x	☒	
	null		20200615_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_005	Perchlorate6850b.lcm	1x	☒	
	LODV		20200615_006	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-02		20200615_007	Perchlorate6850b.lcm	1x	☒	do not use
	ICAL 1		20200615_008	Perchlorate6850b.lcm	1x	☒	do not use
	LODV		20200615_009	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-02		20200615_012	Perchlorate6850b.lcm	1x	☒	do not use
	LODV		20200615_013	Perchlorate6850b.lcm	1x	☒	do not use
	LODV		20200615_014	Perchlorate6850b.lcm	1x	☒	do not use
	IB		20200615_015	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_016	Perchlorate6850b.lcm	1x	☒	
	IB		20200615_017	Perchlorate6850b.lcm	1x	☒	
	LODV		20200615_018	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_019	Perchlorate6850b.lcm	1x	☒	3100807-04
	LODV		20200615_020	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-01		20200615_021	Perchlorate6850b.lcm	1x	☒	
	EQ2000215-02		20200615_022	Perchlorate6850b.lcm	1x	☒	do not use
	EQ2000215-03		20200615_023	Perchlorate6850b.lcm	1x	☒	
	E2000473-001		20200615_024	Perchlorate6850b.lcm	1x	☒	
	ICS		20200615_025	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_026	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000215-02		20200615_027	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-01		20200615_028	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200615_029	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-03		20200615_030	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-04		20200615_031	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-05		20200615_032	Perchlorate6850b.lcm	1x	☒	
	E2000491-001		20200615_033	Perchlorate6850b.lcm	1x	☒	
	E2000491-002		20200615_034	Perchlorate6850b.lcm	1x	☒	
	E2000491-003		20200615_035	Perchlorate6850b.lcm	1x	☒	
	E2000491-004		20200615_036	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_037	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000491-005		20200615_038	Perchlorate6850b.lcm	1x	☒	reanalyze @ 2X
	E2000491-006		20200615_039	Perchlorate6850b.lcm	1x	☒	reanalyze
	E2000491-007		20200615_040	Perchlorate6850b.lcm	1x	☒	
	E2000491-008		20200615_041	Perchlorate6850b.lcm	1x	☒	
	E2000491-009		20200615_042	Perchlorate6850b.lcm	1x	☒	
	E2000492-001		20200615_043	Perchlorate6850b.lcm	1x	☒	reanalyze @ 10X
	E2000492-002		20200615_044	Perchlorate6850b.lcm	1x	☒	
	E2000492-003		20200615_045	Perchlorate6850b.lcm	1x	☒	
	E2000492-004		20200615_046	Perchlorate6850b.lcm	1x	☒	
	E2000492-005		20200615_047	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_048	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000492-006		20200615_049	Perchlorate6850b.lcm	1x	☒	reanalyze @ 50X
	E2000492-007		20200615_050	Perchlorate6850b.lcm	1x	☒	reanalyze
	E2000492-008		20200615_051	Perchlorate6850b.lcm	1x	☒	reanalyze
	E2000492-009		20200615_052	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200615_053	Perchlorate6850b.lcm	1x	☒	3100807-04

20200616

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		20200616_001	Perchlorate6850b.lcm	1x	☒	
	null		20200616_002	Perchlorate6850b.lcm	1x	☒	
	null		20200616_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_005	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_006	Perchlorate6850b.lcm	1x	☒	
	LODV		20200616_007	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_008	Perchlorate6850b.lcm	1x	☒	3100807-04
	ICS		20200616_009	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_010	Perchlorate6850b.lcm	1x	☒	
	E2000491-006[DNU]		20200616_011	Perchlorate6850b.lcm	1x	☒	do not use
	E2000492-004		20200616_012	Perchlorate6850b.lcm	1x	☒	
	E2000492-005		20200616_013	Perchlorate6850b.lcm	1x	☒	
	E2000492-007		20200616_014	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_015	Perchlorate6850b.lcm	1x	☒	
	E2000492-008RR		20200616_016	Perchlorate6850b.lcm	1x	☒	
	E2000491-005X2		20200616_017	Perchlorate6850b.lcm	2x	☒	
	E2000492-001X10		20200616_018	Perchlorate6850b.lcm	10x	☒	
	PERCHLORATE7		20200616_019	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000492-006X50		20200616_020	Perchlorate6850b.lcm	50x	☒	
	EQ2000228-01		20200616_021	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-02		20200616_022	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-03		20200616_023	Perchlorate6850b.lcm	1x	☒	
	E2000493-001		20200616_024	Perchlorate6850b.lcm	1x	☒	
	E2000493-002		20200616_025	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_026	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/15/20

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\20200615\20200615_026	**Calibration ID:**	EC2000007
		Analysis Lot:	683807
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.2	0.1279	0.1428	11.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/15/20

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\20200615\20200615_037	**Calibration ID:**	EC2000007
		Analysis Lot:	683807
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279	0.1382	8.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/15/20

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\20200615\20200615_048	**Calibration ID:**	EC2000007
		Analysis Lot:	683807
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1279	0.1363	6.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/16/20

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\20200616\20200616_008	**Calibration ID:**	EC2000007
		Analysis Lot:	683807
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1279	0.1366	6.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/16/20

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\20200616\20200616_019	**Calibration ID:**	EC2000007
		Analysis Lot:	683807
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	0.1279	0.1346	5.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/16/20

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\20200616\20200616_026	**Calibration ID:**	EC2000007
		Analysis Lot:	683807
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	0.1279	0.1361	6.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/15/20 15:44

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

File ID:	I:\LCMS01\DATA\20200615\20200615_026	**Lab Code:**	EQ2000236-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-01	116,446	3.04
Method Blank	EQ2000227-01	132,215	3.04
Duplicate Lab Control Sample	EQ2000227-03	142,110	3.04
18WW19_060320MS	EQ2000227-04	137,277	3.04
18WW19_060320DMS	EQ2000227-05	137,768	3.04
18WW19_060320	E2000491-001	137,049	3.04
18WW20-060320	E2000491-002	145,668	3.04
18CPTMW19_060320	E2000491-003	131,379	3.04
18CPTMW19_060320_a	E2000491-004	121,239	3.04

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:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/15/20 17:15

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

File ID:	I:\LCMS01\DATA\20200615\20200615_037	**Lab Code:**	EQ2000236-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-02	123,220	3.04
18WW08_060320	E2000491-006	200,790	3.02
18WW09_060320	E2000491-007	151,598	3.03
CO9_060320	E2000491-008	155,180	3.02
CO6_060320	E2000491-009	149,001	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:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/15/20 18:47

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

File ID:	I:\LCMS01\DATA\20200615\20200615_048	**Lab Code:**	EQ2000236-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-03	118,003	3.04

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:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/16/20 12:44

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

File ID:	I:\LCMS01\DATA\20200616\20200616_008	**Lab Code:**	EQ2000236-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-04	112,993	3.04
Lab Control Sample	EQ2000227-02	143,312	2.99
18CPTMW19SW_060320	E2000491-005	174,530	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:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/16/20 14:15

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

File ID:	I:\LCMS01\DATA\20200616\20200616_019	**Lab Code:**	EQ2000236-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-05	121,207	3.04

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:**	E2000491
Project:	HS20060202	**Date Analyzed:**	6/16/20 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\20200616\20200616_026	**Lab Code:**	EQ2000236-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683807
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	EQ2000236-06	116,422	2.99

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

ALS Group Houston

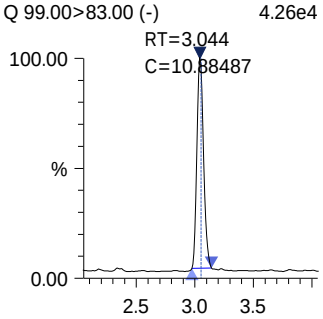
PERCHLORATE7

Date acquired: 6/15/2020 3:44:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_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	6/15/2020 3:44:28 PM	162113	10.88487	20200615_026	3.044	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/15/2020 3:44:28 PM	116446	1.00000	20200615_026	3.042	25.0000	1.0000	4

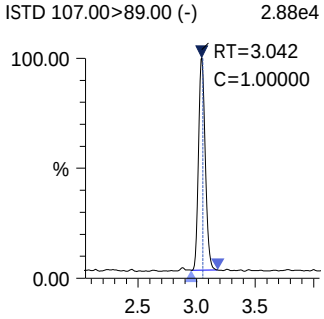
Perchlorate

Conc 10.88487
Area 162113



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 116446



ALS Group Houston

EQ2000227-01

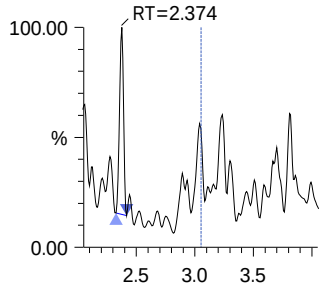
Date acquired: 6/15/2020 4:04:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_028.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-01	6/15/2020 4:04:03 PM	----	----	20200615_028	----	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	EQ2000227-01	6/15/2020 4:04:03 PM	132215	1.00000	20200615_028	3.042	25.0000	1.0000	10

Perchlorate

Conc ----
Area ----

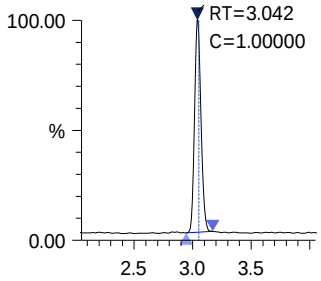
Q 99.00>83.00 (-) 8.01e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 132215

ISTD 107.00>89.00 (-) 3.41e4



ALS Group Houston

EQ2000227-03

Date acquired: 6/15/2020 4:19:53 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_030.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

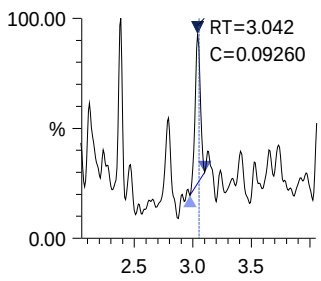
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-03	6/15/2020 4:19:53 PM	1683	0.09260	20200615_030	3.042	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	EQ2000227-03	6/15/2020 4:19:53 PM	142110	1.00000	20200615_030	3.044	25.0000	1.0000	12

Perchlorate

Conc 0.09260

Area 1683

Q 99.00>83.00 (-) 8.01e2

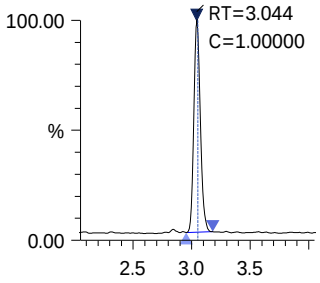


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 142110

ISTD 107.00>89.00 (-) 3.64e4



ALS Group Houston

EQ2000227-04

Date acquired: 6/15/2020 4:27:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_031.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

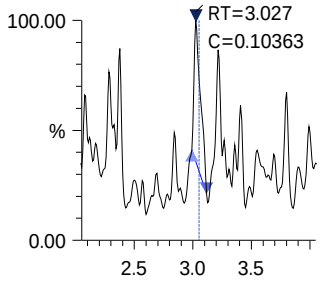
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-04	6/15/2020 4:27:49 PM	1820	0.10363	20200615_031	3.027	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	EQ2000227-04	6/15/2020 4:27:49 PM	137277	1.00000	20200615_031	3.036	25.0000	1.0000	13

Perchlorate

Conc 0.10363

Area 1820

Q 99.00>83.00 (-) 7.21e2

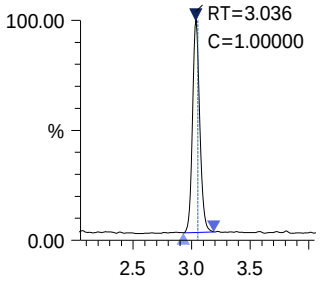


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 137277

ISTD 107.00>89.00 (-) 3.16e4



ALS Group Houston

EQ2000227-05

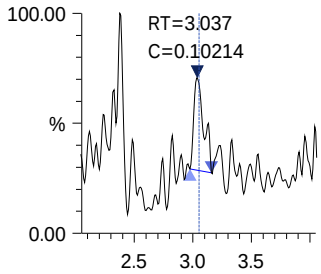
Date acquired: 6/15/2020 4:35:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_032.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000227-05	6/15/2020 4:35:44 PM	1800	0.10214	20200615_032	3.037	25.0000	1.0000	14
Sodium Perchlorate-18O4_IS	EQ2000227-05	6/15/2020 4:35:44 PM	137768	1.00000	20200615_032	3.035	25.0000	1.0000	14

Perchlorate

Conc 0.10214
Area 1800

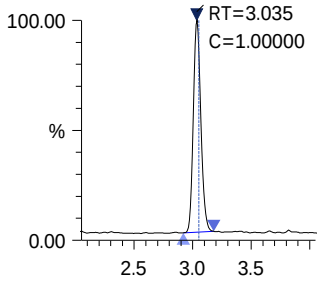
Q 99.00>83.00 (-) 7.10e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 137768

ISTD 107.00>89.00 (-) 3.05e4



ALS Group Houston

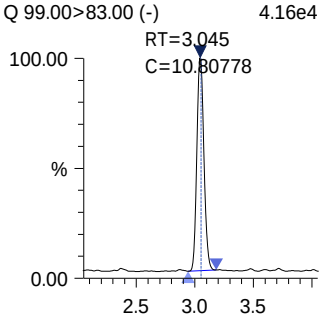
PERCHLORATE7

Date acquired: 6/15/2020 5:15:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200615\20200615_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	6/15/2020 5:15:20 PM	170329	10.80778	20200615_037	3.045	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/15/2020 5:15:20 PM	123220	1.00000	20200615_037	3.043	25.0000	1.0000	4

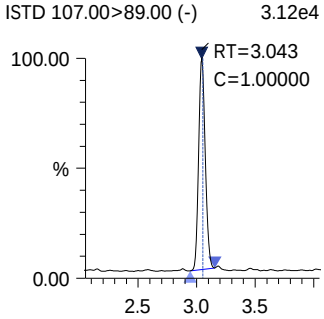
Perchlorate

Conc 10.80778
Area 170329



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 123220



ALS Group Houston

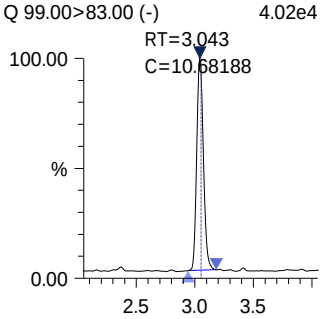
PERCHLORATE7

Date acquired: 6/16/2020 12:44:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_008.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	6/16/2020 12:44:46 PM	154372	10.68188	20200616_008	3.043	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 12:44:46 PM	112993	1.00000	20200616_008	3.040	25.0000	1.0000	4

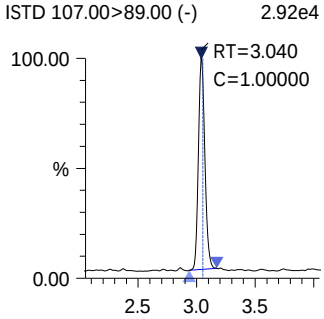
Perchlorate

Conc 10.68188
Area 154372



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 112993



ALS Group Houston

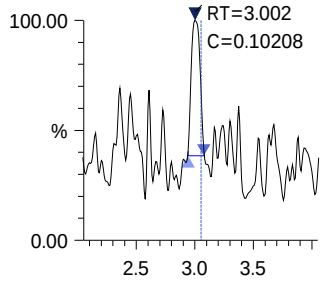
EQ2000227-02

Date acquired: 6/16/2020 1:43:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_015.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	EQ2000227-02	6/16/2020 1:43:10 PM	1871	0.10208	20200616_015	3.002	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	EQ2000227-02	6/16/2020 1:43:10 PM	143312	1.00000	20200616_015	2.993	25.0000	1.0000	11

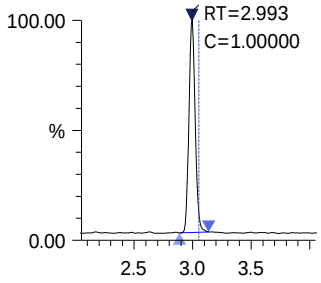
Perchlorate

Conc 0.10208
Area 1871
Q 99.00>83.00 (-) 5.66e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 143312
ISTD 107.00>89.00 (-) 3.87e4



ALS Group Houston

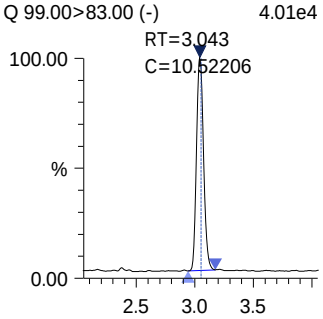
PERCHLORATE7

Date acquired: 6/16/2020 2:15:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_019.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	6/16/2020 2:15:37 PM	163116	10.52206	20200616_019	3.043	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 2:15:37 PM	121207	1.00000	20200616_019	3.039	25.0000	1.0000	4

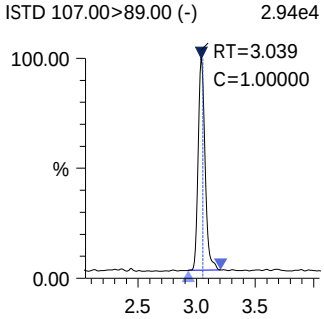
Perchlorate

Conc 10.52206
Area 163116



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 121207



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June 19, 2020

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

Work Order: **HS20060208**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 5 sample(s) on Jun 04, 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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060208

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060208-01	102_060320	Groundwater		03-Jun-2020 08:00	04-Jun-2020 09:10	☐
HS20060208-02	129_060320	Groundwater		03-Jun-2020 09:15	04-Jun-2020 09:10	☐
HS20060208-03	120_060320	Groundwater		03-Jun-2020 10:25	04-Jun-2020 09:10	☐
HS20060208-04	MW14_060320	Groundwater		03-Jun-2020 11:40	04-Jun-2020 09:10	☐
HS20060208-05	Trip Blank	Water	CG 042320 -31	04-Jun-2020 00:00	04-Jun-2020 09:10	☐

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060208

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: 154163

Sample ID: 120_060320 (HS20060208-03)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 129_060320 (HS20060208-02)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: MW14_060320 (HS20060208-04)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: LCSD-154163

• LCS/LCSD RPD was above the RPD limit surrogate Nitrobenzene-d5.

GCMS Volatiles by Method SW8260

Batch ID: R362787

Sample ID: CCV

• 1,2,3_Trichlorobenzene and Naphthalene exceeded %D limits for CCV. Samples are ND for these compounds.

Sample ID: VLCSW-200607

• 1,2-Dibromo-3-Chloropropane and 1,2,3-Trichlorobenzene exceeded QC limits for LCS.

Sample ID: HS20060202-01MS

• MS and MSD are for an unrelated sample

Batch ID: R362867

Sample ID: CCV

• 1,2-Dibromo-3-Chloropropane, 1,2,3-Trichlorobenzene and Naphthalene exceeded %D limits for CCV; associated samples in the batch are non-detect for these compounds.

Sample ID: VLCSW-200608

• 1,2-Dibromo-3-Chloropropane, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene and Naphthalene exceeded QC limits for LCS; samples in HS2006208 are non-detect.

Sample ID: HS20060251-02MS

• MS and MSD are for an unrelated sample.

Metals by Method SW7470

Batch ID: 154514

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060208

CASE NARRATIVE

Metals by Method SW7470

Metals by Method SW6020

Batch ID: 154143

Sample ID: HS20060202-01MS

• MS and MSD are for an unrelated sample.

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 102_060320
Collection Date: 03-Jun-2020 08:00

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-01
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	07-Jun-2020 20:19
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 20:19
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 20:19
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 20:19
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 20:19
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 20:19
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 102_060320
Collection Date: 03-Jun-2020 08:00

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-01
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	07-Jun-2020 20:19
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 20:19
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 20:19
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:19
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:19
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:19
Surr: 1,2-Dichloroethane-d4	*85.1*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 20:19*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 20:19*
Surr: Dibromofluoromethane	*90.2*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 20:19*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 20:19*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 102_060320
Collection Date: 03-Jun-2020 08:00

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**4.29**		**0.0180**	**0**	**0.100**	**mg/L**	10	13-Jun-2020 01:10
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 12:59
Arsenic	**0.00155**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Barium	**0.166**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Beryllium	**0.000696**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 12:59
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:59
Calcium	**2.44**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 12:59
Chromium	**0.00579**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Cobalt	**0.00443**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Copper	**0.00701**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Iron	**6.79**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:59
Lead	**0.00583**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Magnesium	**2.50**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:59
Manganese	**0.0508**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Nickel	**0.0131**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Potassium	**1.10**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:59
Selenium	**0.00206**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 12:59
Sodium	**21.7**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 12:59
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 12:59
Vanadium	**0.0119**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
Zinc	**0.0394**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 12:59
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	**0.0000490**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	16-Jun-2020 17:11
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 129_060320
Collection Date: 03-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
1,1-Dichloroethene	**0.69**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	07-Jun-2020 20:43
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,2-Dichloroethane	**12**		**0.20**	**0.50**	**1.0**	**UG/L**	1	07-Jun-2020 20:43
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 20:43
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 20:43
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 20:43
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 20:43
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 20:43
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Chloroform	**2.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	07-Jun-2020 20:43

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 129_060320
Collection Date: 03-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-02
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	07-Jun-2020 20:43
cis-1,2-Dichloroethene	**3.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	07-Jun-2020 20:43
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 20:43
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 20:43
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 20:43
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 20:43
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
Trichloroethene	**450**		**2.0**	**5.0**	**10**	**UG/L**	10	07-Jun-2020 21:07
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 20:43
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 20:43
Surr: 1,2-Dichloroethane-d4	*87.3*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 20:43*
Surr: 1,2-Dichloroethane-d4	*84.9*			**0**	*81-118*	*%REC*	*10*	*07-Jun-2020 21:07*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 20:43*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*10*	*07-Jun-2020 21:07*
Surr: Dibromofluoromethane	*90.6*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 20:43*
Surr: Dibromofluoromethane	*88.0*			**0**	*80-119*	*%REC*	*10*	*07-Jun-2020 21:07*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*10*	*07-Jun-2020 21:07*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 20:43*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**3.3**		**1.0**	**1.0**	**1.0**	**ug/L**	100	18-Jun-2020 20:18
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*18-Jun-2020 20:18*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*18-Jun-2020 20:18*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*18-Jun-2020 20:18*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 129_060320
Collection Date: 03-Jun-2020 09:15

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**1.38**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 13:02
Antimony	**0.000844**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Arsenic	**0.000834**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Barium	**0.0934**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 13:02
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 13:02
Calcium	**3.33**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 13:02
Chromium	**0.00413**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Cobalt	**0.00238**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Copper	**0.00293**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Iron	**1.80**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:02
Lead	**0.00163**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Magnesium	**2.39**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:02
Manganese	**0.0464**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Nickel	**0.00357**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Potassium	**0.330**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:02
Selenium	**0.00200**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 13:02
Sodium	**55.8**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:02
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 13:02
Vanadium	**0.00415**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
Zinc	**0.0162**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:02
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 17:12
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 120_060320
Collection Date: 03-Jun-2020 10:25

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-03
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	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,1,1-Trichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,1-Dichloroethane	**8.0**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 21:31
1,1-Dichloroethene	**58**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 21:31
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,2-Dibromo-3-chloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
1,2-Dibromoethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,2-Dichloroethane	**15**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 21:31
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
2,2-Dichloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
2-Butanone	5.0	U	2.5	5.0	10	UG/L	5	07-Jun-2020 21:31
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
2-Hexanone	10	U	5.0	10	10	UG/L	5	07-Jun-2020 21:31
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
4-Methyl-2-pentanone	10	U	3.5	10	10	UG/L	5	07-Jun-2020 21:31
Acetone	5.0	U	2.0	5.0	10	UG/L	5	07-Jun-2020 21:31
Benzene	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
Bromobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Bromochloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
Bromodichloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
Bromoform	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Bromomethane	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Carbon disulfide	5.0	U	3.0	5.0	10	UG/L	5	07-Jun-2020 21:31
Carbon tetrachloride	5.0	U	2.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Chlorobenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Chloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Chloroform	**12**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 21:31

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 120_060320
Collection Date: 03-Jun-2020 10:25

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
cis-1,2-Dichloroethene	**590**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 21:31
cis-1,3-Dichloropropene	2.5	U	0.50	2.5	5.0	UG/L	5	07-Jun-2020 21:31
Dibromochloromethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Dibromomethane	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Ethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Isopropylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
m,p-Xylene	5.0	U	2.5	5.0	10	UG/L	5	07-Jun-2020 21:31
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	07-Jun-2020 21:31
n-Butylbenzene	5.0	U	2.0	5.0	5.0	UG/L	5	07-Jun-2020 21:31
n-Propylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Naphthalene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
o-Xylene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Styrene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Tetrachloroethene	**3.4**	J	**1.5**	**5.0**	**5.0**	**UG/L**	5	07-Jun-2020 21:31
Toluene	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
trans-1,2-Dichloroethene	**5.1**		**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 21:31
trans-1,3-Dichloropropene	2.5	U	1.0	2.5	5.0	UG/L	5	07-Jun-2020 21:31
Trichloroethene	**6,100**		**10**	**25**	**50**	**UG/L**	50	07-Jun-2020 21:55
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	07-Jun-2020 21:31
Vinyl chloride	**4.0**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	07-Jun-2020 21:31
Surr: 1,2-Dichloroethane-d4	*86.8*			**0**	*81-118*	*%REC*	*5*	*07-Jun-2020 21:31*
Surr: 1,2-Dichloroethane-d4	*85.4*			**0**	*81-118*	*%REC*	*50*	*07-Jun-2020 21:55*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*5*	*07-Jun-2020 21:31*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*50*	*07-Jun-2020 21:55*
Surr: Dibromofluoromethane	*89.2*			**0**	*80-119*	*%REC*	*5*	*07-Jun-2020 21:31*
Surr: Dibromofluoromethane	*88.5*			**0**	*80-119*	*%REC*	*50*	*07-Jun-2020 21:55*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*5*	*07-Jun-2020 21:31*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*50*	*07-Jun-2020 21:55*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**52**		**10**	**10**	**10**	**ug/L**	1000	18-Jun-2020 20:37
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*1000*	*18-Jun-2020 20:37*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*1000*	*18-Jun-2020 20:37*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*1000*	*18-Jun-2020 20:37*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 120_060320
Collection Date: 03-Jun-2020 10:25

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW14_060320
Collection Date: 03-Jun-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-04
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	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	08-Jun-2020 15:51
1,1,2-Trichloroethane	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
1,1-Dichloroethane	**21**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jun-2020 15:51
1,1-Dichloroethene	**80**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jun-2020 15:51
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	08-Jun-2020 15:51
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	08-Jun-2020 15:51
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	08-Jun-2020 15:51
1,2-Dichloroethane	**73**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jun-2020 15:51
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	08-Jun-2020 15:51
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
2-Butanone	10	U	5.0	10	20	UG/L	10	08-Jun-2020 15:51
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
2-Hexanone	20	U	10	20	20	UG/L	10	08-Jun-2020 15:51
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	08-Jun-2020 15:51
Acetone	10	U	4.0	10	20	UG/L	10	08-Jun-2020 15:51
Benzene	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
Bromobenzene	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
Bromoform	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
Bromomethane	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
Carbon disulfide	10	U	6.0	10	20	UG/L	10	08-Jun-2020 15:51
Carbon tetrachloride	10	U	5.0	10	10	UG/L	10	08-Jun-2020 15:51
Chlorobenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Chloroethane	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Chloroform	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW14_060320
Collection Date: 03-Jun-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-04
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-Jun-2020 15:51
cis-1,2-Dichloroethene	**1,500**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jun-2020 15:51
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	08-Jun-2020 15:51
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Ethylbenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	08-Jun-2020 15:51
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
m,p-Xylene	10	U	5.0	10	20	UG/L	10	08-Jun-2020 15:51
Methylene chloride	10	U	4.0	10	20	UG/L	10	08-Jun-2020 15:51
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	08-Jun-2020 15:51
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Naphthalene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
o-Xylene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Styrene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Toluene	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
trans-1,2-Dichloroethene	**14**		**2.0**	**5.0**	**10**	**UG/L**	10	08-Jun-2020 15:51
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
Trichloroethene	**7,700**		**20**	**50**	**100**	**UG/L**	100	08-Jun-2020 17:03
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	08-Jun-2020 15:51
Vinyl chloride	5.0	U	2.0	5.0	10	UG/L	10	08-Jun-2020 15:51
Surr: 1,2-Dichloroethane-d4	*85.0*			**0**	*81-118*	*%REC*	*10*	*08-Jun-2020 15:51*
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*100*	*08-Jun-2020 17:03*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*10*	*08-Jun-2020 15:51*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*100*	*08-Jun-2020 17:03*
Surr: Dibromofluoromethane	*88.0*			**0**	*80-119*	*%REC*	*10*	*08-Jun-2020 15:51*
Surr: Dibromofluoromethane	*88.6*			**0**	*80-119*	*%REC*	*100*	*08-Jun-2020 17:03*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*10*	*08-Jun-2020 15:51*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*100*	*08-Jun-2020 17:03*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**950**		**50**	**50**	**50**	**ug/L**	5000	18-Jun-2020 20:57
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*5000*	*18-Jun-2020 20:57*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*5000*	*18-Jun-2020 20:57*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*5000*	*18-Jun-2020 20:57*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW14_060320
Collection Date: 03-Jun-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0323**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	17-Jun-2020 13:04
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	17-Jun-2020 13:04
Arsenic	**0.00378**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:04
Barium	**0.247**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:04
Beryllium	**0.000533**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 13:04
Cadmium	**0.000906**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	17-Jun-2020 13:04
Calcium	**107**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	17-Jun-2020 13:04
Chromium	**0.0359**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:04
Cobalt	**0.0343**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	17-Jun-2020 13:04
Copper	**0.00219**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:04
Iron	**102**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:04
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 13:04
Magnesium	**55.2**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:04
Manganese	**2.55**		**0.00700**	**0.0250**	**0.0500**	**mg/L**	10	13-Jun-2020 01:14
Nickel	**0.153**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	17-Jun-2020 13:04
Potassium	**11.2**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	17-Jun-2020 13:04
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	17-Jun-2020 13:04
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	17-Jun-2020 13:04
Sodium	**240**		**0.140**	**0.500**	**2.00**	**mg/L**	10	13-Jun-2020 01:14
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	17-Jun-2020 13:04
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	17-Jun-2020 13:04
Zinc	**0.806**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	17-Jun-2020 13:04
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 16-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	16-Jun-2020 17:14
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	18-Jun-2020 15:50

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 04-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 17:07
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	07-Jun-2020 17:07
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	07-Jun-2020 17:07
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 17:07
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	07-Jun-2020 17:07
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 04-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060208
Lab ID:HS20060208-05
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	07-Jun-2020 17:07
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	07-Jun-2020 17:07
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	07-Jun-2020 17:07
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	07-Jun-2020 17:07
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	07-Jun-2020 17:07
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	07-Jun-2020 17:07
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*1*	*07-Jun-2020 17:07*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*07-Jun-2020 17:07*
Surr: Dibromofluoromethane	*87.8*			**0**	*80-119*	*%REC*	*1*	*07-Jun-2020 17:07*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*07-Jun-2020 17:07*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

Batch ID: 154143 **Start Date:** 05 Jun 2020 10:00 **End Date:** 05 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060208-01		10 (mL)	10 (mL)	1
HS20060208-02		10 (mL)	10 (mL)	1
HS20060208-04		10 (mL)	10 (mL)	1

Batch ID: 154163 **Start Date:** 05 Jun 2020 10:30 **End Date:** 05 Jun 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
HS20060208-02	1	1000 (mL)	1 (mL)	0.001
HS20060208-03	1	1000 (mL)	1 (mL)	0.001
HS20060208-04	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154514 **Start Date:** 16 Jun 2020 11:00 **End Date:** 16 Jun 2020 13:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060208-01		10 (mL)	10 (mL)	1
HS20060208-02		10 (mL)	10 (mL)	1
HS20060208-04		10 (mL)	10 (mL)	1

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154143 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060208-01	102_060320	03 Jun 2020 08:00		05 Jun 2020 14:00	17 Jun 2020 12:59	1
HS20060208-01	102_060320	03 Jun 2020 08:00		05 Jun 2020 14:00	13 Jun 2020 01:10	10
HS20060208-02	129_060320	03 Jun 2020 09:15		05 Jun 2020 14:00	17 Jun 2020 13:02	1
HS20060208-04	MW14_060320	03 Jun 2020 11:40		05 Jun 2020 14:00	17 Jun 2020 13:04	1
HS20060208-04	MW14_060320	03 Jun 2020 11:40		05 Jun 2020 14:00	13 Jun 2020 01:14	10
Batch ID: 154163 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060208-02	129_060320	03 Jun 2020 09:15		05 Jun 2020 13:59	18 Jun 2020 20:18	100
HS20060208-03	120_060320	03 Jun 2020 10:25		05 Jun 2020 13:59	18 Jun 2020 20:37	1000
HS20060208-04	MW14_060320	03 Jun 2020 11:40		05 Jun 2020 13:59	18 Jun 2020 20:57	5000
Batch ID: 154514 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060208-01	102_060320	03 Jun 2020 08:00		16 Jun 2020 11:00	16 Jun 2020 17:11	1
HS20060208-02	129_060320	03 Jun 2020 09:15		16 Jun 2020 11:00	16 Jun 2020 17:12	1
HS20060208-04	MW14_060320	03 Jun 2020 11:40		16 Jun 2020 11:00	16 Jun 2020 17:14	1
Batch ID: R362787 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060208-05	Trip Blank	04 Jun 2020 00:00			07 Jun 2020 17:07	1
Batch ID: R362787 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060208-01	102_060320	03 Jun 2020 08:00			07 Jun 2020 20:19	1
HS20060208-02	129_060320	03 Jun 2020 09:15			07 Jun 2020 21:07	10
HS20060208-02	129_060320	03 Jun 2020 09:15			07 Jun 2020 20:43	1
HS20060208-03	120_060320	03 Jun 2020 10:25			07 Jun 2020 21:55	50
HS20060208-03	120_060320	03 Jun 2020 10:25			07 Jun 2020 21:31	5
Batch ID: R362867 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060208-04	MW14_060320	03 Jun 2020 11:40			08 Jun 2020 17:03	100
HS20060208-04	MW14_060320	03 Jun 2020 11:40			08 Jun 2020 15:51	10
Batch ID: R363524 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060208-01	102_060320	03 Jun 2020 08:00			18 Jun 2020 15:50	1
HS20060208-02	129_060320	03 Jun 2020 09:15			18 Jun 2020 15:50	1
HS20060208-03	120_060320	03 Jun 2020 10:25			18 Jun 2020 15:50	1
HS20060208-04	MW14_060320	03 Jun 2020 11:40			18 Jun 2020 15:50	1

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:54**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622461** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **13-Jun-2020 00:19**
Client ID: Run ID: **ICPMS04_363205** SeqNo: **5618488** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1036	0.0100	0.1	0	104	84 - 117				
Antimony	0.04444	0.00500	0.05	0	88.9	85 - 117				
Arsenic	0.04839	0.00500	0.05	0	96.8	84 - 116				
Barium	0.04305	0.00500	0.05	0	86.1	86 - 114				
Beryllium	0.04253	0.00200	0.05	0	85.1	83 - 121				
Cadmium	0.04548	0.00200	0.05	0	91.0	87 - 115				
Calcium	4.915	0.500	5	0	98.3	87 - 118				
Chromium	0.04599	0.00500	0.05	0	92.0	85 - 116				
Cobalt	0.04668	0.00500	0.05	0	93.4	86 - 115				
Copper	0.04723	0.00500	0.05	0	94.5	85 - 118				
Iron	4.804	0.200	5	0	96.1	87 - 118				
Lead	0.04455	0.00500	0.05	0	89.1	88 - 115				
Magnesium	4.772	0.200	5	0	95.4	83 - 118				
Manganese	0.04766	0.00500	0.05	0	95.3	87 - 115				
Nickel	0.04851	0.00500	0.05	0	97.0	85 - 117				
Potassium	4.928	0.200	5	0	98.6	87 - 115				
Selenium	0.04925	0.00500	0.05	0	98.5	80 - 120				
Thallium	0.04384	0.00200	0.05	0	87.7	82 - 116				
Vanadium	0.04598	0.00500	0.05	0	92.0	86 - 115				
Zinc	0.04946	0.00500	0.05	0	98.9	83 - 119				

LCS Sample ID: **LCS-154143** Units: **mg/L** Analysis Date: **17-Jun-2020 09:57**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622462** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	0.04405	0.00500	0.05	0	88.1	85 - 116				
Sodium	4.488	0.200	5	0	89.8	85 - 117				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:27**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622452** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4279	0.0100	0.2	0.1871	120	84 - 117				S
Antimony	0.05061	0.00500	0.05	0.000066	101	85 - 117				
Arsenic	0.05255	0.00500	0.05	0.00058	104	84 - 116				
Barium	0.1782	0.00500	0.05	0.1242	108	86 - 114				
Beryllium	0.05514	0.00200	0.05	0.000124	110	83 - 121				
Cadmium	0.05175	0.00200	0.05	0.00014	103	87 - 115				
Calcium	11.32	0.500	5	6.187	103	87 - 118				
Chromium	0.06117	0.00500	0.05	0.01191	98.5	85 - 116				
Cobalt	0.04819	0.00500	0.05	0.000522	95.3	86 - 115				
Copper	0.05324	0.00500	0.05	0.00134	104	85 - 118				
Iron	22.72	0.200	5	17.7	100	87 - 118				
Lead	0.05014	0.00500	0.05	0.000553	99.2	88 - 115				
Magnesium	8.37	0.200	5	3.314	101	83 - 118				
Manganese	0.3712	0.00500	0.05	0.3265	89.3	87 - 115				O
Nickel	0.05722	0.00500	0.05	0.006132	102	85 - 117				
Potassium	7.374	0.200	5	2.014	107	87 - 115				
Selenium	0.05536	0.00500	0.05	-0.000101	111	80 - 120				
Silver	0.05019	0.00500	0.05	0.000014	100	85 - 116				
Sodium	27.24	0.200	5	22.16	101	85 - 117				O
Thallium	0.04787	0.00200	0.05	0.000063	95.6	82 - 116				
Vanadium	0.05291	0.00500	0.05	0.002064	102	86 - 115				
Zinc	0.05854	0.00500	0.05	0.006047	105	83 - 119				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:30**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622453** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4083	0.0100	0.2	0.1871	111	84 - 117	0.4279	4.69	20	
Antimony	0.04837	0.00500	0.05	0.000066	96.6	85 - 117	0.05061	4.53	20	
Arsenic	0.05104	0.00500	0.05	0.00058	101	84 - 116	0.05255	2.92	20	
Barium	0.1734	0.00500	0.05	0.1242	98.3	86 - 114	0.1782	2.75	20	
Beryllium	0.05386	0.00200	0.05	0.000124	107	83 - 121	0.05514	2.35	20	
Cadmium	0.05011	0.00200	0.05	0.00014	99.9	87 - 115	0.05175	3.23	20	
Calcium	10.87	0.500	5	6.187	93.8	87 - 118	11.32	3.97	20	
Chromium	0.05865	0.00500	0.05	0.01191	93.5	85 - 116	0.06117	4.21	20	
Cobalt	0.04616	0.00500	0.05	0.000522	91.3	86 - 115	0.04819	4.31	20	
Copper	0.05055	0.00500	0.05	0.00134	98.4	85 - 118	0.05324	5.19	20	
Iron	21.65	0.200	5	17.7	79.0	87 - 118	22.72	4.82	20	S
Lead	0.04823	0.00500	0.05	0.000553	95.4	88 - 115	0.05014	3.89	20	
Magnesium	8.178	0.200	5	3.314	97.3	83 - 118	8.37	2.32	20	
Manganese	0.3574	0.00500	0.05	0.3265	61.7	87 - 115	0.3712	3.79	20	SO
Nickel	0.05436	0.00500	0.05	0.006132	96.4	85 - 117	0.05722	5.14	20	
Potassium	7.075	0.200	5	2.014	101	87 - 115	7.374	4.13	20	
Selenium	0.05171	0.00500	0.05	-0.000101	104	80 - 120	0.05536	6.81	20	
Silver	0.04799	0.00500	0.05	0.000014	96.0	85 - 116	0.05019	4.49	20	
Sodium	26.07	0.200	5	22.16	78.1	85 - 117	27.24	4.39	20	SO
Thallium	0.04564	0.00200	0.05	0.000063	91.1	82 - 116	0.04787	4.78	20	
Vanadium	0.05056	0.00500	0.05	0.002064	97.0	86 - 115	0.05291	4.54	20	
Zinc	0.05664	0.00500	0.05	0.006047	101	83 - 119	0.05854	3.3	20	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060202-01PDS** Units: **mg/L** Analysis Date: **17-Jun-2020 10:32**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622454** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4005	0.0100	0.2	0.1871	107	80 - 120				
Antimony	0.1916	0.00500	0.2	0.000066	95.8	80 - 120				
Arsenic	0.2107	0.00500	0.2	0.00058	105	80 - 120				
Barium	0.3222	0.00500	0.2	0.1242	99.0	80 - 120				
Cadmium	0.2032	0.00200	0.2	0.00014	102	80 - 120				
Calcium	26.11	0.500	20	6.187	99.6	80 - 120				
Chromium	0.2118	0.00500	0.2	0.01191	99.9	80 - 120				
Cobalt	0.1896	0.00500	0.2	0.000522	94.6	80 - 120				
Copper	0.2057	0.00500	0.2	0.00134	102	80 - 120				
Iron	37.41	0.200	20	17.7	98.6	80 - 120				
Lead	0.2051	0.00500	0.2	0.000553	102	80 - 120				
Magnesium	23.55	0.200	20	3.314	101	80 - 120				
Manganese	0.5342	0.00500	0.2	0.3265	104	80 - 120				
Nickel	0.2062	0.00500	0.2	0.006132	100	80 - 120				
Potassium	22.5	0.200	20	2.014	102	80 - 120				
Selenium	0.2133	0.00500	0.2	-0.000101	107	80 - 120				
Sodium	41.58	0.200	20	22.16	97.1	80 - 120				
Thallium	0.2051	0.00200	0.2	0.000063	102	80 - 120				
Vanadium	0.2053	0.00500	0.2	0.002064	102	80 - 120				
Zinc	0.2152	0.00500	0.2	0.006047	105	80 - 120				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154143 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060202-01SD** Units: **mg/L** Analysis Date: **17-Jun-2020 10:25**
Client ID: Run ID: **ICPMS05_363365** SeqNo: **5622451** PrepDate: **05-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.1824	0.0500					0.1871	2.56	10	
Antimony	0.00250	0.0250					0.000066	0	10	U
Arsenic	0.00250	0.0250					0.00058	0	10	U
Barium	0.1203	0.0250					0.1242	3.17	10	
Beryllium	0.00250	0.0100					0.000124	0	10	U
Cadmium	0.00250	0.0100					0.00014	0	10	U
Calcium	5.988	2.50					6.187	3.21	10	
Chromium	0.02323	0.0250					0.01191	0	10	J
Cobalt	0.00250	0.0250					0.000522	0	10	U
Copper	0.0125	0.0250					0.00134	0	10	U
Iron	17.81	1.00					17.7	0.621	10	
Lead	0.00500	0.0250					0.000553	0	10	U
Magnesium	3.144	1.00					3.314	5.11	10	
Manganese	0.3208	0.0250					0.3265	1.75	10	
Nickel	0.007999	0.0250					0.006132	0	10	J
Potassium	1.999	1.00					2.014	0.717	10	
Selenium	0.0125	0.0250					-0.000101	0	10	U
Silver	0.00250	0.0250					0.000014	0	10	U
Sodium	22.42	1.00					22.16	1.16	10	
Thallium	0.00250	0.0100					0.000063	0	10	U
Vanadium	0.007346	0.0250					0.002064	0	10	J
Zinc	0.02549	0.0250					0.006047	0	10	

The following samples were analyzed in this batch: HS20060208-01 HS20060208-02 HS20060208-04

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154514 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:30**
Client ID: Run ID: **HG03_363352** SeqNo: **5621648** PrepDate: **16-Jun-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-154514** Units: **mg/L** Analysis Date: **16-Jun-2020 16:31**
Client ID: Run ID: **HG03_363352** SeqNo: **5621649** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00506	0.000200	0.005	0	101	82 - 119				

MS Sample ID: **HS20060202-01MS** Units: **mg/L** Analysis Date: **16-Jun-2020 16:35**
Client ID: Run ID: **HG03_363352** SeqNo: **5621651** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119				

MSD Sample ID: **HS20060202-01MSD** Units: **mg/L** Analysis Date: **16-Jun-2020 16:37**
Client ID: Run ID: **HG03_363352** SeqNo: **5621652** PrepDate: **16-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00508	0.000200	0.005	0.00002000	101	82 - 119	0.005080	0	20	

The following samples were analyzed in this batch: HS20060208-01 HS20060208-02 HS20060208-04

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: 154163 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 11:44**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627371** PrepDate: **05-Jun-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	*0.07849*	*0*	*0.08*	*0*	*98.1*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0791*	*0*	*0.08*	*0*	*98.9*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07929*	*0*	*0.08*	*0*	*99.1*	*40 - 140*				

LCS Sample ID: **LCS-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 12:03**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627372** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.07118	0.010	0.08	0	89.0	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08107*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08274*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.1035*	*0*	*0.08*	*0*	*129*	*40 - 140*				

LCSD Sample ID: **LCSD-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 12:23**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627373** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.06157	0.010	0.08	0	77.0	40 - 140	0.07118	14.5	20	
Surr: 2-Fluorobiphenyl	*0.08394*	*0*	*0.08*	*0*	*105*	*40 - 140*	*0.08107*	*3.47*	*20*	
Surr: 4-Terphenyl-d14	*0.08169*	*0*	*0.08*	*0*	*102*	*40 - 140*	*0.08274*	*1.28*	*20*	
Surr: Nitrobenzene-d5	*0.05779*	*0*	*0.08*	*0*	*72.2*	*40 - 140*	*0.1035*	*56.7*	*20*	R

The following samples were analyzed in this batch: HS20060208-02 HS20060208-03 HS20060208-04

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 13:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609445** 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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 13:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609445** 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	*42.34*	*1.0*	*50*	*0*	*84.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.03*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*43.54*	*1.0*	*50*	*0*	*87.1*	*80 - 119*				
Surr: Toluene-d8	*53.96*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 12:43**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609444** 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	21.06	1.0	20	0	105	78 - 124				
1,1,1-Trichloroethane	20.13	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	20.91	1.0	20	0	105	71 - 121				
1,1,2-Trichloroethane	21.52	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	20.59	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	19.37	1.0	20	0	96.9	71 - 131				
1,1-Dichloropropene	19.17	1.0	20	0	95.8	78 - 125				
1,2,3-Trichlorobenzene	27.16	1.0	20	0	136	69 - 129				S
1,2,3-Trichloropropane	20.83	1.0	20	0	104	73 - 122				
1,2,4-Trichlorobenzene	25.4	1.0	20	0	127	69 - 130				
1,2,4-Trimethylbenzene	19.2	1.0	20	0	96.0	76 - 124				
1,2-Dibromo-3-chloropropane	26.65	1.0	20	0	133	62 - 128				S
1,2-Dibromoethane	21.61	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	20.39	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	21.15	1.0	20	0	106	73 - 128				
1,2-Dichloropropane	21.22	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	18.61	1.0	20	0	93.0	75 - 124				
1,3-Dichlorobenzene	19.47	1.0	20	0	97.4	80 - 119				
1,3-Dichloropropane	20.93	1.0	20	0	105	80 - 119				
1,4-Dichlorobenzene	18.86	1.0	20	0	94.3	79 - 118				
2,2-Dichloropropane	20.21	1.0	20	0	101	60 - 139				
2-Butanone	43.17	2.0	40	0	108	56 - 143				
2-Chlorotoluene	17.99	1.0	20	0	89.9	79 - 122				
2-Hexanone	47.25	2.0	40	0	118	57 - 139				
4-Chlorotoluene	18.23	1.0	20	0	91.1	78 - 122				
4-Isopropyltoluene	18.63	1.0	20	0	93.2	77 - 127				
4-Methyl-2-pentanone	45.11	2.0	40	0	113	67 - 130				
Acetone	46.39	2.0	40	0	116	39 - 160				
Benzene	20.46	1.0	20	0	102	79 - 120				
Bromobenzene	19.73	1.0	20	0	98.6	80 - 120				
Bromochloromethane	20.83	1.0	20	0	104	78 - 123				
Bromodichloromethane	21.34	1.0	20	0	107	79 - 125				
Bromoform	22.89	1.0	20	0	114	66 - 130				
Bromomethane	22.06	1.0	20	0	110	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200607** Units: **UG/L** Analysis Date: **07-Jun-2020 12:43**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609444** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.85	2.0	40	0	99.6	64 - 133				
Carbon tetrachloride	18.88	1.0	20	0	94.4	72 - 136				
Chlorobenzene	19.86	1.0	20	0	99.3	82 - 118				
Chloroethane	19.52	1.0	20	0	97.6	60 - 138				
Chloroform	20.73	1.0	20	0	104	79 - 124				
Chloromethane	19.72	1.0	20	0	98.6	50 - 139				
cis-1,2-Dichloroethene	21.06	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	21.53	1.0	20	0	108	75 - 124				
Dibromochloromethane	20.97	1.0	20	0	105	74 - 126				
Dibromomethane	21.74	1.0	20	0	109	79 - 123				
Dichlorodifluoromethane	19.78	1.0	20	0	98.9	32 - 152				
Ethylbenzene	19.45	1.0	20	0	97.2	79 - 121				
Hexachlorobutadiene	26.33	1.0	20	0	132	66 - 134				
Isopropylbenzene	19.18	1.0	20	0	95.9	72 - 131				
m,p-Xylene	39.44	2.0	40	0	98.6	80 - 121				
Methylene chloride	22.56	2.0	20	0	113	74 - 124				
Naphthalene	24.96	1.0	20	0	125	61 - 128				
n-Butylbenzene	18.88	1.0	20	0	94.4	75 - 128				
n-Propylbenzene	18.3	1.0	20	0	91.5	76 - 126				
o-Xylene	19.84	1.0	20	0	99.2	78 - 122				
sec-Butylbenzene	17.91	1.0	20	0	89.5	77 - 126				
Styrene	20.41	1.0	20	0	102	78 - 123				
tert-Butylbenzene	18.09	1.0	20	0	90.5	78 - 124				
Tetrachloroethene	19.69	1.0	20	0	98.4	74 - 129				
Toluene	19.84	1.0	20	0	99.2	80 - 121				
trans-1,2-Dichloroethene	20.61	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	22.11	1.0	20	0	111	73 - 127				
Trichloroethene	20.49	1.0	20	0	102	79 - 123				
Trichlorofluoromethane	19.93	1.0	20	0	99.6	65 - 141				
Vinyl chloride	18.12	1.0	20	0	90.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.17*	*1.0*	*50*	*0*	*106*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.12*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*52.59*	*1.0*	*50*	*0*	*105*	*80 - 119*				
Surr: Toluene-d8	*46.61*	*1.0*	*50*	*0*	*93.2*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060202-01MS** Units: **UG/L** Analysis Date: **07-Jun-2020 15:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609450** 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	21.29	1.0	20	0	106	78 - 124				
1,1,1-Trichloroethane	18.27	1.0	20	0	91.4	74 - 131				
1,1,2,2-Tetrachloroethane	21.58	1.0	20	0	108	71 - 121				
1,1,2-Trichloroethane	21.58	1.0	20	0	108	80 - 119				
1,1-Dichloroethane	17.27	1.0	20	0	86.4	77 - 125				
1,1-Dichloroethene	17.93	1.0	20	0	89.7	71 - 131				
1,1-Dichloropropene	19.53	1.0	20	0	97.7	78 - 125				
1,2,3-Trichlorobenzene	27.88	1.0	20	0	139	69 - 129				S
1,2,3-Trichloropropane	21.09	1.0	20	0	105	73 - 122				
1,2,4-Trichlorobenzene	26.24	1.0	20	0	131	69 - 130				S
1,2,4-Trimethylbenzene	21.3	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	25.58	1.0	20	0	128	62 - 128				
1,2-Dibromoethane	21.6	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	22.29	1.0	20	0	111	80 - 119				
1,2-Dichloroethane	19.79	1.0	20	0	98.9	73 - 128				
1,2-Dichloropropane	20.18	1.0	20	0	101	78 - 122				
1,3,5-Trimethylbenzene	20.76	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.78	1.0	20	0	104	80 - 119				
1,3-Dichloropropane	20.87	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.77	1.0	20	0	104	79 - 118				
2,2-Dichloropropane	17.19	1.0	20	0	86.0	60 - 139				
2-Butanone	34.12	2.0	40	0	85.3	56 - 143				
2-Chlorotoluene	20.22	1.0	20	0	101	79 - 122				
2-Hexanone	47.59	2.0	40	0	119	57 - 139				
4-Chlorotoluene	19.97	1.0	20	0	99.8	78 - 122				
4-Isopropyltoluene	21.69	1.0	20	0	108	77 - 127				
4-Methyl-2-pentanone	46.03	2.0	40	0	115	67 - 130				
Acetone	30.09	2.0	40	0	75.2	39 - 160				
Benzene	19.35	1.0	20	0	96.7	79 - 120				
Bromobenzene	20.97	1.0	20	0	105	80 - 120				
Bromochloromethane	17.4	1.0	20	0	87.0	78 - 123				
Bromodichloromethane	19.36	1.0	20	0	96.8	79 - 125				
Bromoform	22.48	1.0	20	0	112	66 - 130				
Bromomethane	15.86	1.0	20	0	79.3	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060202-01MS** Units: **UG/L** Analysis Date: **07-Jun-2020 15:31**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609450** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	35.76	2.0	40	0	89.4	64 - 133				
Carbon tetrachloride	19.7	1.0	20	0	98.5	72 - 136				
Chlorobenzene	20.69	1.0	20	0	103	82 - 118				
Chloroethane	16.35	1.0	20	0	81.7	60 - 138				
Chloroform	17.58	1.0	20	0	87.9	79 - 124				
Chloromethane	13.44	1.0	20	0	67.2	50 - 139				
cis-1,2-Dichloroethene	17.89	1.0	20	0	89.5	78 - 123				
cis-1,3-Dichloropropene	19.77	1.0	20	0	98.8	75 - 124				
Dibromochloromethane	21.12	1.0	20	0	106	74 - 126				
Dibromomethane	19.73	1.0	20	0	98.7	79 - 123				
Dichlorodifluoromethane	10.16	1.0	20	0	50.8	32 - 152				
Ethylbenzene	21.38	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	28.02	1.0	20	0	140	66 - 134				S
Isopropylbenzene	21.34	1.0	20	0	107	72 - 131				
m,p-Xylene	42.58	2.0	40	0	106	80 - 121				
Methylene chloride	17.6	2.0	20	0	88.0	74 - 124				
Naphthalene	26.8	1.0	20	0	134	61 - 128				S
n-Butylbenzene	22.03	1.0	20	0	110	75 - 128				
n-Propylbenzene	20.81	1.0	20	0	104	76 - 126				
o-Xylene	21.36	1.0	20	0	107	78 - 122				
sec-Butylbenzene	21.07	1.0	20	0	105	77 - 126				
Styrene	21.23	1.0	20	0	106	78 - 123				
tert-Butylbenzene	20.87	1.0	20	0	104	78 - 124				
Tetrachloroethene	22.06	1.0	20	0	110	74 - 129				
Toluene	20.94	1.0	20	0	105	80 - 121				
trans-1,2-Dichloroethene	17.8	1.0	20	0	89.0	75 - 124				
trans-1,3-Dichloropropene	19.79	1.0	20	0	99.0	73 - 127				
Trichloroethene	20.71	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	17.39	1.0	20	0	86.9	65 - 141				
Vinyl chloride	14.37	1.0	20	0	71.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*44*	*1.0*	*50*	*0*	*88.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.09*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*44.73*	*1.0*	*50*	*0*	*89.5*	*80 - 119*				
Surr: Toluene-d8	*53.41*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060202-01MSD** Units: **UG/L** Analysis Date: **07-Jun-2020 15:55**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609451** 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	20.1	1.0	20	0	101	78 - 124	21.29	5.75	20	
1,1,1-Trichloroethane	18.37	1.0	20	0	91.9	74 - 131	18.27	0.562	20	
1,1,2,2-Tetrachloroethane	19.43	1.0	20	0	97.1	71 - 121	21.58	10.5	20	
1,1,2-Trichloroethane	19.82	1.0	20	0	99.1	80 - 119	21.58	8.54	20	
1,1-Dichloroethane	16.79	1.0	20	0	84.0	77 - 125	17.27	2.84	20	
1,1-Dichloroethene	17.44	1.0	20	0	87.2	71 - 131	17.93	2.76	20	
1,1-Dichloropropene	19.36	1.0	20	0	96.8	78 - 125	19.53	0.872	20	
1,2,3-Trichlorobenzene	33.72	1.0	20	0	169	69 - 129	27.88	18.9	20	S
1,2,3-Trichloropropane	18.95	1.0	20	0	94.7	73 - 122	21.09	10.7	20	
1,2,4-Trichlorobenzene	29.46	1.0	20	0	147	69 - 130	26.24	11.6	20	S
1,2,4-Trimethylbenzene	18.69	1.0	20	0	93.5	76 - 124	21.3	13	20	
1,2-Dibromo-3-chloropropane	25.98	1.0	20	0	130	62 - 128	25.58	1.53	20	S
1,2-Dibromoethane	20.68	1.0	20	0	103	77 - 121	21.6	4.36	20	
1,2-Dichlorobenzene	19.64	1.0	20	0	98.2	80 - 119	22.29	12.6	20	
1,2-Dichloroethane	18.62	1.0	20	0	93.1	73 - 128	19.79	6.09	20	
1,2-Dichloropropane	19.48	1.0	20	0	97.4	78 - 122	20.18	3.51	20	
1,3,5-Trimethylbenzene	18.37	1.0	20	0	91.9	75 - 124	20.76	12.2	20	
1,3-Dichlorobenzene	18.63	1.0	20	0	93.1	80 - 119	20.78	10.9	20	
1,3-Dichloropropane	19.72	1.0	20	0	98.6	80 - 119	20.87	5.64	20	
1,4-Dichlorobenzene	17.95	1.0	20	0	89.7	79 - 118	20.77	14.6	20	
2,2-Dichloropropane	16.61	1.0	20	0	83.0	60 - 139	17.19	3.47	20	
2-Butanone	34.68	2.0	40	0	86.7	56 - 143	34.12	1.65	20	
2-Chlorotoluene	17.65	1.0	20	0	88.3	79 - 122	20.22	13.6	20	
2-Hexanone	45.45	2.0	40	0	114	57 - 139	47.59	4.6	20	
4-Chlorotoluene	17.55	1.0	20	0	87.7	78 - 122	19.97	12.9	20	
4-Isopropyltoluene	19.61	1.0	20	0	98.1	77 - 127	21.69	10.1	20	
4-Methyl-2-pentanone	44.39	2.0	40	0	111	67 - 130	46.03	3.63	20	
Acetone	29.7	2.0	40	0	74.2	39 - 160	30.09	1.32	20	
Benzene	18.88	1.0	20	0	94.4	79 - 120	19.35	2.43	20	
Bromobenzene	17.78	1.0	20	0	88.9	80 - 120	20.97	16.5	20	
Bromochloromethane	16.81	1.0	20	0	84.0	78 - 123	17.4	3.47	20	
Bromodichloromethane	19.04	1.0	20	0	95.2	79 - 125	19.36	1.65	20	
Bromoform	21.25	1.0	20	0	106	66 - 130	22.48	5.61	20	
Bromomethane	15.4	1.0	20	0	77.0	53 - 141	15.86	2.96	20	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362787 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060202-01MSD** Units: **UG/L** Analysis Date: **07-Jun-2020 15:55**
Client ID: Run ID: **VOA6_362787** SeqNo: **5609451** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	35.06	2.0	40	0	87.7	64 - 133	35.76	1.96	20	
Carbon tetrachloride	19.37	1.0	20	0	96.9	72 - 136	19.7	1.68	20	
Chlorobenzene	19.29	1.0	20	0	96.5	82 - 118	20.69	7.01	20	
Chloroethane	15.7	1.0	20	0	78.5	60 - 138	16.35	4.08	20	
Chloroform	16.96	1.0	20	0	84.8	79 - 124	17.58	3.63	20	
Chloromethane	13.16	1.0	20	0	65.8	50 - 139	13.44	2.05	20	
cis-1,2-Dichloroethene	17.45	1.0	20	0	87.2	78 - 123	17.89	2.53	20	
cis-1,3-Dichloropropene	19.12	1.0	20	0	95.6	75 - 124	19.77	3.33	20	
Dibromochloromethane	19.44	1.0	20	0	97.2	74 - 126	21.12	8.26	20	
Dibromomethane	19.08	1.0	20	0	95.4	79 - 123	19.73	3.33	20	
Dichlorodifluoromethane	10.09	1.0	20	0	50.4	32 - 152	10.16	0.684	20	
Ethylbenzene	19.88	1.0	20	0	99.4	79 - 121	21.38	7.26	20	
Hexachlorobutadiene	28.29	1.0	20	0	141	66 - 134	28.02	0.943	20	S
Isopropylbenzene	20.16	1.0	20	0	101	72 - 131	21.34	5.67	20	
m,p-Xylene	39.54	2.0	40	0	98.9	80 - 121	42.58	7.39	20	
Methylene chloride	16.82	2.0	20	0	84.1	74 - 124	17.6	4.53	20	
Naphthalene	32.67	1.0	20	0	163	61 - 128	26.8	19.8	20	S
n-Butylbenzene	20.03	1.0	20	0	100	75 - 128	22.03	9.49	20	
n-Propylbenzene	18.52	1.0	20	0	92.6	76 - 126	20.81	11.6	20	
o-Xylene	19.9	1.0	20	0	99.5	78 - 122	21.36	7.08	20	
sec-Butylbenzene	19.3	1.0	20	0	96.5	77 - 126	21.07	8.76	20	
Styrene	19.94	1.0	20	0	99.7	78 - 123	21.23	6.26	20	
tert-Butylbenzene	18.73	1.0	20	0	93.6	78 - 124	20.87	10.8	20	
Tetrachloroethene	21.6	1.0	20	0	108	74 - 129	22.06	2.1	20	
Toluene	19.75	1.0	20	0	98.7	80 - 121	20.94	5.85	20	
trans-1,2-Dichloroethene	17.3	1.0	20	0	86.5	75 - 124	17.8	2.82	20	
trans-1,3-Dichloropropene	18.87	1.0	20	0	94.4	73 - 127	19.79	4.76	20	
Trichloroethene	20.14	1.0	20	0	101	79 - 123	20.71	2.8	20	
Trichlorofluoromethane	17.71	1.0	20	0	88.6	65 - 141	17.39	1.87	20	
Vinyl chloride	14.09	1.0	20	0	70.5	58 - 137	14.37	1.97	20	
Surr: 1,2-Dichloroethane-d4	*43.6*	*1.0*	*50*	*0*	*87.2*	*81 - 118*	*44*	*0.923*	*20*	
Surr: 4-Bromofluorobenzene	*51.62*	*1.0*	*50*	*0*	*103*	*85 - 114*	*50.09*	*3.01*	*20*	
Surr: Dibromofluoromethane	*44.74*	*1.0*	*50*	*0*	*89.5*	*80 - 119*	*44.73*	*0.0254*	*20*	
Surr: Toluene-d8	*51.62*	*1.0*	*50*	*0*	*103*	*89 - 112*	*53.41*	*3.41*	*20*	

ALS Houston, US Date: 19-Jun-20

Client:	Bhate Environmental Associates, Inc.
Project:	LHAAP 18 24
WorkOrder:	HS20060208

QC BATCH REPORT

Batch ID:	**R362787 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS20060208-01	HS20060208-02	HS20060208-03	HS20060208-05

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 14:15**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611177** 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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 14:15**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611177** 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	*42.14*	*1.0*	*50*	*0*	*84.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.06*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*43.24*	*1.0*	*50*	*0*	*86.5*	*80 - 119*				
Surr: Toluene-d8	*53.03*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 13:27**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611176** 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	20.89	1.0	20	0	104	78 - 124				
1,1,1-Trichloroethane	20.03	1.0	20	0	100	74 - 131				
1,1,2,2-Tetrachloroethane	21.13	1.0	20	0	106	71 - 121				
1,1,2-Trichloroethane	21.15	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	20.36	1.0	20	0	102	77 - 125				
1,1-Dichloroethene	20.15	1.0	20	0	101	71 - 131				
1,1-Dichloropropene	18.49	1.0	20	0	92.5	78 - 125				
1,2,3-Trichlorobenzene	31.48	1.0	20	0	157	69 - 129				S
1,2,3-Trichloropropane	21.75	1.0	20	0	109	73 - 122				
1,2,4-Trichlorobenzene	27.92	1.0	20	0	140	69 - 130				S
1,2,4-Trimethylbenzene	19.21	1.0	20	0	96.0	76 - 124				
1,2-Dibromo-3-chloropropane	30.18	1.0	20	0	151	62 - 128				S
1,2-Dibromoethane	21.68	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	20.71	1.0	20	0	104	80 - 119				
1,2-Dichloroethane	21.44	1.0	20	0	107	73 - 128				
1,2-Dichloropropane	20.65	1.0	20	0	103	78 - 122				
1,3,5-Trimethylbenzene	18.76	1.0	20	0	93.8	75 - 124				
1,3-Dichlorobenzene	19.56	1.0	20	0	97.8	80 - 119				
1,3-Dichloropropane	20.84	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	19.27	1.0	20	0	96.3	79 - 118				
2,2-Dichloropropane	20.05	1.0	20	0	100	60 - 139				
2-Butanone	46.24	2.0	40	0	116	56 - 143				
2-Chlorotoluene	18	1.0	20	0	90.0	79 - 122				
2-Hexanone	47.85	2.0	40	0	120	57 - 139				
4-Chlorotoluene	18.44	1.0	20	0	92.2	78 - 122				
4-Isopropyltoluene	19.25	1.0	20	0	96.2	77 - 127				
4-Methyl-2-pentanone	44.62	2.0	40	0	112	67 - 130				
Acetone	46.61	2.0	40	0	117	39 - 160				
Benzene	19.88	1.0	20	0	99.4	79 - 120				
Bromobenzene	19.54	1.0	20	0	97.7	80 - 120				
Bromochloromethane	21.37	1.0	20	0	107	78 - 123				
Bromodichloromethane	20.77	1.0	20	0	104	79 - 125				
Bromoform	22.55	1.0	20	0	113	66 - 130				
Bromomethane	20.43	1.0	20	0	102	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 13:27**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611176** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	39.98	2.0	40	0	100.0	64 - 133				
Carbon tetrachloride	18.09	1.0	20	0	90.5	72 - 136				
Chlorobenzene	19.72	1.0	20	0	98.6	82 - 118				
Chloroethane	19.76	1.0	20	0	98.8	60 - 138				
Chloroform	20.46	1.0	20	0	102	79 - 124				
Chloromethane	20.29	1.0	20	0	101	50 - 139				
cis-1,2-Dichloroethene	21.02	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	21.02	1.0	20	0	105	75 - 124				
Dibromochloromethane	20.58	1.0	20	0	103	74 - 126				
Dibromomethane	21.43	1.0	20	0	107	79 - 123				
Dichlorodifluoromethane	18.4	1.0	20	0	92.0	32 - 152				
Ethylbenzene	19.41	1.0	20	0	97.0	79 - 121				
Hexachlorobutadiene	26.13	1.0	20	0	131	66 - 134				
Isopropylbenzene	19.23	1.0	20	0	96.2	72 - 131				
m,p-Xylene	38.84	2.0	40	0	97.1	80 - 121				
Methylene chloride	21.97	2.0	20	0	110	74 - 124				
Naphthalene	30.43	1.0	20	0	152	61 - 128				S
n-Butylbenzene	19.13	1.0	20	0	95.6	75 - 128				
n-Propylbenzene	18.74	1.0	20	0	93.7	76 - 126				
o-Xylene	20.49	1.0	20	0	102	78 - 122				
sec-Butylbenzene	18.31	1.0	20	0	91.6	77 - 126				
Styrene	20.25	1.0	20	0	101	78 - 123				
tert-Butylbenzene	18.42	1.0	20	0	92.1	78 - 124				
Tetrachloroethene	19.4	1.0	20	0	97.0	74 - 129				
Toluene	19.85	1.0	20	0	99.3	80 - 121				
trans-1,2-Dichloroethene	20.66	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	21.46	1.0	20	0	107	73 - 127				
Trichloroethene	20.6	1.0	20	0	103	79 - 123				
Trichlorofluoromethane	19.69	1.0	20	0	98.5	65 - 141				
Vinyl chloride	17.79	1.0	20	0	89.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*55.71*	*1.0*	*50*	*0*	*111*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.69*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*53.64*	*1.0*	*50*	*0*	*107*	*80 - 119*				
Surr: Toluene-d8	*48.05*	*1.0*	*50*	*0*	*96.1*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060251-02MS** Units: **UG/L** Analysis Date: **08-Jun-2020 16:15**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611182** 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	20.83	1.0	20	0	104	78 - 124				
1,1,1-Trichloroethane	16.99	1.0	20	0	84.9	74 - 131				
1,1,2,2-Tetrachloroethane	21.66	1.0	20	0	108	71 - 121				
1,1,2-Trichloroethane	20.78	1.0	20	0	104	80 - 119				
1,1-Dichloroethane	16.06	1.0	20	0	80.3	77 - 125				
1,1-Dichloroethene	17.13	1.0	20	0	85.6	71 - 131				
1,1-Dichloropropene	18.02	1.0	20	0	90.1	78 - 125				
1,2,3-Trichlorobenzene	31.28	1.0	20	0	156	69 - 129				S
1,2,3-Trichloropropane	20.25	1.0	20	0	101	73 - 122				
1,2,4-Trichlorobenzene	29.8	1.0	20	0	149	69 - 130				S
1,2,4-Trimethylbenzene	19.19	1.0	20	0	95.9	76 - 124				
1,2-Dibromo-3-chloropropane	30.74	1.0	20	0	154	62 - 128				S
1,2-Dibromoethane	21.28	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	20.53	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	18.55	1.0	20	0	92.8	73 - 128				
1,2-Dichloropropane	19.63	1.0	20	0	98.2	78 - 122				
1,3,5-Trimethylbenzene	18.41	1.0	20	0	92.0	75 - 124				
1,3-Dichlorobenzene	19.04	1.0	20	0	95.2	80 - 119				
1,3-Dichloropropane	20.12	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	18.7	1.0	20	0	93.5	79 - 118				
2,2-Dichloropropane	15.7	1.0	20	0	78.5	60 - 139				
2-Butanone	37.62	2.0	40	0	94.1	56 - 143				
2-Chlorotoluene	17.52	1.0	20	0	87.6	79 - 122				
2-Hexanone	50.23	2.0	40	0	126	57 - 139				
4-Chlorotoluene	17.66	1.0	20	0	88.3	78 - 122				
4-Isopropyltoluene	19.3	1.0	20	0	96.5	77 - 127				
4-Methyl-2-pentanone	47.78	2.0	40	0	119	67 - 130				
Acetone	29.65	2.0	40	0	74.1	39 - 160				
Benzene	18.45	1.0	20	0	92.3	79 - 120				
Bromobenzene	18.55	1.0	20	0	92.8	80 - 120				
Bromochloromethane	17.26	1.0	20	0	86.3	78 - 123				
Bromodichloromethane	18.96	1.0	20	0	94.8	79 - 125				
Bromoform	22.44	1.0	20	0	112	66 - 130				
Bromomethane	11.3	1.0	20	0	56.5	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060251-02MS** Units: **UG/L** Analysis Date: **08-Jun-2020 16:15**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611182** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	32.81	2.0	40	0	82.0	64 - 133				
Carbon tetrachloride	18.48	1.0	20	0	92.4	72 - 136				
Chlorobenzene	19.27	1.0	20	0	96.4	82 - 118				
Chloroethane	29.37	1.0	20	0	147	60 - 138				S
Chloroform	16.54	1.0	20	0	82.7	79 - 124				
Chloromethane	11.88	1.0	20	0	59.4	50 - 139				
cis-1,2-Dichloroethene	42.09	1.0	20	24.9	86.0	78 - 123				
cis-1,3-Dichloropropene	18.72	1.0	20	0	93.6	75 - 124				
Dibromochloromethane	20.41	1.0	20	0	102	74 - 126				
Dibromomethane	19.24	1.0	20	0	96.2	79 - 123				
Dichlorodifluoromethane	9.776	1.0	20	0	48.9	32 - 152				
Ethylbenzene	20	1.0	20	0	100	79 - 121				
Hexachlorobutadiene	28.68	1.0	20	0	143	66 - 134				S
Isopropylbenzene	19.69	1.0	20	0	98.4	72 - 131				
m,p-Xylene	39.91	2.0	40	0	99.8	80 - 121				
Methylene chloride	16.29	2.0	20	0	81.5	74 - 124				
Naphthalene	30.36	1.0	20	0	152	61 - 128				S
n-Butylbenzene	19.43	1.0	20	0	97.2	75 - 128				
n-Propylbenzene	18.47	1.0	20	0	92.4	76 - 126				
o-Xylene	20.09	1.0	20	0	100	78 - 122				
sec-Butylbenzene	18.9	1.0	20	0	94.5	77 - 126				
Styrene	19.84	1.0	20	0	99.2	78 - 123				
tert-Butylbenzene	18.58	1.0	20	0	92.9	78 - 124				
Tetrachloroethene	20.73	1.0	20	0	104	74 - 129				
Toluene	19.76	1.0	20	0	98.8	80 - 121				
trans-1,2-Dichloroethene	16.54	1.0	20	0	82.7	75 - 124				
trans-1,3-Dichloropropene	18.97	1.0	20	0	94.8	73 - 127				
Trichloroethene	28.66	1.0	20	8.405	101	79 - 123				
Trichlorofluoromethane	16.22	1.0	20	0	81.1	65 - 141				
Vinyl chloride	12.93	1.0	20	0	64.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*42.85*	*1.0*	*50*	*0*	*85.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.02*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*44.39*	*1.0*	*50*	*0*	*88.8*	*80 - 119*				
Surr: Toluene-d8	*52.26*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060251-02MSD** Units: **UG/L** Analysis Date: **08-Jun-2020 16:39**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611183** 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	21.22	1.0	20	0	106	78 - 124	20.83	1.85	20	
1,1,1-Trichloroethane	17.9	1.0	20	0	89.5	74 - 131	16.99	5.25	20	
1,1,2,2-Tetrachloroethane	23.5	1.0	20	0	117	71 - 121	21.66	8.14	20	
1,1,2-Trichloroethane	21.36	1.0	20	0	107	80 - 119	20.78	2.72	20	
1,1-Dichloroethane	16.47	1.0	20	0	82.3	77 - 125	16.06	2.5	20	
1,1-Dichloroethene	18.1	1.0	20	0	90.5	71 - 131	17.13	5.55	20	
1,1-Dichloropropene	18.61	1.0	20	0	93.0	78 - 125	18.02	3.22	20	
1,2,3-Trichlorobenzene	43.11	1.0	20	0	216	69 - 129	31.28	31.8	20	SR
1,2,3-Trichloropropane	22.18	1.0	20	0	111	73 - 122	20.25	9.09	20	
1,2,4-Trichlorobenzene	35.06	1.0	20	0	175	69 - 130	29.8	16.2	20	S
1,2,4-Trimethylbenzene	21.31	1.0	20	0	107	76 - 124	19.19	10.5	20	
1,2-Dibromo-3-chloropropane	32.85	1.0	20	0	164	62 - 128	30.74	6.62	20	S
1,2-Dibromoethane	21.8	1.0	20	0	109	77 - 121	21.28	2.39	20	
1,2-Dichlorobenzene	22.54	1.0	20	0	113	80 - 119	20.53	9.32	20	
1,2-Dichloroethane	18.72	1.0	20	0	93.6	73 - 128	18.55	0.908	20	
1,2-Dichloropropane	19.2	1.0	20	0	96.0	78 - 122	19.63	2.22	20	
1,3,5-Trimethylbenzene	20.85	1.0	20	0	104	75 - 124	18.41	12.4	20	
1,3-Dichlorobenzene	21.39	1.0	20	0	107	80 - 119	19.04	11.6	20	
1,3-Dichloropropane	20.41	1.0	20	0	102	80 - 119	20.12	1.44	20	
1,4-Dichlorobenzene	21	1.0	20	0	105	79 - 118	18.7	11.6	20	
2,2-Dichloropropane	15.98	1.0	20	0	79.9	60 - 139	15.7	1.77	20	
2-Butanone	37.22	2.0	40	0	93.0	56 - 143	37.62	1.07	20	
2-Chlorotoluene	19.68	1.0	20	0	98.4	79 - 122	17.52	11.6	20	
2-Hexanone	50.8	2.0	40	0	127	57 - 139	50.23	1.15	20	
4-Chlorotoluene	19.71	1.0	20	0	98.5	78 - 122	17.66	10.9	20	
4-Isopropyltoluene	22.02	1.0	20	0	110	77 - 127	19.3	13.2	20	
4-Methyl-2-pentanone	49.16	2.0	40	0	123	67 - 130	47.78	2.85	20	
Acetone	30.17	2.0	40	0	75.4	39 - 160	29.65	1.75	20	
Benzene	18.79	1.0	20	0	94.0	79 - 120	18.45	1.83	20	
Bromobenzene	20.06	1.0	20	0	100	80 - 120	18.55	7.82	20	
Bromochloromethane	17.24	1.0	20	0	86.2	78 - 123	17.26	0.152	20	
Bromodichloromethane	19.14	1.0	20	0	95.7	79 - 125	18.96	0.929	20	
Bromoform	23.03	1.0	20	0	115	66 - 130	22.44	2.58	20	
Bromomethane	10.16	1.0	20	0	50.8	53 - 141	11.3	10.6	20	S

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060208

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060251-02MSD** Units: **UG/L** Analysis Date: **08-Jun-2020 16:39**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611183** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	34.71	2.0	40	0	86.8	64 - 133	32.81	5.62	20	
Carbon tetrachloride	19.33	1.0	20	0	96.7	72 - 136	18.48	4.52	20	
Chlorobenzene	20.13	1.0	20	0	101	82 - 118	19.27	4.37	20	
Chloroethane	99.77	1.0	20	0	499	60 - 138	29.37	109	20	SR
Chloroform	17.11	1.0	20	0	85.5	79 - 124	16.54	3.36	20	
Chloromethane	11.3	1.0	20	0	56.5	50 - 139	11.88	5.03	20	
cis-1,2-Dichloroethene	42.71	1.0	20	24.9	89.1	78 - 123	42.09	1.47	20	
cis-1,3-Dichloropropene	19.39	1.0	20	0	97.0	75 - 124	18.72	3.54	20	
Dibromochloromethane	21.26	1.0	20	0	106	74 - 126	20.41	4.08	20	
Dibromomethane	19.54	1.0	20	0	97.7	79 - 123	19.24	1.57	20	
Dichlorodifluoromethane	10.31	1.0	20	0	51.5	32 - 152	9.776	5.31	20	
Ethylbenzene	20.82	1.0	20	0	104	79 - 121	20	4.01	20	
Hexachlorobutadiene	33.53	1.0	20	0	168	66 - 134	28.68	15.6	20	S
Isopropylbenzene	21.25	1.0	20	0	106	72 - 131	19.69	7.65	20	
m,p-Xylene	41.89	2.0	40	0	105	80 - 121	39.91	4.84	20	
Methylene chloride	16.58	2.0	20	0	82.9	74 - 124	16.29	1.73	20	
Naphthalene	41.28	1.0	20	0	206	61 - 128	30.36	30.5	20	SR
n-Butylbenzene	23.03	1.0	20	0	115	75 - 128	19.43	17	20	
n-Propylbenzene	20.88	1.0	20	0	104	76 - 126	18.47	12.2	20	
o-Xylene	21.17	1.0	20	0	106	78 - 122	20.09	5.23	20	
sec-Butylbenzene	21.68	1.0	20	0	108	77 - 126	18.9	13.7	20	
Styrene	20.98	1.0	20	0	105	78 - 123	19.84	5.63	20	
tert-Butylbenzene	21.32	1.0	20	0	107	78 - 124	18.58	13.7	20	
Tetrachloroethene	22.55	1.0	20	0	113	74 - 129	20.73	8.45	20	
Toluene	20.67	1.0	20	0	103	80 - 121	19.76	4.53	20	
trans-1,2-Dichloroethene	17.08	1.0	20	0	85.4	75 - 124	16.54	3.24	20	
trans-1,3-Dichloropropene	19.45	1.0	20	0	97.2	73 - 127	18.97	2.5	20	
Trichloroethene	28.7	1.0	20	8.405	101	79 - 123	28.66	0.133	20	
Trichlorofluoromethane	17.41	1.0	20	0	87.1	65 - 141	16.22	7.1	20	
Vinyl chloride	13.4	1.0	20	0	67.0	58 - 137	12.93	3.58	20	
Surr: 1,2-Dichloroethane-d4	*42.32*	*1.0*	*50*	*0*	*84.6*	*81 - 118*	*42.85*	*1.24*	*20*	
Surr: 4-Bromofluorobenzene	*49*	*1.0*	*50*	*0*	*98.0*	*85 - 114*	*51.02*	*4.04*	*20*	
Surr: Dibromofluoromethane	*43.87*	*1.0*	*50*	*0*	*87.7*	*80 - 119*	*44.39*	*1.17*	*20*	
Surr: Toluene-d8	*52.9*	*1.0*	*50*	*0*	*106*	*89 - 112*	*52.26*	*1.22*	*20*	

ALS Houston, US Date: 19-Jun-20

Client:	Bhate Environmental Associates, Inc.
Project:	LHAAP 18 24
WorkOrder:	HS20060208

QC BATCH REPORT

Batch ID:	**R362867 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20060208-04

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060208**

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
Illinois	2000322020-4	09-May-2021
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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060208

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060208-01	102_060320	Login	6/4/2020 2:34:26 PM	JRM	MET053
HS20060208-01	102_060320	Login	6/4/2020 2:34:26 PM	JRM	Sub
HS20060208-01	102_060320	Login	6/4/2020 2:34:26 PM	JRM	VOA126
HS20060208-02	129_060320	Login	6/4/2020 2:34:26 PM	JRM	MET053
HS20060208-02	129_060320	Login	6/4/2020 2:34:26 PM	JRM	Sub
HS20060208-02	129_060320	Login	6/4/2020 2:34:26 PM	JRM	EXT154
HS20060208-02	129_060320	Login	6/4/2020 2:34:26 PM	JRM	VOA126
HS20060208-03	120_060320	Login	6/4/2020 2:34:26 PM	JRM	MET092
HS20060208-03	120_060320	Login	6/4/2020 2:34:26 PM	JRM	Sub
HS20060208-03	120_060320	Login	6/4/2020 2:34:26 PM	JRM	EXT154
HS20060208-03	120_060320	Login	6/4/2020 2:34:26 PM	JRM	VOA126

ALS Houston, US Date: 19-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060208 **Date/Time Received:** 04-Jun-2020 09:10

Client Name: Bhate Environmental **Received by:** Nilesh D. Ranchod

Completed By: /S/ Jared R. Makan (eSignature) 03-Jun-2020 15:47 (Date/Time) **Reviewed by:** /S/ RJ Modashia (eSignature) 04-Jun-2020 15:50 (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):	1.8°C/1.8°C UC/C	IR25
Cooler(s)/Kit(s):	46040	
Date/Time sample(s) sent to storage:	06/03/2020 15:00	

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 received, not listed on COC. Logged in for analysis.

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: 1 of 1

Project/Phase No: NWO1312.0150

COC Number(1):

LIMS Number:

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: ~~Scott Pessinger~~ Kennie Moore

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	1,4 - DIOXANE							Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
102-060320	03Jun2020	0800	-	N		WG	5	X	X	X											
129-060320	03Jun2020	0915	-	N		WG	6	X	X	X	X										
120-060320	03Jun2020	1025	-	N		WG	5	X	X		X										
MW14-060320	03Jun2020	1140		N		WG	6	X	X	X	X										
			-																		
			-																		
			-																		
			-																		
			-																		
			-																		

Sample Analysis Requested [5] | Quality Assurance Samples [6]

HS20060208

Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS:

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Kennie Moore	6/3/20	1430	1. N/A	6.4.20	09.10
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 Stanhill 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

460(1)

Temp Blk 1.8

10x 25

CRO

Fed

TRK# 0221 1251 0297 2657

TX-US

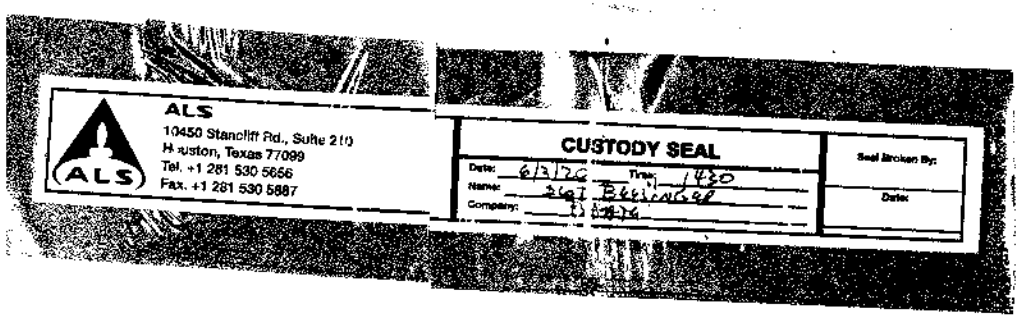
THU - 04 JUN 10:30A
PRIORITY OVERNIGHT

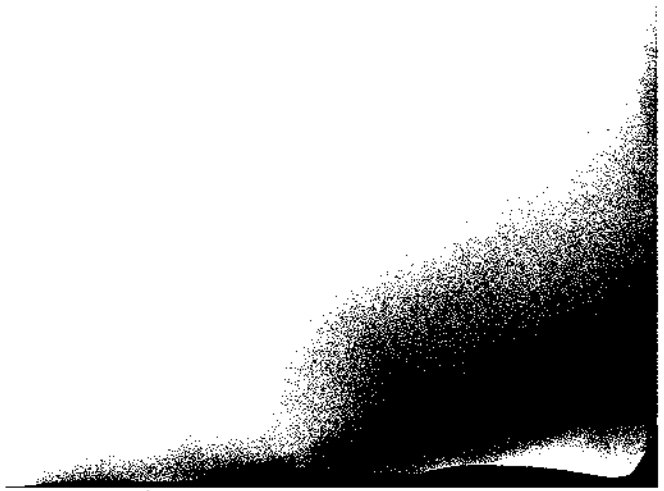
AB SGRA

77099
TX-US
IAH

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







CUSTODY SEAL

Date: 6/3/20 Time: 1430
Name: [illegible]
Company: [illegible]

Seal Broken By:

Date:

June 18, 2020 Service Request No:E2000494

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

Laboratory Results for: HS20060208

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 04, 2020
For your reference, these analyses have been assigned our service request number **E2000494.**

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.:**	E2000494
Project:	HS20060208	**Date Received:**	06/04/20
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

Four samples were received for analysis at ALS Environmental in Houston on 06/04/20.

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:

EQ2000228: 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.

Client: ALS Environmental - US **Service Request:**E2000494
Project: HS20060208

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000494-001	102_060320	6/3/2020	0800
E2000494-002	129_060320	6/3/2020	0915
E2000494-003	120_060320	6/3/2020	1025
E2000494-004	MW14_060320	6/3/2020	1140

Service Request Summary

Folder #: **E2000494**
Client Name: ALS Environmental - US
Project Name: HS20060208
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: 06/04/20
Internal Due Date: 6/18/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060208
EDD: No EDD Specified

4 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000494-001	102_060320	Ground Water	06/03/20 0800	**IV**
E2000494-002	129_060320	Ground Water	06/03/20 0915	**IV**
E2000494-003	120_060320	Ground Water	06/03/20 1025	**IV**
E2000494-004	MW14_060320	Ground Water	06/03/20 1140	**IV**

Service Request Summary

Folder #: **E2000494**
Client Name: ALS Environmental - US
Project Name: HS20060208
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: 06/04/20
Internal Due Date: 6/18/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060208
EDD: No EDD Specified

4 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	4	Level IV due 6/25, level II 6/18

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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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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Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **14040**

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: HS20060208
TSR: Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
	ANALYSIS REQUESTED			
1.	**HS20060208-01**	**102_060320**	**Groundwater**	**03 Jun 2020 08:00**
	SUB_Perch-6850			12 Jun 2020
2.	**HS20060208-02**	**129_060320**	**Groundwater**	**03 Jun 2020 09:15**
	SUB_Perch-6850			12 Jun 2020
3.	**HS20060208-03**	**120_060320**	**Groundwater**	**03 Jun 2020 10:25**
	SUB_Perch-6850			12 Jun 2020
4.	**HS20060208-04**	**MW14_060320**	**Groundwater**	**03 Jun 2020 11:40**
	SUB_Perch-6850			12 Jun 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. MACAN
Date/Time: 06/04/20

Received By:
Date/Time: 6/4/20 1945

Cooler ID(s):
Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist: CG

Client/Project: ALS-H

Thermometer ID: IR11

Date/Time Received: 6/14/16 Initials: CG

Date/Time Logged in: 6/14/16 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?
-		6/14/16	1540	CG	1.1	☒
						☐
						☐
						☐

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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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
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Phone (713)266-1599 Fax (713)266-0130
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Preparation Information Benchsheet

Prep Run#: 359781 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/9/20 09:50

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000493-001	18CPTMW12SW_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000493-002	18CPTWM12DW_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000493-003	MW7_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000493-004	MW9_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000493-005	18CPTMW23SW_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000493-006	18CPTMW23_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000493-007	18WW24_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000493-008	18WW14_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000494-001	102_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000494-002	129_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000494-003	120_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000494-004	MW14_060320	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000495-001	LH18/24-SP650_060220_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000496-001	LH18/24-SP140_060220	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000497-001	LH18/24-SP650_060220_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
16	EQ2000228-01	MB		6850/ClO4 DOD			Liquid	10mL	
17	EQ2000228-02	LCS		6850/ClO4 DOD			Liquid	10mL	
18	EQ2000228-03	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

EQ2000228-02 100.00µL EQ2000228-03 100.00µL

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

E2000493-001	1.00µL	E2000493-002	1.00µL	E2000493-003	1.00µL	E2000493-004	1.00µL	E2000493-005	1.00µL	E2000493-006	1.00µL
E2000493-007	1.00µL	E2000493-008	1.00µL	E2000494-001	1.00µL	E2000494-002	1.00µL	E2000494-003	1.00µL	E2000494-004	1.00µL
E2000495-001	1.00µL	E2000496-001	1.00µL	E2000497-001	1.00µL	EQ2000228-01	1.00µL	EQ2000228-02	1.00µL	EQ2000228-03	1.00µL

Preparation Steps

Step: Preparation
Started: 6/9/20 09:50
Finished: 6/9/20 13:43
By: GRIVERA
Comments

Preparation Information Benchsheet

Prep Run#: 359781
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/9/20 09:50

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Collected:**	6/ 3/20 0800
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	102_060320	**Units:**	µg/L
Lab Code:	E2000494-001	**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	**31.0**		0.100	0.0500	0.0250	1	6/ 9/20	6/16/20 16:26	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Collected:**	6/ 3/20 0915
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	129_060320	**Units:**	µg/L
Lab Code:	E2000494-002	**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	**3180**		10.0	5.00	2.50	100	6/ 9/20	6/17/20 11:03	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Collected:**	6/ 3/20 1025
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	120_060320	**Units:**	µg/L
Lab Code:	E2000494-003	**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	**12300**		50.0	25.0	12.5	500	6/ 9/20	6/17/20 11:11	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Collected:**	6/ 3/20 1140
Sample Matrix:	Ground Water	**Date Received:**	6/ 4/20
Sample Name:	MW14_060320	**Units:**	µg/L
Lab Code:	E2000494-004	**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	**158000**		500	250	125	5000	6/ 9/20	6/17/20 11:19	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000228-01	**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	6/ 9/20	6/16/20 14:31	359781	683950	

Accuracy & Precision

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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20
Sample Matrix:	Ground Water		

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	359781

	Lab Control Sample EQ2000228-02			Duplicate Lab Control Sample EQ2000228-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.114	0.100	114	0.114	0.100	114	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:**	E2000494
Project:	HS20060208	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000228-02	**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	**0.114**		0.100			1	6/ 9/20	6/16/20 14:39	359781	683950	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000228-03	**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	**0.114**		0.100			1	6/ 9/20	6/16/20 14:47	359781	683950	

Initial Calibration

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Phone (713)266-1599 Fax (713)266-0130
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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

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

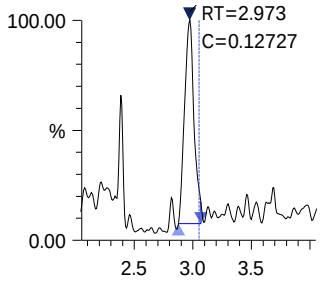
PERCHLORATE1

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

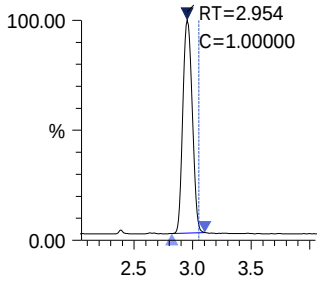
Perchlorate

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

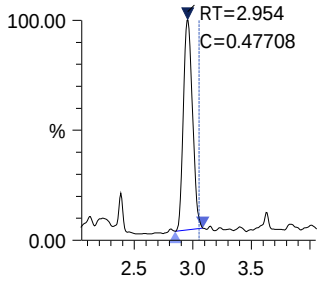
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

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

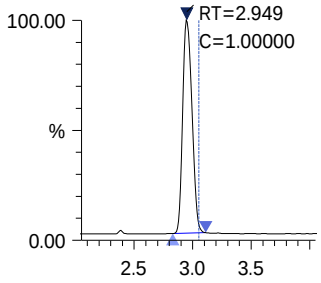
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



ALS Group Houston

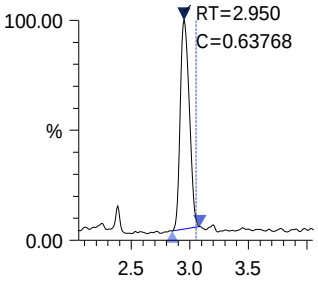
PERCHLORATE3

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

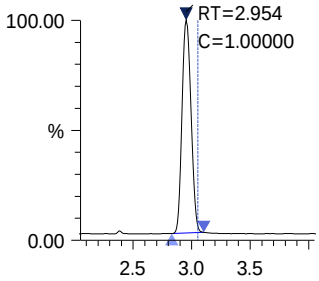
Perchlorate

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

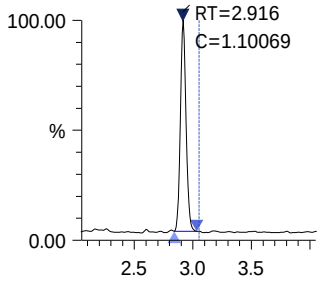
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	6/2/2020 4:05:28 PM	18119	1.10069	20200602_012	2.916	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE4	6/2/2020 4:05:28 PM	128706	1.00000	20200602_012	2.914	25.0000	1.0000	7

Perchlorate

Conc 1.10069

Area 18119

Q 99.00>83.00 (-) 5.42e3

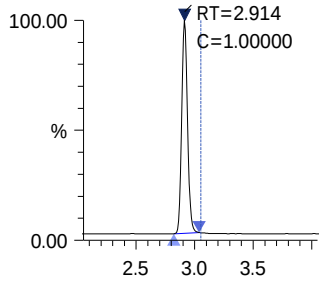


Sodium Perchlorate-18O4_IS

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

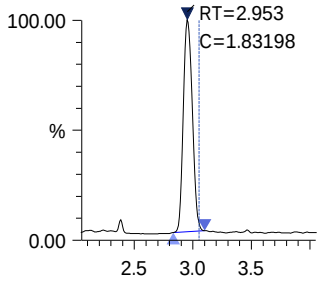
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/2/2020 4:13:21 PM	33971	1.83198	20200602_013	2.953	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/2/2020 4:13:21 PM	144982	1.00000	20200602_013	2.953	25.0000	1.0000	8

Perchlorate

Conc 1.83198

Area 33971

Q 99.00>83.00 (-) 6.29e3

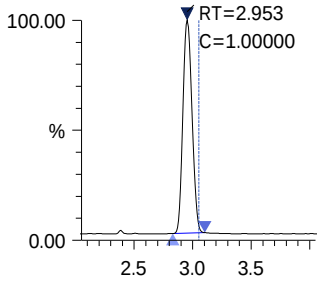


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 144982

ISTD 107.00>89.00 (-) 2.71e4



ALS Group Houston

PERCHLORATE6

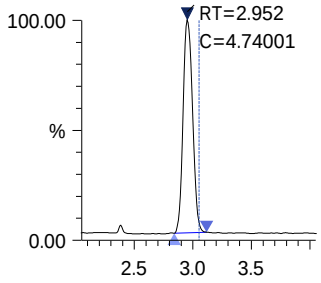
Date acquired: 6/2/2020 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_014.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

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

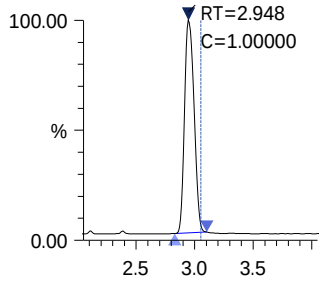
Q 99.00>83.00 (-) 1.50e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 140500

ISTD 107.00>89.00 (-) 2.51e4



ALS Group Houston

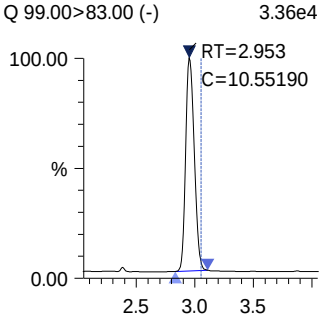
PERCHLORATE7

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

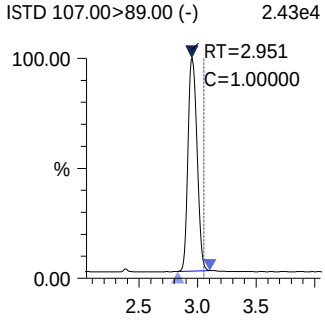
Perchlorate

Conc 10.55190
Area 173998



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 128928



ALS Group Houston

PERCHLORATE8

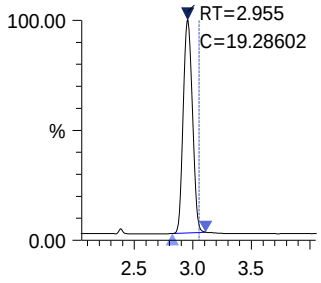
Date acquired: 6/2/2020 4:37:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_016.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

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

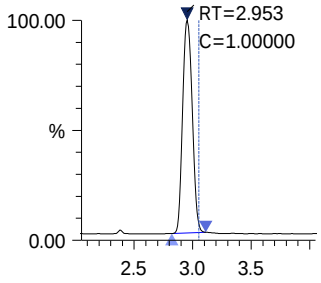
Q 99.00>83.00 (-) 5.85e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 131734

ISTD 107.00>89.00 (-) 2.34e4



ALS Group Houston

PERCHLORATE9

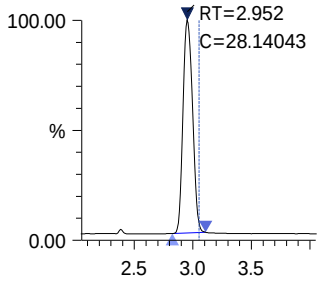
Date acquired: 6/2/2020 4:44:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

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

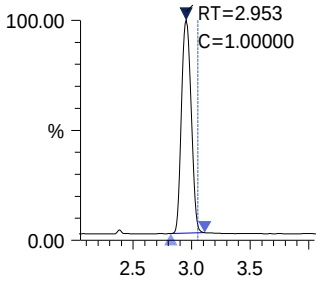
Q 99.00>83.00 (-) 8.16e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130327

ISTD 107.00>89.00 (-) 2.28e4



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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

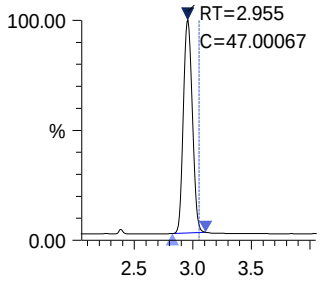
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE10	6/2/2020 4:52:49 PM	737362	47.00067	20200602_018	2.955	25.0000	1.0000	13
Sodium Perchlorate-18O4_IS	PERCHLORATE10	6/2/2020 4:52:49 PM	122661	1.00000	20200602_018	2.952	25.0000	1.0000	13

Perchlorate

Conc 47.00067

Area 737362

Q 99.00>83.00 (-) 1.36e5

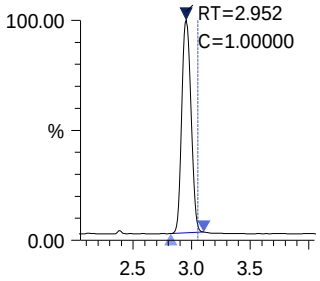


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

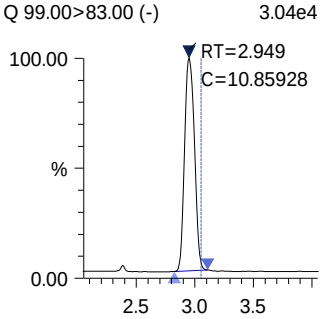
PERCHLORATEICV

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

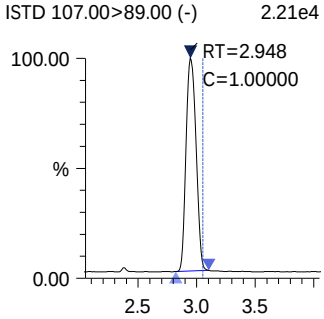
Perchlorate

Conc 10.85928
Area 180334



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 129839



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

20200616

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
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	null		20200616_002	Perchlorate6850b.lcm	1x	☒	
	null		20200616_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_005	Perchlorate6850b.lcm	1x	☒	
	IB		20200616_006	Perchlorate6850b.lcm	1x	☒	
	LODV		20200616_007	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_008	Perchlorate6850b.lcm	1x	☒	3100807-04
	ICS		20200616_009	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_010	Perchlorate6850b.lcm	1x	☒	
	E2000491-006		20200616_011	Perchlorate6850b.lcm	1x	☒	do not use
	E2000492-004		20200616_012	Perchlorate6850b.lcm	1x	☒	
	E2000492-005		20200616_013	Perchlorate6850b.lcm	1x	☒	
	E2000492-007		20200616_014	Perchlorate6850b.lcm	1x	☒	
	EQ2000227-02		20200616_015	Perchlorate6850b.lcm	1x	☒	
	E2000492-008		20200616_016	Perchlorate6850b.lcm	1x	☒	
	E2000491-005X2		20200616_017	Perchlorate6850b.lcm	2x	☒	
	E2000492-001X10		20200616_018	Perchlorate6850b.lcm	10x	☒	
	PERCHLORATE7		20200616_019	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000492-006X50		20200616_020	Perchlorate6850b.lcm	50x	☒	
	EQ2000228-01		20200616_021	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-02		20200616_022	Perchlorate6850b.lcm	1x	☒	
	EQ2000228-03		20200616_023	Perchlorate6850b.lcm	1x	☒	
	E2000493-001		20200616_024	Perchlorate6850b.lcm	1x	☒	
	E2000493-002		20200616_025	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_026	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000493-003		20200616_027	Perchlorate6850b.lcm	1x	☒	
	E2000493-004		20200616_028	Perchlorate6850b.lcm	1x	☒	
	E2000493-005		20200616_029	Perchlorate6850b.lcm	1x	☒	
	E2000493-006		20200616_030	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_031	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000493-007		20200616_032	Perchlorate6850b.lcm	1x	☒	
	E2000493-008		20200616_033	Perchlorate6850b.lcm	1x	☒	
	E2000494-001		20200616_034	Perchlorate6850b.lcm	1x	☒	
	E2000494-002		20200616_035	Perchlorate6850b.lcm	1x	☒	
	E2000494-003		20200616_036	Perchlorate6850b.lcm	1x	☒	
	E2000494-004		20200616_037	Perchlorate6850b.lcm	1x	☒	
	E2000495-001		20200616_038	Perchlorate6850b.lcm	1x	☒	
	E2000496-001		20200616_039	Perchlorate6850b.lcm	1x	☒	
	E2000497-001		20200616_040	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200616_041	Perchlorate6850b.lcm	1x	☒	3100807-04

20200617

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		20200617_001	Perchlorate6850b.lcm	1x	☒	
	null		20200617_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200617_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200617_004	Perchlorate6850b.lcm	1x	☒	
	LODV		20200617_005	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200617_006	Perchlorate6850b.lcm	1x	☒	3100807-04
	ICS		20200617_007	Perchlorate6850b.lcm	1x	☒	
	E2000493-005		20200617_008	Perchlorate6850b.lcm	1x	☒	
	E2000495-001		20200617_009	Perchlorate6850b.lcm	1x	☒	
	E2000497-001		20200617_010	Perchlorate6850b.lcm	1x	☒	
	E2000493-003X500		20200617_011	Perchlorate6850b.lcm	500x	☒	
	E2000493-004X20		20200617_012	Perchlorate6850b.lcm	20x	☒	
	E2000493-006X20		20200617_013	Perchlorate6850b.lcm	20x	☒	
	E2000494-002X100		20200617_014	Perchlorate6850b.lcm	100x	☒	
	E2000494-003X500		20200617_015	Perchlorate6850b.lcm	500x	☒	
	E2000494-004X5000		20200617_016	Perchlorate6850b.lcm	5000x	☒	
	PERCHLORATE7		20200617_017	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000496-001X200		20200617_018	Perchlorate6850b.lcm	200x	☒	
	E2000493-005		20200617_019	Perchlorate6850b.lcm	1x	☒	
	E2000495-001		20200617_020	Perchlorate6850b.lcm	1x	☒	
	E2000497-001		20200617_021	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200617_022	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20

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\20200616\20200616_019	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	0.1279		5.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20

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\20200616\20200616_026	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.6	0.1279		6.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20

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\20200616\20200616_031	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.2	0.1279		11.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20

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\20200616\20200616_041	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.3	0.1279		13.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/17/20

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\20200617\20200617_006	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279		8.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/17/20

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\20200617\20200617_017	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1279		10.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/17/20

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\20200617\20200617_022	**Calibration ID:**	EC2000007
		Analysis Lot:	683950
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1279		10.7	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20 14:15

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

File ID:	I:\LCMS01\DATA\20200616\20200616_019	**Lab Code:**	EQ2000242-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-01	121,207	3.04
Method Blank	EQ2000228-01	132,882	3.04
Lab Control Sample	EQ2000228-02	144,551	3.04
Duplicate Lab Control Sample	EQ2000228-03	143,510	3.04

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:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20 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\20200616\20200616_026	**Lab Code:**	EQ2000242-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-02	116,422	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:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20 16:02

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200616\20200616_031	**Lab Code:**	EQ2000242-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-03	108,679	3.04
102_060320	E2000494-001	127,690	3.03

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:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/16/20 17:21

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200616\20200616_041	**Lab Code:**	EQ2000242-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-04	111,059	3.03

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:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/17/20 10:00

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200617\20200617_006	**Lab Code:**	EQ2000242-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-05	164,082	3.03
129_060320	E2000494-002	159,447	3.03
120_060320	E2000494-003	168,369	3.01
MW14_060320	E2000494-004	155,220	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:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/17/20 11:27

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200617\20200617_017	**Lab Code:**	EQ2000242-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-06	177,876	3.03

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:**	E2000494
Project:	HS20060208	**Date Analyzed:**	6/17/20 12:07

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200617\20200617_022	**Lab Code:**	EQ2000242-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	683950
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	EQ2000242-07	167,560	3.03

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

ALS Group Houston

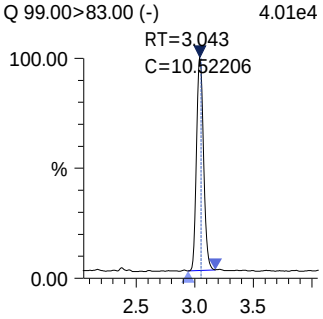
PERCHLORATE7

Date acquired: 6/16/2020 2:15:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_019.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	6/16/2020 2:15:37 PM	163116	10.52206	20200616_019	3.043	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 2:15:37 PM	121207	1.00000	20200616_019	3.039	25.0000	1.0000	4

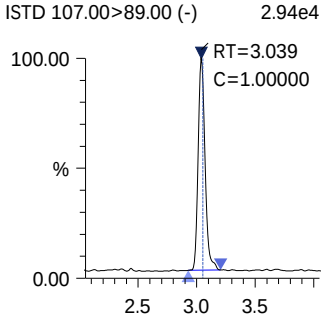
Perchlorate

Conc 10.52206
Area 163116



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 121207



ALS Group Houston

EQ2000228-01

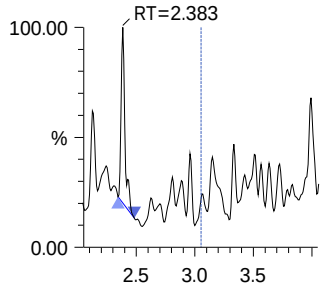
Date acquired: 6/16/2020 2:31:26 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_021.lcd
Vial: 33 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000228-01	6/16/2020 2:31:26 PM	----	----	20200616_021	----	25.0000	1.0000	33
Sodium Perchlorate-18O4_IS	EQ2000228-01	6/16/2020 2:31:26 PM	132882	1.00000	20200616_021	3.042	25.0000	1.0000	33

Perchlorate

Conc ----
Area ----

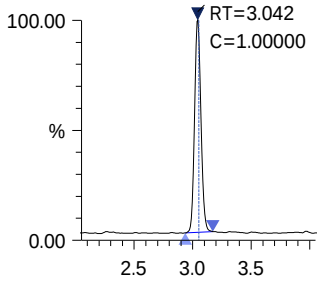
Q 99.00>83.00 (-) 8.78e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 132882

ISTD 107.00>89.00 (-) 3.46e4



ALS Group Houston

EQ2000228-02

Date acquired: 6/16/2020 2:39:18 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_022.lcd
Vial: 34 | Inj. Volume: 25.0000uL | Tray: 1

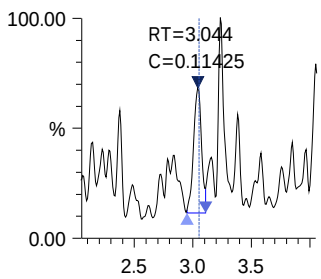
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000228-02	6/16/2020 2:39:18 PM	2112	0.11425	20200616_022	3.044	25.0000	1.0000	34
Sodium Perchlorate-18O4_IS	EQ2000228-02	6/16/2020 2:39:18 PM	144551	1.00000	20200616_022	3.040	25.0000	1.0000	34

Perchlorate

Conc 0.11425

Area 2112

Q 99.00>83.00 (-) 7.77e2

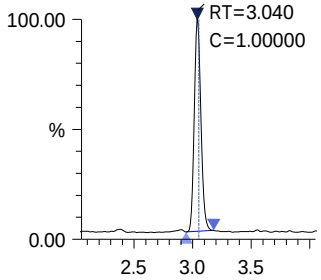


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 144551

ISTD 107.00>89.00 (-) 3.62e4



ALS Group Houston

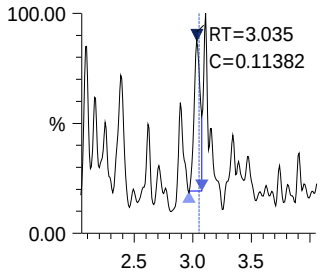
EQ2000228-03

Date acquired: 6/16/2020 2:47:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_023.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	EQ2000228-03	6/16/2020 2:47:11 PM	2089	0.11382	20200616_023	3.035	25.0000	1.0000	35
Sodium Perchlorate-18O4_IS	EQ2000228-03	6/16/2020 2:47:11 PM	143510	1.00000	20200616_023	3.041	25.0000	1.0000	35

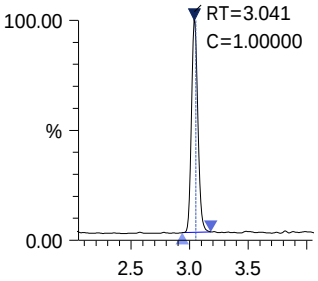
Perchlorate

Conc 0.11382
Area 2089
Q 99.00>83.00 (-) 8.57e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 143510
ISTD 107.00>89.00 (-) 3.73e4



ALS Group Houston

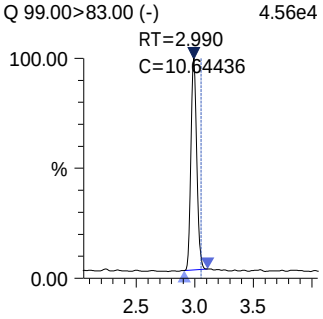
PERCHLORATE7

Date acquired: 6/16/2020 3:23:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200616\20200616_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	6/16/2020 3:23:02 PM	158498	10.64436	20200616_026	2.990	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/16/2020 3:23:02 PM	116422	1.00000	20200616_026	2.989	25.0000	1.0000	4

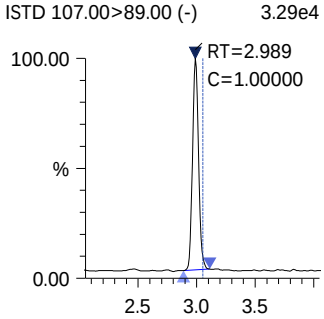
Perchlorate

Conc 10.64436
Area 158498



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 116422



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June 19, 2020

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

Work Order: **HS20060251**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

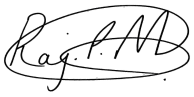
ALS Environmental received 7 sample(s) on Jun 05, 2020 for the analysis presented in the following report.

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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060251

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060251-01	18CPTMW14_060420	Groundwater		04-Jun-2020 07:35	05-Jun-2020 09:15	☐
HS20060251-02	18CPTMW24_060420	Groundwater		04-Jun-2020 08:25	05-Jun-2020 09:15	☐
HS20060251-03	18WW25_060420	Groundwater		04-Jun-2020 09:20	05-Jun-2020 09:15	☐
HS20060251-04	18WW10_060420	Groundwater		04-Jun-2020 10:50	05-Jun-2020 09:15	☐
HS20060251-05	MW13_060420	Groundwater		04-Jun-2020 11:45	05-Jun-2020 09:15	☐
HS20060251-06	CO2_060420	Groundwater		04-Jun-2020 12:35	05-Jun-2020 09:15	☐
HS20060251-07	Trip Blank	Water		04-Jun-2020 07:35	05-Jun-2020 09:15	☐

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060251

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: 154163

Sample ID: LCSD-154163

• LCSD RPD was above the control limits. The individual recoveries were in control.

GCMS Volatiles by Method SW8260

Batch ID: R362867

Sample ID: CCV

• 1,2-Dibromo-3-Chloropropane, 1,2,3-Trichlorobenzene and Naphthalene exceeded %D limits for CCV. Samples are ND for these compounds.

Sample ID: VLCSW-200608

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

Sample ID: 18CPTMW24_060420 (HS20060251-02MS)

• The recovery of the Matrix Spike (MS) and 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

Sample ID: 18CPTMW24_060420 (HS20060251-02MSD)

• The RPD between the MS and MSD was outside of the control limit.

Metals by Method SW7470

Batch ID: 154572

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

Metals by Method SW6020

Batch ID: 154157

Sample ID: HS20060114-01MS

• MS and MSD are for an unrelated sample

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW14_060420
Collection Date: 04-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-01
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-Jun-2020 15:27
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,2-Dichloroethane	**3.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jun-2020 15:27
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 15:27
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jun-2020 15:27
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jun-2020 15:27
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 15:27
Benzene	**2.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jun-2020 15:27
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jun-2020 15:27
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Chloroform	**8.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jun-2020 15:27

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW14_060420
Collection Date: 04-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-01
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-Jun-2020 15:27
cis-1,2-Dichloroethene	**51**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jun-2020 15:27
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jun-2020 15:27
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 15:27
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 15:27
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:27
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Tetrachloroethene	**1.4**		**0.30**	**1.0**	**1.0**	**UG/L**	1	08-Jun-2020 15:27
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
Trichloroethene	**840**		**5.0**	**12**	**25**	**UG/L**	25	08-Jun-2020 17:27
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:27
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:27
Surr: 1,2-Dichloroethane-d4	*86.6*			**0**	*81-118*	*%REC*	*1*	*08-Jun-2020 15:27*
Surr: 1,2-Dichloroethane-d4	*83.5*			**0**	*81-118*	*%REC*	*25*	*08-Jun-2020 17:27*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*08-Jun-2020 15:27*
Surr: 4-Bromofluorobenzene	*99.6*			**0**	*85-114*	*%REC*	*25*	*08-Jun-2020 17:27*
Surr: Dibromofluoromethane	*90.8*			**0**	*80-119*	*%REC*	*1*	*08-Jun-2020 15:27*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*25*	*08-Jun-2020 17:27*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*08-Jun-2020 15:27*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*25*	*08-Jun-2020 17:27*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**2.3**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 21:16
Surr: 2-Fluorobiphenyl	*60.8*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:16*
Surr: 4-Terphenyl-d14	*65.9*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:16*
Surr: Nitrobenzene-d5	*62.0*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:16*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW14_060420
Collection Date: 04-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.393**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	10-Jun-2020 15:34
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	10-Jun-2020 15:34
Arsenic	**0.00168**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
Barium	**6.90**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	10-Jun-2020 16:09
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jun-2020 15:34
Cadmium	**0.000307**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	10-Jun-2020 15:34
Calcium	**459**		**0.680**	**1.00**	**10.0**	**mg/L**	20	10-Jun-2020 16:09
Chromium	**0.00994**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
Cobalt	**0.0146**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
Copper	**0.00129**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
Iron	**2.16**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:34
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	10-Jun-2020 15:34
Magnesium	**160**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:34
Manganese	**0.785**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
Nickel	**0.00820**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
Potassium	**15.3**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:34
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	10-Jun-2020 15:34
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	10-Jun-2020 15:34
Sodium	**583**		**0.280**	**1.00**	**4.00**	**mg/L**	20	10-Jun-2020 16:09
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jun-2020 15:34
Vanadium	**0.00167**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
Zinc	**0.00769**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:34
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 17-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	17-Jun-2020 16:09
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2020 12:24

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW24_060420
Collection Date: 04-Jun-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 15:03
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jun-2020 15:03
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jun-2020 15:03
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 15:03
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jun-2020 15:03
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW24_060420
Collection Date: 04-Jun-2020 08:25

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-02
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-Jun-2020 15:03
cis-1,2-Dichloroethene	**25**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jun-2020 15:03
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jun-2020 15:03
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 15:03
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 15:03
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 15:03
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
Trichloroethene	**8.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	08-Jun-2020 15:03
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 15:03
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 15:03
Surr: 1,2-Dichloroethane-d4	*86.2*			**0**	*81-118*	*%REC*	*1*	*08-Jun-2020 15:03*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*08-Jun-2020 15:03*
Surr: Dibromofluoromethane	*89.3*			**0**	*80-119*	*%REC*	*1*	*08-Jun-2020 15:03*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*08-Jun-2020 15:03*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.96**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 21:36
Surr: 2-Fluorobiphenyl	*77.3*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:36*
Surr: 4-Terphenyl-d14	*93.7*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:36*
Surr: Nitrobenzene-d5	*104*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:36*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2020 12:24

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW25_060420
Collection Date: 04-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-03
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	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 17:51
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jun-2020 17:51
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jun-2020 17:51
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 17:51
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jun-2020 17:51
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW25_060420
Collection Date: 04-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-03
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-Jun-2020 17:51
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 17:51
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 17:51
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 17:51
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 17:51
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 17:51
Surr: 1,2-Dichloroethane-d4	*84.1*			**0**	*81-118*	*%REC*	*1*	*08-Jun-2020 17:51*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*08-Jun-2020 17:51*
Surr: Dibromofluoromethane	*87.3*			**0**	*80-119*	*%REC*	*1*	*08-Jun-2020 17:51*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*08-Jun-2020 17:51*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.6**		**0.10**	**0.10**	**0.10**	**ug/L**	10	18-Jun-2020 21:55
Surr: 2-Fluorobiphenyl	*66.8*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:55*
Surr: 4-Terphenyl-d14	*83.8*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:55*
Surr: Nitrobenzene-d5	*67.6*			**0**	*40-140*	*%REC*	*10*	*18-Jun-2020 21:55*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW25_060420
Collection Date: 04-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0713**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	10-Jun-2020 15:36
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	10-Jun-2020 15:36
Arsenic	**0.00873**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	10-Jun-2020 15:36
Barium	**0.379**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:36
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jun-2020 15:36
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jun-2020 15:36
Calcium	**17.7**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	10-Jun-2020 15:36
Chromium	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	10-Jun-2020 15:36
Cobalt	**0.00199**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	10-Jun-2020 15:36
Copper	**0.00158**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:36
Iron	**47.0**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:36
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	10-Jun-2020 15:36
Magnesium	**11.0**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:36
Manganese	**2.54**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	10-Jun-2020 16:11
Nickel	**0.00130**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	10-Jun-2020 15:36
Potassium	**1.27**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:36
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	10-Jun-2020 15:36
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	10-Jun-2020 15:36
Sodium	**38.1**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:36
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jun-2020 15:36
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	10-Jun-2020 15:36
Zinc	**0.00596**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:36
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 17-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	17-Jun-2020 16:14
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2020 12:24

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW10_060420
Collection Date: 04-Jun-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-04
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-Jun-2020 18:15
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 18:15
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jun-2020 18:15
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jun-2020 18:15
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 18:15
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jun-2020 18:15
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW10_060420
Collection Date: 04-Jun-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-04
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-Jun-2020 18:15
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 18:15
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 18:15
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:15
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:15
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:15
Surr: 1,2-Dichloroethane-d4	*86.2*			**0**	*81-118*	*%REC*	*1*	*08-Jun-2020 18:15*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*08-Jun-2020 18:15*
Surr: Dibromofluoromethane	*89.6*			**0**	*80-119*	*%REC*	*1*	*08-Jun-2020 18:15*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*08-Jun-2020 18:15*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 05-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.68**		**0.10**	**0.10**	**0.10**	**ug/L**	10	19-Jun-2020 15:10
Surr: 2-Fluorobiphenyl	*61.7*			**0**	*40-140*	*%REC*	*10*	*19-Jun-2020 15:10*
Surr: 4-Terphenyl-d14	*79.7*			**0**	*40-140*	*%REC*	*10*	*19-Jun-2020 15:10*
Surr: Nitrobenzene-d5	*92.6*			**0**	*40-140*	*%REC*	*10*	*19-Jun-2020 15:10*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2020 12:24

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW13_060420
Collection Date: 04-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 18:39
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jun-2020 18:39
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jun-2020 18:39
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 18:39
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jun-2020 18:39
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW13_060420
Collection Date: 04-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-05
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-Jun-2020 18:39
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 18:39
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 18:39
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 18:39
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 18:39
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 18:39
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*1*	*08-Jun-2020 18:39*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*08-Jun-2020 18:39*
Surr: Dibromofluoromethane	*89.7*			**0**	*80-119*	*%REC*	*1*	*08-Jun-2020 18:39*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*08-Jun-2020 18:39*

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW13_060420
Collection Date: 04-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 05-Jun-2020		Analyst: JHD
Aluminum	**0.0585**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	10-Jun-2020 15:41
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	10-Jun-2020 15:41
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	10-Jun-2020 15:41
Barium	**0.514**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:41
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jun-2020 15:41
Cadmium	**0.000346**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	10-Jun-2020 15:41
Calcium	**25.6**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	10-Jun-2020 15:41
Chromium	**0.0377**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	10-Jun-2020 15:41
Cobalt	**0.000534**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	10-Jun-2020 15:41
Copper	**0.00320**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:41
Iron	**82.1**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:41
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	10-Jun-2020 15:41
Magnesium	**13.4**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:41
Manganese	**1.32**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:41
Nickel	**0.0319**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	10-Jun-2020 15:41
Potassium	**3.38**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:41
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	10-Jun-2020 15:41
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	10-Jun-2020 15:41
Sodium	**89.2**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	10-Jun-2020 15:41
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jun-2020 15:41
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	10-Jun-2020 15:41
Zinc	**0.00614**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	10-Jun-2020 15:41
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 17-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	17-Jun-2020 16:16
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2020 12:24

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO2_060420
Collection Date: 04-Jun-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-06
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	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 19:03
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jun-2020 19:03
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jun-2020 19:03
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 19:03
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jun-2020 19:03
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO2_060420
Collection Date: 04-Jun-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-06
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-Jun-2020 19:03
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 19:03
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 19:03
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 19:03
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 19:03
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 19:03
Surr: 1,2-Dichloroethane-d4	*85.1*			**0**	*81-118*	*%REC*	*1*	*08-Jun-2020 19:03*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*08-Jun-2020 19:03*
Surr: Dibromofluoromethane	*88.0*			**0**	*80-119*	*%REC*	*1*	*08-Jun-2020 19:03*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*08-Jun-2020 19:03*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2020 12:24

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060251

Sample ID: Trip Blank Lab ID:HS20060251-07

Collection Date: 04-Jun-2020 07:35 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-Jun-2020 14:39
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 14:39
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	08-Jun-2020 14:39
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	08-Jun-2020 14:39
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 14:39
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	08-Jun-2020 14:39
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39

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

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 04-Jun-2020 07:35

ANALYTICAL REPORT
WorkOrder:HS20060251
Lab ID:HS20060251-07
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-Jun-2020 14:39
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	08-Jun-2020 14:39
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	08-Jun-2020 14:39
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	08-Jun-2020 14:39
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	08-Jun-2020 14:39
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	08-Jun-2020 14:39
Surr: 1,2-Dichloroethane-d4	*84.9*			**0**	*81-118*	*%REC*	*1*	*08-Jun-2020 14:39*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*08-Jun-2020 14:39*
Surr: Dibromofluoromethane	*89.7*			**0**	*80-119*	*%REC*	*1*	*08-Jun-2020 14:39*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*08-Jun-2020 14:39*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

Batch ID: 154157 **Start Date:** 05 Jun 2020 10:00 **End Date:** 05 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060251-01		10 (mL)	10 (mL)	1
HS20060251-03		10 (mL)	10 (mL)	1
HS20060251-05		10 (mL)	10 (mL)	1

Batch ID: 154163 **Start Date:** 05 Jun 2020 10:30 **End Date:** 05 Jun 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
HS20060251-01	1	1000 (mL)	1 (mL)	0.001
HS20060251-02	1	1000 (mL)	1 (mL)	0.001
HS20060251-03	1	1000 (mL)	1 (mL)	0.001
HS20060251-04	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154572 **Start Date:** 17 Jun 2020 10:00 **End Date:** 17 Jun 2020 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060251-01		10 (mL)	10 (mL)	1
HS20060251-03		10 (mL)	10 (mL)	1
HS20060251-05		10 (mL)	10 (mL)	1

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154157 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060251-01	18CPTMW14_060420	04 Jun 2020 07:35		05 Jun 2020 16:00	10 Jun 2020 16:09	20
HS20060251-01	18CPTMW14_060420	04 Jun 2020 07:35		05 Jun 2020 16:00	10 Jun 2020 15:34	1
HS20060251-03	18WW25_060420	04 Jun 2020 09:20		05 Jun 2020 16:00	10 Jun 2020 16:11	20
HS20060251-03	18WW25_060420	04 Jun 2020 09:20		05 Jun 2020 16:00	10 Jun 2020 15:36	1
HS20060251-05	MW13_060420	04 Jun 2020 11:45		05 Jun 2020 16:00	10 Jun 2020 15:41	1
Batch ID: 154163 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060251-01	18CPTMW14_060420	04 Jun 2020 07:35		05 Jun 2020 13:59	18 Jun 2020 21:16	10
HS20060251-02	18CPTMW24_060420	04 Jun 2020 08:25		05 Jun 2020 13:59	18 Jun 2020 21:36	10
HS20060251-03	18WW25_060420	04 Jun 2020 09:20		05 Jun 2020 13:59	18 Jun 2020 21:55	10
HS20060251-04	18WW10_060420	04 Jun 2020 10:50		05 Jun 2020 13:59	19 Jun 2020 15:10	10
Batch ID: 154572 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060251-01	18CPTMW14_060420	04 Jun 2020 07:35		17 Jun 2020 10:00	17 Jun 2020 16:09	1
HS20060251-03	18WW25_060420	04 Jun 2020 09:20		17 Jun 2020 10:00	17 Jun 2020 16:14	1
HS20060251-05	MW13_060420	04 Jun 2020 11:45		17 Jun 2020 10:00	17 Jun 2020 16:16	1
Batch ID: R362867 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060251-07	Trip Blank	04 Jun 2020 07:35			08 Jun 2020 14:39	1
Batch ID: R362867 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060251-01	18CPTMW14_060420	04 Jun 2020 07:35			08 Jun 2020 17:27	25
HS20060251-01	18CPTMW14_060420	04 Jun 2020 07:35			08 Jun 2020 15:27	1
HS20060251-02	18CPTMW24_060420	04 Jun 2020 08:25			08 Jun 2020 15:03	1
HS20060251-03	18WW25_060420	04 Jun 2020 09:20			08 Jun 2020 17:51	1
HS20060251-04	18WW10_060420	04 Jun 2020 10:50			08 Jun 2020 18:15	1
HS20060251-05	MW13_060420	04 Jun 2020 11:45			08 Jun 2020 18:39	1
HS20060251-06	CO2_060420	04 Jun 2020 12:35			08 Jun 2020 19:03	1
Batch ID: R363580 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060251-01	18CPTMW14_060420	04 Jun 2020 07:35			19 Jun 2020 12:24	1
HS20060251-02	18CPTMW24_060420	04 Jun 2020 08:25			19 Jun 2020 12:24	1
HS20060251-03	18WW25_060420	04 Jun 2020 09:20			19 Jun 2020 12:24	1
HS20060251-04	18WW10_060420	04 Jun 2020 10:50			19 Jun 2020 12:24	1
HS20060251-05	MW13_060420	04 Jun 2020 11:45			19 Jun 2020 12:24	1
HS20060251-06	CO2_060420	04 Jun 2020 12:35			19 Jun 2020 12:24	1

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154157 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154157** Units: **mg/L** Analysis Date: **10-Jun-2020 14:34**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613660** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.05595	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154157 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154157** Units: **mg/L** Analysis Date: **10-Jun-2020 14:40**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613662** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1071	0.0100	0.1	0	107	84 - 117				
Antimony	0.05061	0.00500	0.05	0	101	85 - 117				
Arsenic	0.0513	0.00500	0.05	0	103	84 - 116				
Barium	0.04884	0.00500	0.05	0	97.7	86 - 114				
Beryllium	0.05044	0.00200	0.05	0	101	83 - 121				
Cadmium	0.05192	0.00200	0.05	0	104	87 - 115				
Calcium	4.982	0.500	5	0	99.6	87 - 118				
Chromium	0.04969	0.00500	0.05	0	99.4	85 - 116				
Cobalt	0.05059	0.00500	0.05	0	101	86 - 115				
Copper	0.05079	0.00500	0.05	0	102	85 - 118				
Iron	4.945	0.200	5	0	98.9	87 - 118				
Lead	0.04804	0.00500	0.05	0	96.1	88 - 115				
Magnesium	5.163	0.200	5	0	103	83 - 118				
Manganese	0.05037	0.00500	0.05	0	101	87 - 115				
Nickel	0.05112	0.00500	0.05	0	102	85 - 117				
Potassium	5.11	0.200	5	0	102	87 - 115				
Selenium	0.0533	0.00500	0.05	0	107	80 - 120				
Silver	0.04452	0.00500	0.05	0	89.0	85 - 116				
Sodium	5.227	0.200	5	0	105	85 - 117				
Thallium	0.04324	0.00200	0.05	0	86.5	82 - 116				
Vanadium	0.04928	0.00500	0.05	0	98.6	86 - 115				
Zinc	0.05403	0.00500	0.05	0	108	83 - 119				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154157 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060114-01MS** Units: **mg/L** Analysis Date: **10-Jun-2020 16:19**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613909** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1657	0.0100	0.1	0.05214	114	84 - 117				
Antimony	0.05472	0.00500	0.05	0	109	85 - 117				
Arsenic	0.05328	0.00500	0.05	0.000773	105	84 - 116				
Barium	0.1983	0.00500	0.05	0.1436	109	86 - 114				
Beryllium	0.05177	0.00200	0.05	0	104	83 - 121				
Cadmium	0.05055	0.00200	0.05	0	101	87 - 115				
Calcium	14.33	0.500	5	8.949	108	87 - 118				
Chromium	0.0502	0.00500	0.05	0.002503	95.4	85 - 116				
Cobalt	0.05077	0.00500	0.05	0.001664	98.2	86 - 115				
Copper	0.05104	0.00500	0.05	0.001473	99.1	85 - 118				
Iron	5.144	0.200	5	0.3007	96.9	87 - 118				
Lead	0.05012	0.00500	0.05	0	100	88 - 115				
Magnesium	18.29	0.200	5	12.75	111	83 - 118				
Manganese	0.1536	0.00500	0.05	0.09894	109	87 - 115				
Nickel	0.05272	0.00500	0.05	0.004108	97.2	85 - 117				
Potassium	6.438	0.200	5	1.303	103	87 - 115				
Selenium	0.0486	0.00500	0.05	0	97.2	80 - 120				
Silver	0.04254	0.00500	0.05	0	85.1	85 - 116				
Sodium	282.8	0.200	5	260.1	454	85 - 117				SEO
Thallium	0.04563	0.00200	0.05	0	91.3	82 - 116				
Vanadium	0.04952	0.00500	0.05	0.00063	97.8	86 - 115				
Zinc	0.09514	0.00500	0.05	0.04	110	83 - 119				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154157 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060114-01MSD** Units: **mg/L** Analysis Date: **10-Jun-2020 16:21**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613910** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1556	0.0100	0.1	0.05214	103	84 - 117	0.1657	6.3	20	
Antimony	0.05229	0.00500	0.05	0	105	85 - 117	0.05472	4.53	20	
Arsenic	0.05175	0.00500	0.05	0.000773	102	84 - 116	0.05328	2.92	20	
Barium	0.2002	0.00500	0.05	0.1436	113	86 - 114	0.1983	0.971	20	
Beryllium	0.05057	0.00200	0.05	0	101	83 - 121	0.05177	2.34	20	
Cadmium	0.04964	0.00200	0.05	0	99.3	87 - 115	0.05055	1.82	20	
Calcium	14.15	0.500	5	8.949	104	87 - 118	14.33	1.21	20	
Chromium	0.0494	0.00500	0.05	0.002503	93.8	85 - 116	0.0502	1.6	20	
Cobalt	0.04927	0.00500	0.05	0.001664	95.2	86 - 115	0.05077	2.98	20	
Copper	0.04916	0.00500	0.05	0.001473	95.4	85 - 118	0.05104	3.76	20	
Iron	4.947	0.200	5	0.3007	92.9	87 - 118	5.144	3.9	20	
Lead	0.04816	0.00500	0.05	0	96.3	88 - 115	0.05012	3.99	20	
Magnesium	17.95	0.200	5	12.75	104	83 - 118	18.29	1.9	20	
Manganese	0.1493	0.00500	0.05	0.09894	101	87 - 115	0.1536	2.85	20	
Nickel	0.05134	0.00500	0.05	0.004108	94.5	85 - 117	0.05272	2.64	20	
Potassium	6.323	0.200	5	1.303	100	87 - 115	6.438	1.81	20	
Selenium	0.04911	0.00500	0.05	0	98.2	80 - 120	0.0486	1.06	20	
Silver	0.04225	0.00500	0.05	0	84.5	85 - 116	0.04254	0.686	20	S
Sodium	279.9	0.200	5	260.1	398	85 - 117	282.8	1.01	20	SEO
Thallium	0.04415	0.00200	0.05	0	88.3	82 - 116	0.04563	3.29	20	
Vanadium	0.04782	0.00500	0.05	0.00063	94.4	86 - 115	0.04952	3.5	20	
Zinc	0.0914	0.00500	0.05	0.04	103	83 - 119	0.09514	4.02	20	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154157 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060114-01PDS** Units: **mg/L** Analysis Date: **10-Jun-2020 16:23**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613911** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1403	0.0100	0.1	0.05214	88.1	80 - 120				
Antimony	0.09917	0.00500	0.1	0.000319	98.9	80 - 120				
Arsenic	0.1055	0.00500	0.1	0.000773	105	80 - 120				
Barium	0.2498	0.00500	0.1	0.1436	106	80 - 120				
Beryllium	0.09843	0.00200	0.1	0.000006	98.4	80 - 120				
Cadmium	0.1001	0.00200	0.1	0.000078	100	80 - 120				
Calcium	18.91	0.500	10	8.949	99.7	80 - 120				
Chromium	0.09782	0.00500	0.1	0.002503	95.3	80 - 120				
Cobalt	0.09806	0.00500	0.1	0.001664	96.4	80 - 120				
Copper	0.0988	0.00500	0.1	0.001473	97.3	80 - 120				
Iron	9.744	0.200	10	0.3007	94.4	80 - 120				
Lead	0.09826	0.00500	0.1	0.000067	98.2	80 - 120				
Magnesium	22.53	0.200	10	12.75	97.9	80 - 120				
Manganese	0.1988	0.00500	0.1	0.09894	99.8	80 - 120				
Nickel	0.09943	0.00500	0.1	0.004108	95.3	80 - 120				
Potassium	11.06	0.200	10	1.303	97.6	80 - 120				
Selenium	0.1008	0.00500	0.1	0.000544	100	80 - 120				
Thallium	0.0956	0.00200	0.1	-0.000009	95.6	80 - 120				
Vanadium	0.09678	0.00500	0.1	0.00063	96.1	80 - 120				
Zinc	0.1454	0.00500	0.1	0.04	105	80 - 120				

PDS Sample ID: **HS20060114-01PDS** Units: **mg/L** Analysis Date: **15-Jun-2020 16:23**
Client ID: Run ID: **ICPMS05_363235** SeqNo: **5619462** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	0.08838	0.00500	0.1	0	88.4	80 - 120				

PDS Sample ID: **HS20060114-01PDS** Units: **mg/L** Analysis Date: **10-Jun-2020 16:54**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613922** PrepDate: **05-Jun-2020** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	449.2	2.00	200	260.3	94.5	80 - 120				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154157 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060114-01SD** Units: **mg/L** Analysis Date: **10-Jun-2020 16:16**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613908** PrepDate: **05-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Antimony	0.00250	0.0250					0.000319	0	10	U
Arsenic	0.00250	0.0250					0.000773	0	10	U
Barium	0.1369	0.0250					0.1436	4.66	10	
Beryllium	0.00250	0.0100					0.000006	0	10	U
Cadmium	0.00250	0.0100					0.000078	0	10	U
Calcium	8.711	2.50					8.949	2.66	10	
Chromium	0.002303	0.0250					0.002503	0	10	J
Cobalt	0.001667	0.0250					0.001664	0	10	J
Copper	0.0125	0.0250					0.001473	0	10	U
Iron	0.3184	1.00					0.3007	0	10	J
Lead	0.00500	0.0250					0.000067	0	10	U
Magnesium	12.14	1.00					12.75	4.74	10	
Manganese	0.09473	0.0250					0.09894	4.26	10	
Nickel	0.004454	0.0250					0.004108	0	10	J
Potassium	1.319	1.00					1.303	1.22	10	
Selenium	0.0125	0.0250					0.000544	0	10	U
Silver	0.00250	0.0250					0.000002	0	10	U
Thallium	0.00250	0.0100					-0.000009	0	10	U
Vanadium	0.00500	0.0250					0.00063	0	10	U
Zinc	0.04324	0.0250					0.04	8.12	10	

SD Sample ID: **HS20060114-01SD** Units: **mg/L** Analysis Date: **10-Jun-2020 16:52**
Client ID: Run ID: **ICPMS05_362980** SeqNo: **5613921** PrepDate: **05-Jun-2020** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Sodium	269.8	10.0					260.3	3.66	10	

The following samples were analyzed in this batch: HS20060251-01 HS20060251-03 HS20060251-05

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154572 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154572** Units: **mg/L** Analysis Date: **17-Jun-2020 15:32**
Client ID: Run ID: **HG03_363439** SeqNo: **5623672** PrepDate: **17-Jun-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-154572** Units: **mg/L** Analysis Date: **17-Jun-2020 15:34**
Client ID: Run ID: **HG03_363439** SeqNo: **5623673** PrepDate: **17-Jun-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: **HS20060574-05MS** Units: **mg/L** Analysis Date: **17-Jun-2020 15:38**
Client ID: Run ID: **HG03_363439** SeqNo: **5623675** PrepDate: **17-Jun-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	0.00002100	101	75 - 125				

MSD Sample ID: **HS20060574-05MSD** Units: **mg/L** Analysis Date: **17-Jun-2020 15:40**
Client ID: Run ID: **HG03_363439** SeqNo: **5623676** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00504	0.000200	0.005	0.00002100	100	75 - 125	0.005050	0.198	20	

The following samples were analyzed in this batch: HS20060251-01 HS20060251-03 HS20060251-05

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: 154163 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 11:44**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627371** PrepDate: **05-Jun-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	*0.07849*	*0*	*0.08*	*0*	*98.1*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0791*	*0*	*0.08*	*0*	*98.9*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07929*	*0*	*0.08*	*0*	*99.1*	*40 - 140*				

LCS Sample ID: **LCS-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 12:03**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627372** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.07118	0.010	0.08	0	89.0	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08107*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08274*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.1035*	*0*	*0.08*	*0*	*129*	*40 - 140*				

LCSD Sample ID: **LCSD-154163** Units: **ug/L** Analysis Date: **18-Jun-2020 12:23**
Client ID: Run ID: **SV-6_363518** SeqNo: **5627373** PrepDate: **05-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.06157	0.010	0.08	0	77.0	40 - 140	0.07118	14.5	20	
Surr: 2-Fluorobiphenyl	*0.08394*	*0*	*0.08*	*0*	*105*	*40 - 140*	*0.08107*	*3.47*	*20*	
Surr: 4-Terphenyl-d14	*0.08169*	*0*	*0.08*	*0*	*102*	*40 - 140*	*0.08274*	*1.28*	*20*	
Surr: Nitrobenzene-d5	*0.05779*	*0*	*0.08*	*0*	*72.2*	*40 - 140*	*0.1035*	*56.7*	*20*	R

The following samples were analyzed in this batch: HS20060251-01 HS20060251-02 HS20060251-03 HS20060251-04

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 14:15**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611177** 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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 14:15**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611177** 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	*42.14*	*1.0*	*50*	*0*	*84.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.06*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*43.24*	*1.0*	*50*	*0*	*86.5*	*80 - 119*				
Surr: Toluene-d8	*53.03*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 13:27**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611176** 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	20.89	1.0	20	0	104	78 - 124				
1,1,1-Trichloroethane	20.03	1.0	20	0	100	74 - 131				
1,1,2,2-Tetrachloroethane	21.13	1.0	20	0	106	71 - 121				
1,1,2-Trichloroethane	21.15	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	20.36	1.0	20	0	102	77 - 125				
1,1-Dichloroethene	20.15	1.0	20	0	101	71 - 131				
1,1-Dichloropropene	18.49	1.0	20	0	92.5	78 - 125				
1,2,3-Trichlorobenzene	31.48	1.0	20	0	157	69 - 129				S
1,2,3-Trichloropropane	21.75	1.0	20	0	109	73 - 122				
1,2,4-Trichlorobenzene	27.92	1.0	20	0	140	69 - 130				S
1,2,4-Trimethylbenzene	19.21	1.0	20	0	96.0	76 - 124				
1,2-Dibromo-3-chloropropane	30.18	1.0	20	0	151	62 - 128				S
1,2-Dibromoethane	21.68	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	20.71	1.0	20	0	104	80 - 119				
1,2-Dichloroethane	21.44	1.0	20	0	107	73 - 128				
1,2-Dichloropropane	20.65	1.0	20	0	103	78 - 122				
1,3,5-Trimethylbenzene	18.76	1.0	20	0	93.8	75 - 124				
1,3-Dichlorobenzene	19.56	1.0	20	0	97.8	80 - 119				
1,3-Dichloropropane	20.84	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	19.27	1.0	20	0	96.3	79 - 118				
2,2-Dichloropropane	20.05	1.0	20	0	100	60 - 139				
2-Butanone	46.24	2.0	40	0	116	56 - 143				
2-Chlorotoluene	18	1.0	20	0	90.0	79 - 122				
2-Hexanone	47.85	2.0	40	0	120	57 - 139				
4-Chlorotoluene	18.44	1.0	20	0	92.2	78 - 122				
4-Isopropyltoluene	19.25	1.0	20	0	96.2	77 - 127				
4-Methyl-2-pentanone	44.62	2.0	40	0	112	67 - 130				
Acetone	46.61	2.0	40	0	117	39 - 160				
Benzene	19.88	1.0	20	0	99.4	79 - 120				
Bromobenzene	19.54	1.0	20	0	97.7	80 - 120				
Bromochloromethane	21.37	1.0	20	0	107	78 - 123				
Bromodichloromethane	20.77	1.0	20	0	104	79 - 125				
Bromoform	22.55	1.0	20	0	113	66 - 130				
Bromomethane	20.43	1.0	20	0	102	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200608** Units: **UG/L** Analysis Date: **08-Jun-2020 13:27**
Client ID: Run ID: **VOA6_362867** SeqNo: **5611176** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	39.98	2.0	40	0	100.0	64 - 133				
Carbon tetrachloride	18.09	1.0	20	0	90.5	72 - 136				
Chlorobenzene	19.72	1.0	20	0	98.6	82 - 118				
Chloroethane	19.76	1.0	20	0	98.8	60 - 138				
Chloroform	20.46	1.0	20	0	102	79 - 124				
Chloromethane	20.29	1.0	20	0	101	50 - 139				
cis-1,2-Dichloroethene	21.02	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	21.02	1.0	20	0	105	75 - 124				
Dibromochloromethane	20.58	1.0	20	0	103	74 - 126				
Dibromomethane	21.43	1.0	20	0	107	79 - 123				
Dichlorodifluoromethane	18.4	1.0	20	0	92.0	32 - 152				
Ethylbenzene	19.41	1.0	20	0	97.0	79 - 121				
Hexachlorobutadiene	26.13	1.0	20	0	131	66 - 134				
Isopropylbenzene	19.23	1.0	20	0	96.2	72 - 131				
m,p-Xylene	38.84	2.0	40	0	97.1	80 - 121				
Methylene chloride	21.97	2.0	20	0	110	74 - 124				
Naphthalene	30.43	1.0	20	0	152	61 - 128				S
n-Butylbenzene	19.13	1.0	20	0	95.6	75 - 128				
n-Propylbenzene	18.74	1.0	20	0	93.7	76 - 126				
o-Xylene	20.49	1.0	20	0	102	78 - 122				
sec-Butylbenzene	18.31	1.0	20	0	91.6	77 - 126				
Styrene	20.25	1.0	20	0	101	78 - 123				
tert-Butylbenzene	18.42	1.0	20	0	92.1	78 - 124				
Tetrachloroethene	19.4	1.0	20	0	97.0	74 - 129				
Toluene	19.85	1.0	20	0	99.3	80 - 121				
trans-1,2-Dichloroethene	20.66	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	21.46	1.0	20	0	107	73 - 127				
Trichloroethene	20.6	1.0	20	0	103	79 - 123				
Trichlorofluoromethane	19.69	1.0	20	0	98.5	65 - 141				
Vinyl chloride	17.79	1.0	20	0	89.0	58 - 137				
Surr: 1,2-Dichloroethane-d4	*55.71*	*1.0*	*50*	*0*	*111*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.69*	*1.0*	*50*	*0*	*103*	*85 - 114*				
Surr: Dibromofluoromethane	*53.64*	*1.0*	*50*	*0*	*107*	*80 - 119*				
Surr: Toluene-d8	*48.05*	*1.0*	*50*	*0*	*96.1*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060251-02MS** Units: **UG/L** Analysis Date: **08-Jun-2020 16:15**
Client ID: **18CPTMW24_060420** Run ID: **VOA6_362867** SeqNo: **5611182** 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	20.83	1.0	20	0	104	78 - 124				
1,1,1-Trichloroethane	16.99	1.0	20	0	84.9	74 - 131				
1,1,2,2-Tetrachloroethane	21.66	1.0	20	0	108	71 - 121				
1,1,2-Trichloroethane	20.78	1.0	20	0	104	80 - 119				
1,1-Dichloroethane	16.06	1.0	20	0	80.3	77 - 125				
1,1-Dichloroethene	17.13	1.0	20	0	85.6	71 - 131				
1,1-Dichloropropene	18.02	1.0	20	0	90.1	78 - 125				
1,2,3-Trichlorobenzene	31.28	1.0	20	0	156	69 - 129				S
1,2,3-Trichloropropane	20.25	1.0	20	0	101	73 - 122				
1,2,4-Trichlorobenzene	29.8	1.0	20	0	149	69 - 130				S
1,2,4-Trimethylbenzene	19.19	1.0	20	0	95.9	76 - 124				
1,2-Dibromo-3-chloropropane	30.74	1.0	20	0	154	62 - 128				S
1,2-Dibromoethane	21.28	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	20.53	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	18.55	1.0	20	0	92.8	73 - 128				
1,2-Dichloropropane	19.63	1.0	20	0	98.2	78 - 122				
1,3,5-Trimethylbenzene	18.41	1.0	20	0	92.0	75 - 124				
1,3-Dichlorobenzene	19.04	1.0	20	0	95.2	80 - 119				
1,3-Dichloropropane	20.12	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	18.7	1.0	20	0	93.5	79 - 118				
2,2-Dichloropropane	15.7	1.0	20	0	78.5	60 - 139				
2-Butanone	37.62	2.0	40	0	94.1	56 - 143				
2-Chlorotoluene	17.52	1.0	20	0	87.6	79 - 122				
2-Hexanone	50.23	2.0	40	0	126	57 - 139				
4-Chlorotoluene	17.66	1.0	20	0	88.3	78 - 122				
4-Isopropyltoluene	19.3	1.0	20	0	96.5	77 - 127				
4-Methyl-2-pentanone	47.78	2.0	40	0	119	67 - 130				
Acetone	29.65	2.0	40	0	74.1	39 - 160				
Benzene	18.45	1.0	20	0	92.3	79 - 120				
Bromobenzene	18.55	1.0	20	0	92.8	80 - 120				
Bromochloromethane	17.26	1.0	20	0	86.3	78 - 123				
Bromodichloromethane	18.96	1.0	20	0	94.8	79 - 125				
Bromoform	22.44	1.0	20	0	112	66 - 130				
Bromomethane	11.3	1.0	20	0	56.5	53 - 141				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060251-02MS** Units: **UG/L** Analysis Date: **08-Jun-2020 16:15**
Client ID: **18CPTMW24_060420** Run ID: **VOA6_362867** SeqNo: **5611182** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	32.81	2.0	40	0	82.0	64 - 133				
Carbon tetrachloride	18.48	1.0	20	0	92.4	72 - 136				
Chlorobenzene	19.27	1.0	20	0	96.4	82 - 118				
Chloroethane	29.37	1.0	20	0	147	60 - 138				S
Chloroform	16.54	1.0	20	0	82.7	79 - 124				
Chloromethane	11.88	1.0	20	0	59.4	50 - 139				
cis-1,2-Dichloroethene	42.09	1.0	20	24.9	86.0	78 - 123				
cis-1,3-Dichloropropene	18.72	1.0	20	0	93.6	75 - 124				
Dibromochloromethane	20.41	1.0	20	0	102	74 - 126				
Dibromomethane	19.24	1.0	20	0	96.2	79 - 123				
Dichlorodifluoromethane	9.776	1.0	20	0	48.9	32 - 152				
Ethylbenzene	20	1.0	20	0	100	79 - 121				
Hexachlorobutadiene	28.68	1.0	20	0	143	66 - 134				S
Isopropylbenzene	19.69	1.0	20	0	98.4	72 - 131				
m,p-Xylene	39.91	2.0	40	0	99.8	80 - 121				
Methylene chloride	16.29	2.0	20	0	81.5	74 - 124				
Naphthalene	30.36	1.0	20	0	152	61 - 128				S
n-Butylbenzene	19.43	1.0	20	0	97.2	75 - 128				
n-Propylbenzene	18.47	1.0	20	0	92.4	76 - 126				
o-Xylene	20.09	1.0	20	0	100	78 - 122				
sec-Butylbenzene	18.9	1.0	20	0	94.5	77 - 126				
Styrene	19.84	1.0	20	0	99.2	78 - 123				
tert-Butylbenzene	18.58	1.0	20	0	92.9	78 - 124				
Tetrachloroethene	20.73	1.0	20	0	104	74 - 129				
Toluene	19.76	1.0	20	0	98.8	80 - 121				
trans-1,2-Dichloroethene	16.54	1.0	20	0	82.7	75 - 124				
trans-1,3-Dichloropropene	18.97	1.0	20	0	94.8	73 - 127				
Trichloroethene	28.66	1.0	20	8.405	101	79 - 123				
Trichlorofluoromethane	16.22	1.0	20	0	81.1	65 - 141				
Vinyl chloride	12.93	1.0	20	0	64.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*42.85*	*1.0*	*50*	*0*	*85.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.02*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*44.39*	*1.0*	*50*	*0*	*88.8*	*80 - 119*				
Surr: Toluene-d8	*52.26*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060251-02MSD** Units: **UG/L** Analysis Date: **08-Jun-2020 16:39**
Client ID: **18CPTMW24_060420** Run ID: **VOA6_362867** SeqNo: **5611183** 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	21.22	1.0	20	0	106	78 - 124	20.83	1.85	20	
1,1,1-Trichloroethane	17.9	1.0	20	0	89.5	74 - 131	16.99	5.25	20	
1,1,2,2-Tetrachloroethane	23.5	1.0	20	0	117	71 - 121	21.66	8.14	20	
1,1,2-Trichloroethane	21.36	1.0	20	0	107	80 - 119	20.78	2.72	20	
1,1-Dichloroethane	16.47	1.0	20	0	82.3	77 - 125	16.06	2.5	20	
1,1-Dichloroethene	18.1	1.0	20	0	90.5	71 - 131	17.13	5.55	20	
1,1-Dichloropropene	18.61	1.0	20	0	93.0	78 - 125	18.02	3.22	20	
1,2,3-Trichlorobenzene	43.11	1.0	20	0	216	69 - 129	31.28	31.8	20	SR
1,2,3-Trichloropropane	22.18	1.0	20	0	111	73 - 122	20.25	9.09	20	
1,2,4-Trichlorobenzene	35.06	1.0	20	0	175	69 - 130	29.8	16.2	20	S
1,2,4-Trimethylbenzene	21.31	1.0	20	0	107	76 - 124	19.19	10.5	20	
1,2-Dibromo-3-chloropropane	32.85	1.0	20	0	164	62 - 128	30.74	6.62	20	S
1,2-Dibromoethane	21.8	1.0	20	0	109	77 - 121	21.28	2.39	20	
1,2-Dichlorobenzene	22.54	1.0	20	0	113	80 - 119	20.53	9.32	20	
1,2-Dichloroethane	18.72	1.0	20	0	93.6	73 - 128	18.55	0.908	20	
1,2-Dichloropropane	19.2	1.0	20	0	96.0	78 - 122	19.63	2.22	20	
1,3,5-Trimethylbenzene	20.85	1.0	20	0	104	75 - 124	18.41	12.4	20	
1,3-Dichlorobenzene	21.39	1.0	20	0	107	80 - 119	19.04	11.6	20	
1,3-Dichloropropane	20.41	1.0	20	0	102	80 - 119	20.12	1.44	20	
1,4-Dichlorobenzene	21	1.0	20	0	105	79 - 118	18.7	11.6	20	
2,2-Dichloropropane	15.98	1.0	20	0	79.9	60 - 139	15.7	1.77	20	
2-Butanone	37.22	2.0	40	0	93.0	56 - 143	37.62	1.07	20	
2-Chlorotoluene	19.68	1.0	20	0	98.4	79 - 122	17.52	11.6	20	
2-Hexanone	50.8	2.0	40	0	127	57 - 139	50.23	1.15	20	
4-Chlorotoluene	19.71	1.0	20	0	98.5	78 - 122	17.66	10.9	20	
4-Isopropyltoluene	22.02	1.0	20	0	110	77 - 127	19.3	13.2	20	
4-Methyl-2-pentanone	49.16	2.0	40	0	123	67 - 130	47.78	2.85	20	
Acetone	30.17	2.0	40	0	75.4	39 - 160	29.65	1.75	20	
Benzene	18.79	1.0	20	0	94.0	79 - 120	18.45	1.83	20	
Bromobenzene	20.06	1.0	20	0	100	80 - 120	18.55	7.82	20	
Bromochloromethane	17.24	1.0	20	0	86.2	78 - 123	17.26	0.152	20	
Bromodichloromethane	19.14	1.0	20	0	95.7	79 - 125	18.96	0.929	20	
Bromoform	23.03	1.0	20	0	115	66 - 130	22.44	2.58	20	
Bromomethane	10.16	1.0	20	0	50.8	53 - 141	11.3	10.6	20	S

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060251-02MSD** Units: **UG/L** Analysis Date: **08-Jun-2020 16:39**
Client ID: **18CPTMW24_060420** Run ID: **VOA6_362867** SeqNo: **5611183** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	34.71	2.0	40	0	86.8	64 - 133	32.81	5.62	20	
Carbon tetrachloride	19.33	1.0	20	0	96.7	72 - 136	18.48	4.52	20	
Chlorobenzene	20.13	1.0	20	0	101	82 - 118	19.27	4.37	20	
Chloroethane	99.77	1.0	20	0	499	60 - 138	29.37	109	20	SR
Chloroform	17.11	1.0	20	0	85.5	79 - 124	16.54	3.36	20	
Chloromethane	11.3	1.0	20	0	56.5	50 - 139	11.88	5.03	20	
cis-1,2-Dichloroethene	42.71	1.0	20	24.9	89.1	78 - 123	42.09	1.47	20	
cis-1,3-Dichloropropene	19.39	1.0	20	0	97.0	75 - 124	18.72	3.54	20	
Dibromochloromethane	21.26	1.0	20	0	106	74 - 126	20.41	4.08	20	
Dibromomethane	19.54	1.0	20	0	97.7	79 - 123	19.24	1.57	20	
Dichlorodifluoromethane	10.31	1.0	20	0	51.5	32 - 152	9.776	5.31	20	
Ethylbenzene	20.82	1.0	20	0	104	79 - 121	20	4.01	20	
Hexachlorobutadiene	33.53	1.0	20	0	168	66 - 134	28.68	15.6	20	S
Isopropylbenzene	21.25	1.0	20	0	106	72 - 131	19.69	7.65	20	
m,p-Xylene	41.89	2.0	40	0	105	80 - 121	39.91	4.84	20	
Methylene chloride	16.58	2.0	20	0	82.9	74 - 124	16.29	1.73	20	
Naphthalene	41.28	1.0	20	0	206	61 - 128	30.36	30.5	20	SR
n-Butylbenzene	23.03	1.0	20	0	115	75 - 128	19.43	17	20	
n-Propylbenzene	20.88	1.0	20	0	104	76 - 126	18.47	12.2	20	
o-Xylene	21.17	1.0	20	0	106	78 - 122	20.09	5.23	20	
sec-Butylbenzene	21.68	1.0	20	0	108	77 - 126	18.9	13.7	20	
Styrene	20.98	1.0	20	0	105	78 - 123	19.84	5.63	20	
tert-Butylbenzene	21.32	1.0	20	0	107	78 - 124	18.58	13.7	20	
Tetrachloroethene	22.55	1.0	20	0	113	74 - 129	20.73	8.45	20	
Toluene	20.67	1.0	20	0	103	80 - 121	19.76	4.53	20	
trans-1,2-Dichloroethene	17.08	1.0	20	0	85.4	75 - 124	16.54	3.24	20	
trans-1,3-Dichloropropene	19.45	1.0	20	0	97.2	73 - 127	18.97	2.5	20	
Trichloroethene	28.7	1.0	20	8.405	101	79 - 123	28.66	0.133	20	
Trichlorofluoromethane	17.41	1.0	20	0	87.1	65 - 141	16.22	7.1	20	
Vinyl chloride	13.4	1.0	20	0	67.0	58 - 137	12.93	3.58	20	
Surr: 1,2-Dichloroethane-d4	*42.32*	*1.0*	*50*	*0*	*84.6*	*81 - 118*	*42.85*	*1.24*	*20*	
Surr: 4-Bromofluorobenzene	*49*	*1.0*	*50*	*0*	*98.0*	*85 - 114*	*51.02*	*4.04*	*20*	
Surr: Dibromofluoromethane	*43.87*	*1.0*	*50*	*0*	*87.7*	*80 - 119*	*44.39*	*1.17*	*20*	
Surr: Toluene-d8	*52.9*	*1.0*	*50*	*0*	*106*	*89 - 112*	*52.26*	*1.22*	*20*	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060251

QC BATCH REPORT

Batch ID: R362867 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20060251-01	HS20060251-02	HS20060251-03	HS20060251-04
HS20060251-05	HS20060251-06	HS20060251-07	

ALS Houston, US Date: 19-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060251**

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
Illinois	2000322020-4	09-May-2021
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-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060251

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060251-01	18CPTMW14_060420	Login	6/5/2020 12:42:58 PM	JRM	MET092
HS20060251-01	18CPTMW14_060420	Login	6/5/2020 12:42:58 PM	JRM	Sub
HS20060251-01	18CPTMW14_060420	Login	6/5/2020 12:42:58 PM	JRM	EXT154
HS20060251-01	18CPTMW14_060420	Login	6/5/2020 12:42:58 PM	JRM	VOA012
HS20060251-02	18CPTMW24_060420	Login	6/5/2020 12:42:58 PM	JRM	MET092
HS20060251-02	18CPTMW24_060420	Login	6/5/2020 12:42:58 PM	JRM	Sub
HS20060251-02	18CPTMW24_060420	Login	6/5/2020 12:42:58 PM	JRM	EXT154
HS20060251-02	18CPTMW24_060420	Login	6/5/2020 12:42:58 PM	JRM	VOA012
HS20060251-03	18WW25_060420	Login	6/5/2020 12:42:58 PM	JRM	MET092
HS20060251-03	18WW25_060420	Login	6/5/2020 12:42:58 PM	JRM	Sub
HS20060251-03	18WW25_060420	Login	6/5/2020 12:42:58 PM	JRM	EXT154
HS20060251-03	18WW25_060420	Login	6/5/2020 12:42:58 PM	JRM	VOA012
HS20060251-05	MW13_060420	Login	6/5/2020 12:42:58 PM	JRM	MET092
HS20060251-05	MW13_060420	Login	6/5/2020 12:42:58 PM	JRM	Sub
HS20060251-05	MW13_060420	Login	6/5/2020 12:42:58 PM	JRM	VOA012
HS20060251-07	Trip Blank	Login	6/5/2020 12:42:58 PM	JRM	VOA012

ALS Houston, US Date: 19-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060251 **Date/Time Received:** **05-Jun-2020 09:15**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By:	/S/ Jared R. Makan	03-Jun-2020 15:47	**Reviewed by:**	/S/ RJ Modashia	05-Jun-2020 15:14
	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):	1.8°C/1.8°C UC/C	IR25
Cooler(s)/Kit(s):	45747	
Date/Time sample(s) sent to storage:	06/04/2020 12:53	

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: Sample MW16_060420 listed on COC, not received.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

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

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
18CPTMW14_060420	04JUN2020	0735	-	N	-		6	X	X	X	X				
18CPTMW24_060420	04JUN2020	0825	-	N			5	X	X		X				
18WW25_060420	04JUN2020	0920	-	N			6	X	X	X	X				
18WW10_060420	04JUN2020	1050		N			5	X	X		X				
MW13_060420	04JUN2020	1145		N			5	X	X	X					
CO2_060420	04JUN2020	1235	-	N			4	X	X						
MW16_060420	04JUN2020		-	N			5	X	X		X				
TRIP BLANK	04JUN2020		-	TB			2	X							
			-												
			-												
			-												

Sample Analysis Requested (5) / Quality Assurance Samples (6)

HS20060251
Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS: ____

Custody Transfers Prior to Receipt by Laboratory

Relinquished by (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/4/20	1430	1. [signature]	6/5/2020	08:15
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped ____ No.:

Method of Shipment: ____

Fed ____ Ex ____ Airbill ____ Number:

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

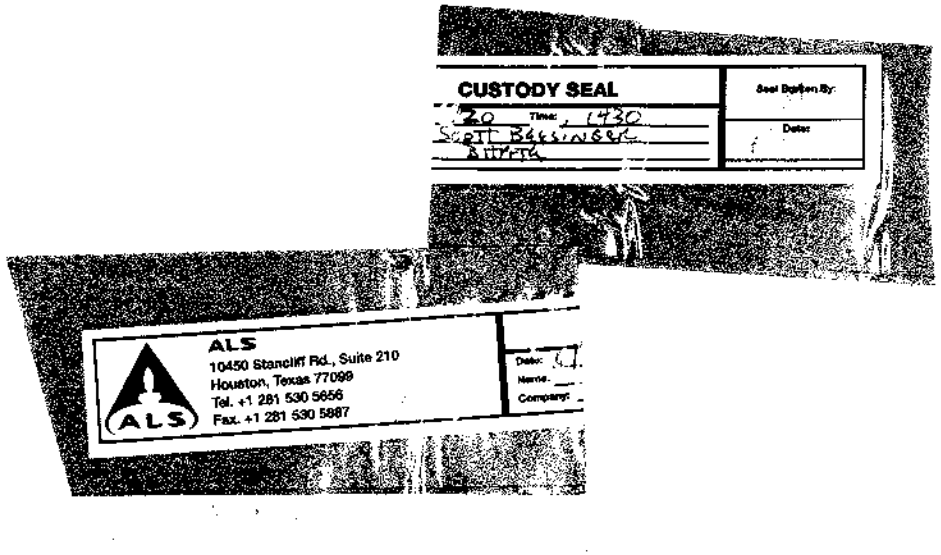
ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)
4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks
5.) Sample Analysis Requested: Analytical method requested and number of containers provided foreach.
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

45747 Ulc. 1.8° #25 C/F 0.5

FedEx
TRK# 8227 1251 0297 2006

FRI - 05 JUN 10:30A
PRIORITY OVERNIGHT



June 19, 2020 Service Request No:E2000501

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

Laboratory Results for: HS20060251

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 08, 2020
For your reference, these analyses have been assigned our service request number **E2000501.**

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.:**	E2000501
Project:	HS20060251	**Date Received:**	06/08/20
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

Six samples were received for analysis at ALS Environmental in Houston on 06/08/20.

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

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000238: 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; the MS/MSD was 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:**E2000501
Project: HS20060251

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000501-001	18CPTMW14_060420	6/4/2020	0735
E2000501-002	18CPTMW24_060420	6/4/2020	0825
E2000501-003	18WW25_060420	6/4/2020	0920
E2000501-004	18WW10_060420	6/4/2020	1050
E2000501-005	MW13_060420	6/4/2020	1145
E2000501-006	CO2_060420	6/4/2020	1235

Service Request Summary

Folder #: **E2000501**
Client Name: ALS Environmental - US
Project Name: HS20060251
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: 06/08/20
Internal Due Date: 6/19/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060251
EDD: No EDD Specified

6 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000501-001	18CPTMW14_060420	Ground Water	06/04/20 0735	**IV**
E2000501-002	18CPTMW24_060420	Ground Water	06/04/20 0825	**IV**
E2000501-003	18WW25_060420	Ground Water	06/04/20 0920	**IV**
E2000501-004	18WW10_060420	Ground Water	06/04/20 1050	**IV**
E2000501-005	MW13_060420	Ground Water	06/04/20 1145	**IV**
E2000501-006	CO2_060420	Ground Water	06/04/20 1235	**IV**

Service Request Summary

Folder #: **E2000501**
Client Name: ALS Environmental - US
Project Name: HS20060251
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: 06/08/20
Internal Due Date: 6/19/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060251
EDD: No EDD Specified

6 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	6	Level IV due 6/26,level II 6/19

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
Florida Department of Health	E87611	6/30/2020
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 Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
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: **Texas** **COC ID:** **14047**

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:	HS20060251
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060251-01**	**18CPTMW14_060420**	**Groundwater**	**04 Jun 2020 07:35**
	SUB_Perch-6850			15 Jun 2020
2.	**HS20060251-02**	**18CPTMW24_060420**	**Groundwater**	**04 Jun 2020 08:25**
	SUB_Perch-6850			15 Jun 2020
3.	**HS20060251-03**	**18WW25_060420**	**Groundwater**	**04 Jun 2020 09:20**
	SUB_Perch-6850			15 Jun 2020
4.	**HS20060251-04**	**18WW10_060420**	**Groundwater**	**04 Jun 2020 10:50**
	SUB_Perch-6850			15 Jun 2020
5.	**HS20060251-05**	**MW13_060420**	**Groundwater**	**04 Jun 2020 11:45**
	SUB_Perch-6850			15 Jun 2020
6.	**HS20060251-06**	**CO2_060420**	**Groundwater**	**04 Jun 2020 12:35**
	SUB_Perch-6850			15 Jun 2020

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

QC Level: DOD IV (DoD Data Package)

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **14047**

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 6/8/20 1400

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID IR11

Date/Time Received: 6/8/20 Initials: CH Date/Time Logged in: 6/8/20 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?
-		6/8/20	1400	CH	0.9	X
						☐
						☐
						☐

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#: 360212 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/17/20 10:43

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000501-001	18CPTMW14_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000501-002	18CPTMW24_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000501-003	18WW25_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000501-004	18WW10_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000501-005	MW13_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000501-006	CO2_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000510-001	LH18/24-SP650_060920_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000511-001	KAFB7-WW01-060820	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000535-001	18CPTMW035W_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000535-002	MW21_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000535-003	18CPTMW07_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000538-001	MW5_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000538-002	18CPTMW08DW_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000538-003	18CPTMW08SW_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000538-004	MW23_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000538-005	CO1_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2000538-006	MW16_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2000538-007	18CPTMW18_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
19	E2000538-008	CO3_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
20	EQ2000238-01	MB		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000238-02	LCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000238-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2000238-04	CO1_060920 MS	.01	6850/ClO4 DOD			Liquid	10mL	
24	EQ2000238-05	CO1_060920 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

EQ2000238-02 100.00µL EQ2000238-03 100.00µL EQ2000238-04 100.00µL EQ2000238-05 100.00µL

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

E2000501-001 1.00µL E2000501-002 1.00µL E2000501-003 1.00µL E2000501-004 1.00µL E2000501-005 1.00µL E2000501-006 1.00µL
E2000538-005 1.00µL EQ2000238-01 1.00µL EQ2000238-02 1.00µL EQ2000238-03 1.00µL EQ2000238-04 1.00µL EQ2000238-05 1.00µL

Preparation Information Benchsheet

Prep Run#: 360212
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/17/20 10:43

Preparation Steps

Step: Preparation
Started: 6/17/20 10:43
Finished: 6/17/20 16:30
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
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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	6/ 4/20 0735
Sample Matrix:	Ground Water	**Date Received:**	6/ 8/20
Sample Name:	18CPTMW14_060420	**Units:**	µg/L
Lab Code:	E2000501-001	**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	**1660**		10.0	5.00	2.50	100	6/17/20	6/18/20 16:09	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	6/ 4/20 0825
Sample Matrix:	Ground Water	**Date Received:**	6/ 8/20
Sample Name:	18CPTMW24_060420	**Units:**	µg/L
Lab Code:	E2000501-002	**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	**5.86**		0.100	0.0500	0.0250	1	6/17/20	6/18/20 16:01	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	6/ 4/20 0920
Sample Matrix:	Ground Water	**Date Received:**	6/ 8/20
Sample Name:	18WW25_060420	**Units:**	µg/L
Lab Code:	E2000501-003	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/17/20	6/18/20 14:56	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	6/ 4/20 1050
Sample Matrix:	Ground Water	**Date Received:**	6/ 8/20
Sample Name:	18WW10_060420	**Units:**	µg/L
Lab Code:	E2000501-004	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0904**	J	0.100	0.0500	0.0250	1	6/17/20	6/18/20 15:12	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	6/ 4/20 1145
Sample Matrix:	Ground Water	**Date Received:**	6/ 8/20
Sample Name:	MW13_060420	**Units:**	µg/L
Lab Code:	E2000501-005	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0719**	J	0.100	0.0500	0.0250	1	6/17/20	6/18/20 15:20	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	6/ 4/20 1235
Sample Matrix:	Ground Water	**Date Received:**	6/ 8/20
Sample Name:	CO2_060420	**Units:**	µg/L
Lab Code:	E2000501-006	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/17/20	6/18/20 15:28	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2000538-005	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.942**		0.100	0.0500	0.0250	1	6/17/20	6/18/20 15:36	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000238-01	**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	6/17/20	6/18/20 14:01	360212	684273	

Accuracy & Precision

ALS Environmental - Houston HRMS
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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20
Sample Matrix:	Ground Water		

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	360212

	Lab Control Sample EQ2000238-02			Duplicate Lab Control Sample EQ2000238-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.114	0.100	114	0.112	0.100	112	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:**	E2000501
Project:	HS20060251	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000238-02	**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	**0.114**		0.100			1	6/17/20	6/18/20 14:09	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000238-03	**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	**0.112**		0.100			1	6/17/20	6/18/20 14:17	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	6/18/20

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:	E2000538-005	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS **Matrix Spike** EQ2000238-04				Batch QCDMS **Duplicate Matrix Spike** EQ2000238-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.942	1.06	0.100	116	#	1.04	0.100	95	#	84 - 119	2	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:**	E2000501
Project:	HS20060251	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000238-04	**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	**1.06**		0.100			1	6/17/20	6/18/20 14:25	360212	684273	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000238-05	**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	**1.04**		0.100			1	6/17/20	6/18/20 14:33	360212	684273	

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

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

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

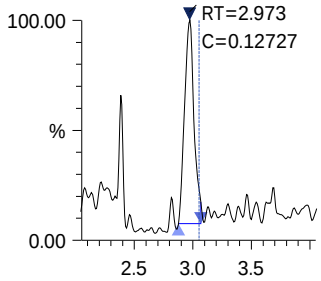
PERCHLORATE1

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

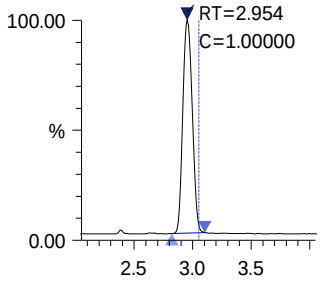
Perchlorate

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

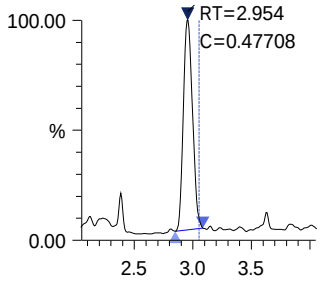
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE2	6/2/2020 3:45:42 PM	8464	0.47708	20200602_010	2.954	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE2	6/2/2020 3:45:42 PM	138722	1.00000	20200602_010	2.949	25.0000	1.0000	5

Perchlorate

Conc 0.47708

Area 8464

Q 99.00>83.00 (-) 1.56e3

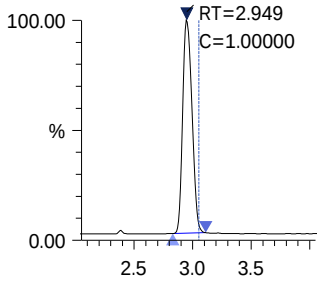


Sodium Perchlorate-18O4_IS

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

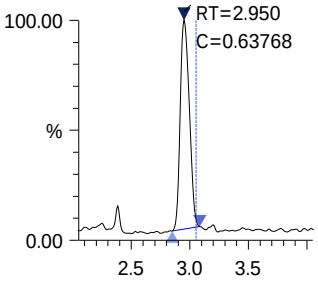
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	6/2/2020 3:53:36 PM	11656	0.63768	20200602_011	2.950	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	PERCHLORATE3	6/2/2020 3:53:36 PM	142915	1.00000	20200602_011	2.954	25.0000	1.0000	6

Perchlorate

Conc 0.63768

Area 11656

Q 99.00>83.00 (-) 2.17e3

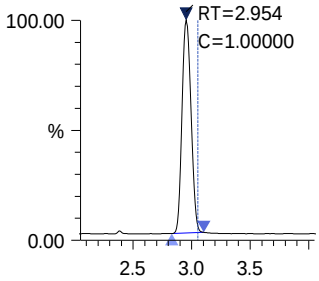


Sodium Perchlorate-18O4_IS

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

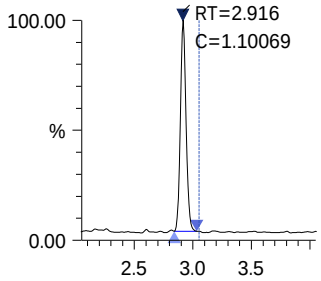
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	6/2/2020 4:05:28 PM	18119	1.10069	20200602_012	2.916	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE4	6/2/2020 4:05:28 PM	128706	1.00000	20200602_012	2.914	25.0000	1.0000	7

Perchlorate

Conc 1.10069

Area 18119

Q 99.00>83.00 (-) 5.42e3

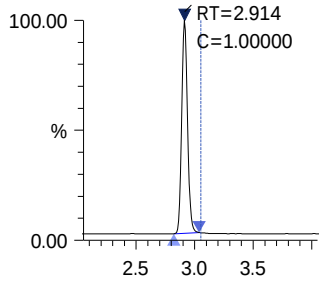


Sodium Perchlorate-18O4_IS

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

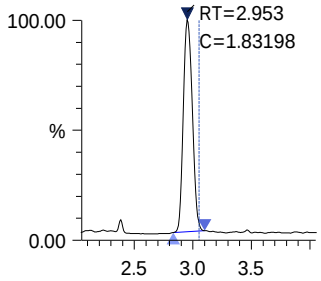
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/2/2020 4:13:21 PM	33971	1.83198	20200602_013	2.953	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/2/2020 4:13:21 PM	144982	1.00000	20200602_013	2.953	25.0000	1.0000	8

Perchlorate

Conc 1.83198

Area 33971

Q 99.00>83.00 (-) 6.29e3

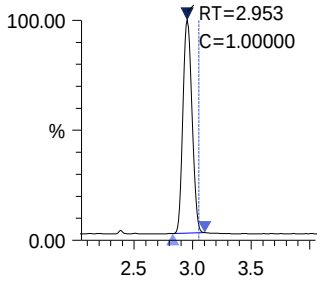


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 144982

ISTD 107.00>89.00 (-) 2.71e4



ALS Group Houston

PERCHLORATE6

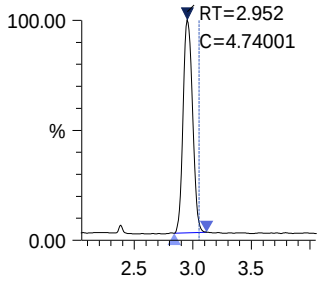
Date acquired: 6/2/2020 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_014.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

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

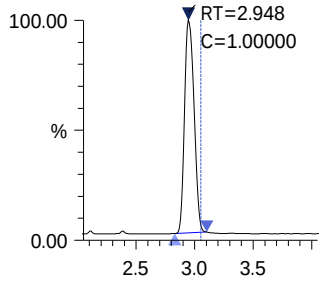
Q 99.00>83.00 (-) 1.50e4



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

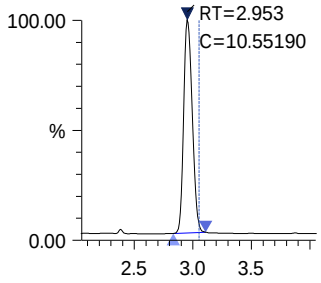
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/2/2020 4:29:10 PM	173998	10.55190	20200602_015	2.953	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/2/2020 4:29:10 PM	128928	1.00000	20200602_015	2.951	25.0000	1.0000	10

Perchlorate

Conc 10.55190

Area 173998

Q 99.00>83.00 (-) 3.36e4

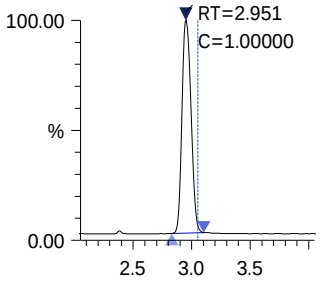


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 128928

ISTD 107.00>89.00 (-) 2.43e4



ALS Group Houston

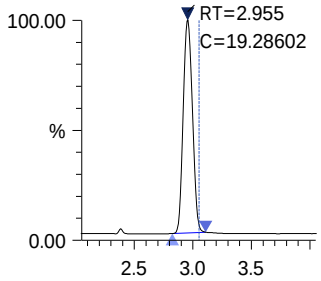
PERCHLORATE8

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

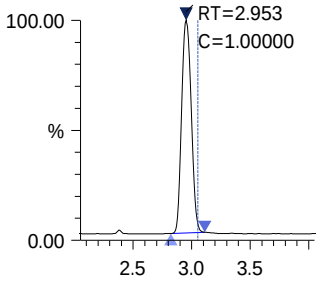
Perchlorate

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

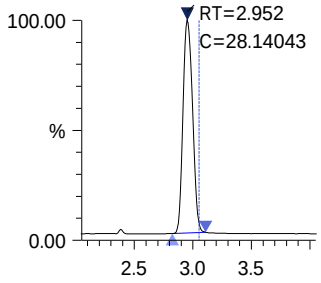
Date acquired: 6/2/2020 4:44:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

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

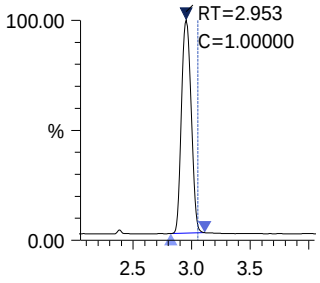
Q 99.00>83.00 (-) 8.16e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130327

ISTD 107.00>89.00 (-) 2.28e4



ALS Group Houston

PERCHLORATE10

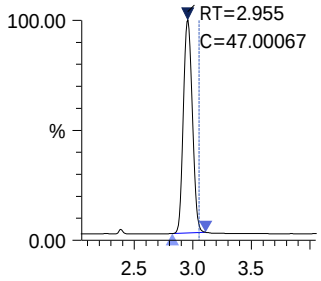
Date acquired: 6/2/2020 4:52:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

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

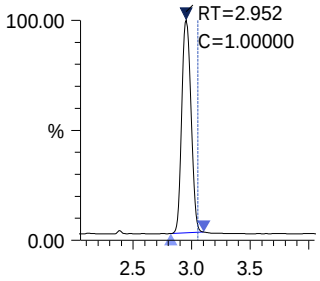
Q 99.00>83.00 (-) 1.36e5



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

PERCHLORATEICV

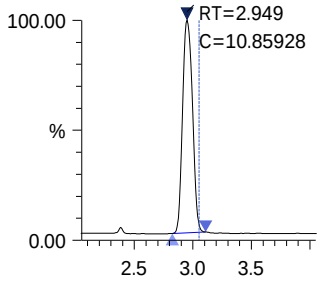
Date acquired: 6/2/2020 5:00:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_019.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

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

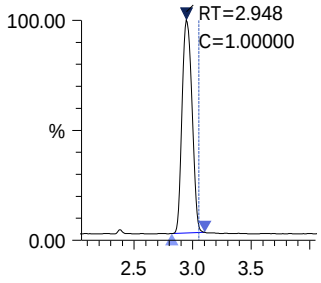
Q 99.00>83.00 (-) 3.04e4



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

20200618

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		20200618_001	Perchlorate6850b.lcm	1x	☒	
	null		20200618_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200618_003	Perchlorate6850b.lcm	1x	☒	
	LODV		20200618_004	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200618_005	Perchlorate6850b.lcm	1x	☒	3100807-04
	ICS		20200618_006	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-01		20200618_007	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-02		20200618_008	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-03		20200618_009	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-04		20200618_010	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-05		20200618_011	Perchlorate6850b.lcm	1x	☒	
	E2000501-001		20200618_012	Perchlorate6850b.lcm	1x	☒	
	E2000501-002		20200618_013	Perchlorate6850b.lcm	1x	☒	
	E2000501-003		20200618_014	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200618_015	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000501-004		20200618_016	Perchlorate6850b.lcm	1x	☒	
	E2000501-005		20200618_017	Perchlorate6850b.lcm	1x	☒	
	E2000501-006		20200618_018	Perchlorate6850b.lcm	1x	☒	
	E2000538-005		20200618_019	Perchlorate6850b.lcm	1x	☒	
	E2000511-001		20200618_020	Perchlorate6850b.lcm	1x	☒	
	E2000501-002		20200618_022	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200618_021	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000501-001X100		20200618_023	Perchlorate6850b.lcm	100x	☒	
	E2000501-004		20200618_024	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-03DNU		20200618_025	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200618_026	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20

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\20200618\20200618_005	**Calibration ID:**	EC2000007
		Analysis Lot:	684273
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1279	0.1370	7.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20

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\20200618\20200618_015	**Calibration ID:**	EC2000007
		Analysis Lot:	684273
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1279	0.1421	11.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20

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\20200618\20200618_021	**Calibration ID:**	EC2000007
		Analysis Lot:	684273
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.1	0.1279	0.1418	10.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20

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\20200618\20200618_026	**Calibration ID:**	EC2000007
		Analysis Lot:	684273
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	11.0	0.1279	0.1408	10.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20 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\20200618\20200618_005	**Lab Code:**	EQ2000250-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684273
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	EQ2000250-01	161,782	3.03
Method Blank	EQ2000238-01	174,488	3.03
Lab Control Sample	EQ2000238-02	187,956	3.03
Duplicate Lab Control Sample	EQ2000238-03	195,912	3.03
Batch QCMS	EQ2000238-04	198,581	2.99
Batch QCDMS	EQ2000238-05	201,286	2.99
18WW25_060420	E2000501-003	188,093	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:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20 15:04

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

File ID:	I:\LCMS01\DATA\20200618\20200618_015	**Lab Code:**	EQ2000250-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684273
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	EQ2000250-02	164,772	3.03
18WW10_060420	E2000501-004	200,206	3.01
MW13_060420	E2000501-005	196,730	3.01
CO2_060420	E2000501-006	200,256	3.02
Batch QC	E2000538-005	198,724	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:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20 15:52

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

File ID:	I:\LCMS01\DATA\20200618\20200618_021	**Lab Code:**	EQ2000250-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684273
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	EQ2000250-03	167,000	3.03
18CPTMW24_060420	E2000501-002	168,953	2.95
18CPTMW14_060420	E2000501-001	180,254	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:**	E2000501
Project:	HS20060251	**Date Analyzed:**	6/18/20 16:32

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200618\20200618_026	**Lab Code:**	EQ2000250-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684273
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	EQ2000250-04	170,396	3.02

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

ALS Group Houston

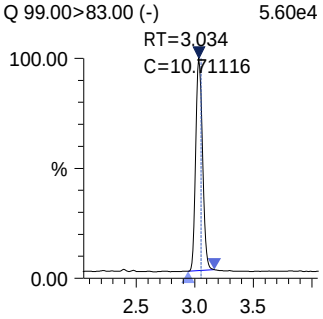
PERCHLORATE7

Date acquired: 6/18/2020 1:45:53 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200618\20200618_005.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	6/18/2020 1:45:53 PM	221634	10.71116	20200618_005	3.034	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/18/2020 1:45:53 PM	161782	1.00000	20200618_005	3.032	25.0000	1.0000	4

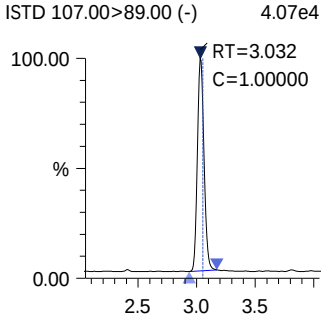
Perchlorate

Conc 10.71116
Area 221634



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 161782



ALS Group Houston

EQ2000238-01

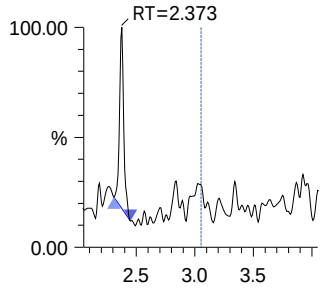
Date acquired: 6/18/2020 2:01:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200618\20200618_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000238-01	6/18/2020 2:01:38 PM	----	----	20200618_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000238-01	6/18/2020 2:01:38 PM	174488	1.00000	20200618_007	3.026	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

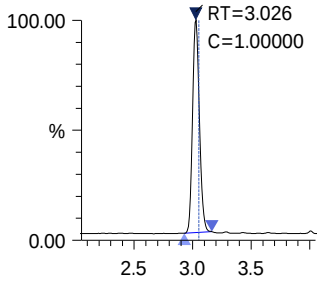
Q 99.00>83.00 (-) 7.79e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 174488

ISTD 107.00>89.00 (-) 4.23e4



ALS Group Houston

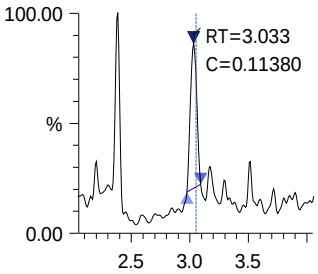
EQ2000238-02

Date acquired: 6/18/2020 2:09:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200618\20200618_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	EQ2000238-02	6/18/2020 2:09:31 PM	2736	0.11380	20200618_008	3.033	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000238-02	6/18/2020 2:09:31 PM	187956	1.00000	20200618_008	3.029	25.0000	1.0000	6

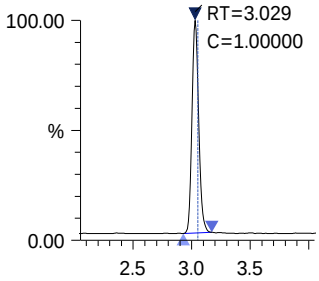
Perchlorate

Conc 0.11380
Area 2736
Q 99.00>83.00 (-) 1.09e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 187956
ISTD 107.00>89.00 (-) 4.66e4



ALS Group Houston

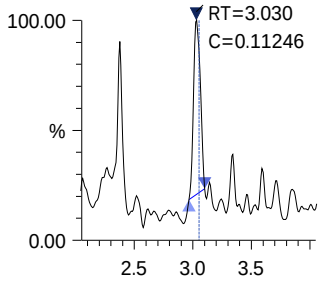
EQ2000238-03

Date acquired: 6/18/2020 2:17:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200618\20200618_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	EQ2000238-03	6/18/2020 2:17:24 PM	2818	0.11246	20200618_009	3.030	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000238-03	6/18/2020 2:17:24 PM	195912	1.00000	20200618_009	3.029	25.0000	1.0000	7

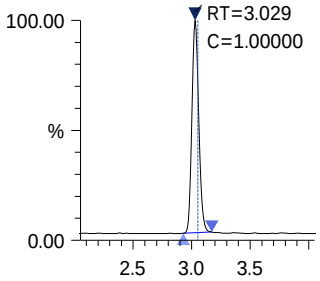
Perchlorate

Conc 0.11246
Area 2818
Q 99.00>83.00 (-) 8.66e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 195912
ISTD 107.00>89.00 (-) 4.76e4



ALS Group Houston

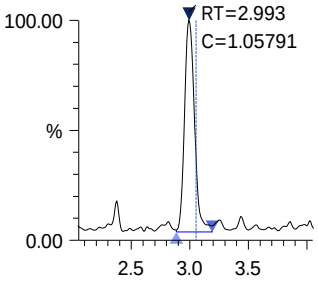
EQ2000238-04

Date acquired: 6/18/2020 2:25:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200618\20200618_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	EQ2000238-04	6/18/2020 2:25:19 PM	26869	1.05791	20200618_010	2.993	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	EQ2000238-04	6/18/2020 2:25:19 PM	198581	1.00000	20200618_010	2.992	25.0000	1.0000	8

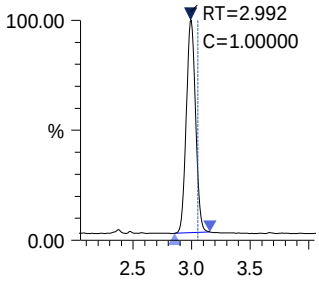
Perchlorate

Conc 1.05791
Area 26869
Q 99.00>83.00 (-) 4.55e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 198581
ISTD 107.00>89.00 (-) 3.64e4



ALS Group Houston

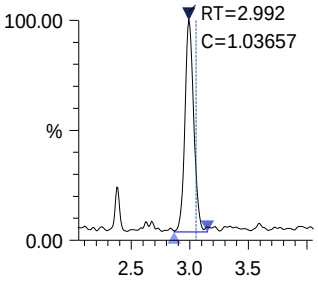
EQ2000238-05

Date acquired: 6/18/2020 2:33:12 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200618\20200618_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	EQ2000238-05	6/18/2020 2:33:12 PM	26686	1.03657	20200618_011	2.992	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	EQ2000238-05	6/18/2020 2:33:12 PM	201286	1.00000	20200618_011	2.994	25.0000	1.0000	9

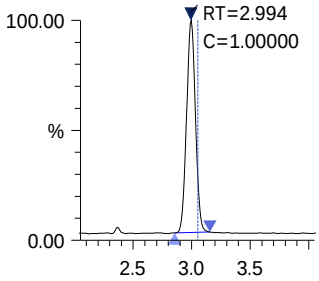
Perchlorate

Conc 1.03657
Area 26686
Q 99.00>83.00 (-) 5.10e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 201286
ISTD 107.00>89.00 (-) 3.85e4



ALS Group Houston

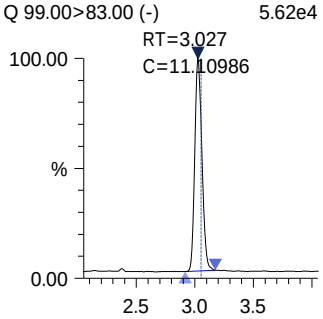
PERCHLORATE7

Date acquired: 6/18/2020 3:04:48 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200618\20200618_015.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	6/18/2020 3:04:48 PM	234133	11.10986	20200618_015	3.027	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/18/2020 3:04:48 PM	164772	1.00000	20200618_015	3.025	25.0000	1.0000	4

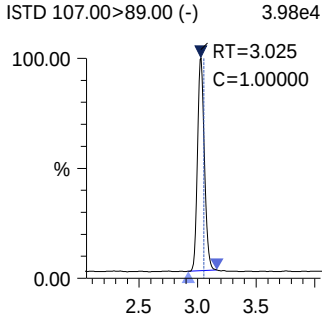
Perchlorate

Conc 11.10986
Area 234133



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 164772



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

June 29, 2020

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

Work Order: **HS20060495**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

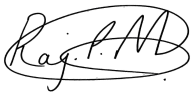
ALS Environmental received 5 sample(s) on Jun 10, 2020 for the analysis presented in the following report.

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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060495

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060495-01	18CPTMW03SW_060920	Groundwater		09-Jun-2020 07:45	10-Jun-2020 09:40	☐
HS20060495-02	AWD1_060920	Groundwater		09-Jun-2020 09:05	10-Jun-2020 09:40	☐
HS20060495-03	MW21_060920	Groundwater		09-Jun-2020 10:15	10-Jun-2020 09:40	☐
HS20060495-04	18CPTMW07_060920	Groundwater		09-Jun-2020 11:40	10-Jun-2020 09:40	☐
HS20060495-05	Trip Blank	Water		09-Jun-2020 00:00	10-Jun-2020 09:40	☐

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060495

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: 154443

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

GCMS Volatiles by Method SW8260

Batch ID: R363462

Sample ID: VLCSW-200617

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

Sample ID: HS20060453-01MS

• MS and MSD are for an unrelated sample

Metals by Method SW6020

Batch ID: 154643

Sample ID: HS20060498-08MS

• MS and MSD are for an unrelated sample

Sample ID: HS20060498-08PDS

• PDS is for an unrelated sample

Metals by Method SW7470

Batch ID: 154572

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW03SW_060920
Collection Date: 09-Jun-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-01
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	17-Jun-2020 16:01
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,2-Dichloroethane	**0.91**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	17-Jun-2020 16:01
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	17-Jun-2020 16:01
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	17-Jun-2020 16:01
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	17-Jun-2020 16:01
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	17-Jun-2020 16:01
Benzene	**1.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	17-Jun-2020 16:01
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	17-Jun-2020 16:01
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW03SW_060920
Collection Date: 09-Jun-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-01
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	17-Jun-2020 16:01
cis-1,2-Dichloroethene	**4.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	17-Jun-2020 16:01
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	17-Jun-2020 16:01
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	17-Jun-2020 16:01
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	17-Jun-2020 16:01
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:01
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
trans-1,2-Dichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	17-Jun-2020 16:01
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
Trichloroethene	**28**		**0.20**	**0.50**	**1.0**	**UG/L**	1	17-Jun-2020 16:01
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:01
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:01
Surr: 1,2-Dichloroethane-d4	*82.4*			**0**	*81-118*	*%REC*	*1*	*17-Jun-2020 16:01*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*17-Jun-2020 16:01*
Surr: Dibromofluoromethane	*89.8*			**0**	*80-119*	*%REC*	*1*	*17-Jun-2020 16:01*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*17-Jun-2020 16:01*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.15**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 12:32
Surr: 2-Fluorobiphenyl	*91.3*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 12:32*
Surr: 4-Terphenyl-d14	*129*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 12:32*
Surr: Nitrobenzene-d5	*47.8*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 12:32*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW03SW_060920
Collection Date: 09-Jun-2020 07:45

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0599**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 13:39
Antimony	**0.000592**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Arsenic	**0.00367**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Barium	**0.602**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 13:39
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 13:39
Calcium	**159**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 13:39
Chromium	**0.0179**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Cobalt	**0.00291**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Copper	**0.00103**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Iron	**5.81**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 13:39
Lead	**0.00103**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Magnesium	**16.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 13:39
Manganese	**0.649**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Nickel	**0.00465**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
Potassium	**87.0**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 13:39
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 13:39
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 13:39
Sodium	**192**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 14:59
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 13:39
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 13:39
Zinc	**0.0150**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 13:39
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 17-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	17-Jun-2020 16:18
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD1_060920
Collection Date: 09-Jun-2020 09:05

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM	**Method:SW8270SIM**					Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.88**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 12:51
Surr: 2-Fluorobiphenyl	*84.3*		**0**	*40-140*		*%REC*	*10*	*27-Jun-2020 12:51*
Surr: 4-Terphenyl-d14	*67.6*		**0**	*40-140*		*%REC*	*10*	*27-Jun-2020 12:51*
Surr: Nitrobenzene-d5	*66.7*		**0**	*40-140*		*%REC*	*10*	*27-Jun-2020 12:51*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW21_060920
Collection Date: 09-Jun-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-03
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	17-Jun-2020 16:49
1,1,1-Trichloroethane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	UG/L	10	17-Jun-2020 16:49
1,1,2-Trichloroethane	**12**		**3.0**	**10**	**10**	**UG/L**	10	17-Jun-2020 16:49
1,1-Dichloroethane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
1,1-Dichloroethene	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
1,1-Dichloropropene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
1,2,3-Trichlorobenzene	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
1,2,3-Trichloropropane	10	U	5.0	10	10	UG/L	10	17-Jun-2020 16:49
1,2,4-Trichlorobenzene	10	U	5.0	10	10	UG/L	10	17-Jun-2020 16:49
1,2,4-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
1,2-Dibromo-3-chloropropane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
1,2-Dibromoethane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
1,2-Dichlorobenzene	10	U	5.0	10	10	UG/L	10	17-Jun-2020 16:49
1,2-Dichloroethane	**44**		**2.0**	**5.0**	**10**	**UG/L**	10	17-Jun-2020 16:49
1,2-Dichloropropane	10	U	5.0	10	10	UG/L	10	17-Jun-2020 16:49
1,3,5-Trimethylbenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
1,3-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
1,3-Dichloropropane	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
1,4-Dichlorobenzene	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
2,2-Dichloropropane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
2-Butanone	10	U	5.0	10	20	UG/L	10	17-Jun-2020 16:49
2-Chlorotoluene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
2-Hexanone	20	U	10	20	20	UG/L	10	17-Jun-2020 16:49
4-Chlorotoluene	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
4-Isopropyltoluene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
4-Methyl-2-pentanone	20	U	7.0	20	20	UG/L	10	17-Jun-2020 16:49
Acetone	10	U	4.0	10	20	UG/L	10	17-Jun-2020 16:49
Benzene	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
Bromobenzene	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
Bromochloromethane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
Bromodichloromethane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
Bromoform	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
Bromomethane	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
Carbon disulfide	10	U	6.0	10	20	UG/L	10	17-Jun-2020 16:49
Carbon tetrachloride	10	U	5.0	10	10	UG/L	10	17-Jun-2020 16:49
Chlorobenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Chloroethane	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Chloroform	**11**		**2.0**	**5.0**	**10**	**UG/L**	10	17-Jun-2020 16:49

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW21_060920
Collection Date: 09-Jun-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-03
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	17-Jun-2020 16:49
cis-1,2-Dichloroethene	**150**		**2.0**	**5.0**	**10**	**UG/L**	10	17-Jun-2020 16:49
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	10	UG/L	10	17-Jun-2020 16:49
Dibromochloromethane	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Dibromomethane	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
Dichlorodifluoromethane	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Ethylbenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Hexachlorobutadiene	10	U	10	10	10	UG/L	10	17-Jun-2020 16:49
Isopropylbenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
m,p-Xylene	10	U	5.0	10	20	UG/L	10	17-Jun-2020 16:49
Methylene chloride	10	U	4.0	10	20	UG/L	10	17-Jun-2020 16:49
n-Butylbenzene	10	U	4.0	10	10	UG/L	10	17-Jun-2020 16:49
n-Propylbenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Naphthalene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
o-Xylene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
sec-Butylbenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Styrene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
tert-Butylbenzene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Tetrachloroethene	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Toluene	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
trans-1,2-Dichloroethene	**6.6**	J	**2.0**	**5.0**	**10**	**UG/L**	10	17-Jun-2020 16:49
trans-1,3-Dichloropropene	5.0	U	2.0	5.0	10	UG/L	10	17-Jun-2020 16:49
Trichloroethene	**7,200**		**20**	**50**	**100**	**UG/L**	100	17-Jun-2020 18:01
Trichlorofluoromethane	10	U	3.0	10	10	UG/L	10	17-Jun-2020 16:49
Vinyl chloride	**23**		**2.0**	**5.0**	**10**	**UG/L**	10	17-Jun-2020 16:49
Surr: 1,2-Dichloroethane-d4	*83.5*			**0**	*81-118*	*%REC*	*10*	*17-Jun-2020 16:49*
Surr: 1,2-Dichloroethane-d4	*82.3*			**0**	*81-118*	*%REC*	*100*	*17-Jun-2020 18:01*
Surr: 4-Bromofluorobenzene	*100.0*			**0**	*85-114*	*%REC*	*10*	*17-Jun-2020 16:49*
Surr: 4-Bromofluorobenzene	*97.5*			**0**	*85-114*	*%REC*	*100*	*17-Jun-2020 18:01*
Surr: Dibromofluoromethane	*89.2*			**0**	*80-119*	*%REC*	*100*	*17-Jun-2020 18:01*
Surr: Dibromofluoromethane	*89.4*			**0**	*80-119*	*%REC*	*10*	*17-Jun-2020 16:49*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*10*	*17-Jun-2020 16:49*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*100*	*17-Jun-2020 18:01*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.36**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 13:11
Surr: 2-Fluorobiphenyl	*91.2*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 13:11*
Surr: 4-Terphenyl-d14	*120*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 13:11*
Surr: Nitrobenzene-d5	*55.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 13:11*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW21_060920
Collection Date: 09-Jun-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0548**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 14:41
Antimony	**0.00128**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:41
Arsenic	**0.000626**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:41
Barium	**8.32**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	23-Jun-2020 16:09
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:41
Cadmium	**0.000811**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	23-Jun-2020 14:41
Calcium	**208**		**0.680**	**1.00**	**10.0**	**mg/L**	20	23-Jun-2020 16:09
Chromium	**2.22**		**0.00800**	**0.0100**	**0.100**	**mg/L**	20	23-Jun-2020 16:09
Cobalt	**0.116**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:41
Copper	**0.0784**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:41
Iron	**27.7**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:41
Lead	**0.000858**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 14:41
Magnesium	**168**		**0.200**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 16:09
Manganese	**2.53**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	23-Jun-2020 16:09
Nickel	**2.34**		**0.0120**	**0.0200**	**0.100**	**mg/L**	20	23-Jun-2020 16:09
Potassium	**2.65**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:41
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 14:41
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 14:41
Sodium	**482**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 16:09
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:41
Vanadium	**0.00624**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 14:41
Zinc	**0.0338**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:41
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 17-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	17-Jun-2020 16:19
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW07_060920
Collection Date: 09-Jun-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-04
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	17-Jun-2020 16:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	17-Jun-2020 16:25
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	17-Jun-2020 16:25
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	17-Jun-2020 16:25
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	17-Jun-2020 16:25
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	17-Jun-2020 16:25
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW07_060920
Collection Date: 09-Jun-2020 11:40

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-04
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	17-Jun-2020 16:25
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	17-Jun-2020 16:25
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	17-Jun-2020 16:25
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 16:25
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 16:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 16:25
Surr: 1,2-Dichloroethane-d4	*82.5*			**0**	*81-118*	*%REC*	*1*	*17-Jun-2020 16:25*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*85-114*	*%REC*	*1*	*17-Jun-2020 16:25*
Surr: Dibromofluoromethane	*88.3*			**0**	*80-119*	*%REC*	*1*	*17-Jun-2020 16:25*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*17-Jun-2020 16:25*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.20**		**0.010**	**0.010**	**0.010**	**ug/L**	1	29-Jun-2020 12:54
Surr: 2-Fluorobiphenyl	*77.7*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 12:54*
Surr: 4-Terphenyl-d14	*80.9*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 12:54*
Surr: Nitrobenzene-d5	*75.5*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 12:54*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 09-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	17-Jun-2020 15:37
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	17-Jun-2020 15:37
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	17-Jun-2020 15:37
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	17-Jun-2020 15:37
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	17-Jun-2020 15:37
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 09-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060495
Lab ID:HS20060495-05
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	17-Jun-2020 15:37
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	17-Jun-2020 15:37
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	17-Jun-2020 15:37
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	17-Jun-2020 15:37
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	17-Jun-2020 15:37
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	17-Jun-2020 15:37
Surr: 1,2-Dichloroethane-d4	*83.6*			**0**	*81-118*	*%REC*	*1*	*17-Jun-2020 15:37*
Surr: 4-Bromofluorobenzene	*98.4*			**0**	*85-114*	*%REC*	*1*	*17-Jun-2020 15:37*
Surr: Dibromofluoromethane	*89.1*			**0**	*80-119*	*%REC*	*1*	*17-Jun-2020 15:37*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*17-Jun-2020 15:37*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

Batch ID: 154443 **Start Date:** 13 Jun 2020 10:00 **End Date:** 13 Jun 2020 15:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060495-01	1	1000 (mL)	1 (mL)	0.001
HS20060495-02	1	1000 (mL)	1 (mL)	0.001
HS20060495-03	1	1000 (mL)	1 (mL)	0.001
HS20060495-04	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154572 **Start Date:** 17 Jun 2020 10:00 **End Date:** 17 Jun 2020 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060495-01		10 (mL)	10 (mL)	1
HS20060495-03		10 (mL)	10 (mL)	1

Batch ID: 154643 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060495-01		10 (mL)	10 (mL)	1
HS20060495-03		10 (mL)	10 (mL)	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154443 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060495-01	18CPTMW03SW_060920	09 Jun 2020 07:45		13 Jun 2020 12:44	27 Jun 2020 12:32	10
HS20060495-02	AWD1_060920	09 Jun 2020 09:05		13 Jun 2020 12:44	27 Jun 2020 12:51	10
HS20060495-03	MW21_060920	09 Jun 2020 10:15		13 Jun 2020 12:44	27 Jun 2020 13:11	10
HS20060495-04	18CPTMW07_060920	09 Jun 2020 11:40		13 Jun 2020 12:44	29 Jun 2020 12:54	1
Batch ID: 154572 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060495-01	18CPTMW03SW_060920	09 Jun 2020 07:45		17 Jun 2020 10:00	17 Jun 2020 16:18	1
HS20060495-03	MW21_060920	09 Jun 2020 10:15		17 Jun 2020 10:00	17 Jun 2020 16:19	1
Batch ID: 154643 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060495-01	18CPTMW03SW_060920	09 Jun 2020 07:45		19 Jun 2020 14:00	23 Jun 2020 14:59	20
HS20060495-01	18CPTMW03SW_060920	09 Jun 2020 07:45		19 Jun 2020 14:00	23 Jun 2020 13:39	1
HS20060495-03	MW21_060920	09 Jun 2020 10:15		19 Jun 2020 14:00	23 Jun 2020 16:09	20
HS20060495-03	MW21_060920	09 Jun 2020 10:15		19 Jun 2020 14:00	23 Jun 2020 14:41	1
Batch ID: R363462 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060495-05	Trip Blank	09 Jun 2020 00:00			17 Jun 2020 15:37	1
Batch ID: R363462 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060495-01	18CPTMW03SW_060920	09 Jun 2020 07:45			17 Jun 2020 16:01	1
HS20060495-03	MW21_060920	09 Jun 2020 10:15			17 Jun 2020 18:01	100
HS20060495-03	MW21_060920	09 Jun 2020 10:15			17 Jun 2020 16:49	10
HS20060495-04	18CPTMW07_060920	09 Jun 2020 11:40			17 Jun 2020 16:25	1
Batch ID: R363823 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060495-01	18CPTMW03SW_060920	09 Jun 2020 07:45			24 Jun 2020 12:04	1
HS20060495-03	MW21_060920	09 Jun 2020 10:15			24 Jun 2020 12:04	1
HS20060495-04	18CPTMW07_060920	09 Jun 2020 11:40			24 Jun 2020 12:04	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154572 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154572** Units: **mg/L** Analysis Date: **17-Jun-2020 15:32**
Client ID: Run ID: **HG03_363439** SeqNo: **5623672** PrepDate: **17-Jun-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-154572** Units: **mg/L** Analysis Date: **17-Jun-2020 15:34**
Client ID: Run ID: **HG03_363439** SeqNo: **5623673** PrepDate: **17-Jun-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: **HS20060574-05MS** Units: **mg/L** Analysis Date: **17-Jun-2020 15:38**
Client ID: Run ID: **HG03_363439** SeqNo: **5623675** PrepDate: **17-Jun-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	0.00002100	101	75 - 125				

MSD Sample ID: **HS20060574-05MSD** Units: **mg/L** Analysis Date: **17-Jun-2020 15:40**
Client ID: Run ID: **HG03_363439** SeqNo: **5623676** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00504	0.000200	0.005	0.00002100	100	75 - 125	0.005050	0.198	20	

The following samples were analyzed in this batch: HS20060495-01 HS20060495-03

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:17**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631768** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.01444	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:11**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631766** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1015	0.0100	0.1	0	102	84 - 117				
Antimony	0.04728	0.00500	0.05	0	94.6	85 - 117				
Arsenic	0.04981	0.00500	0.05	0	99.6	84 - 116				
Barium	0.04994	0.00500	0.05	0	99.9	86 - 114				
Beryllium	0.04585	0.00200	0.05	0	91.7	83 - 121				
Cadmium	0.05017	0.00200	0.05	0	100	87 - 115				
Calcium	4.661	0.500	5	0	93.2	87 - 118				
Chromium	0.04826	0.00500	0.05	0	96.5	85 - 116				
Cobalt	0.04736	0.00500	0.05	0	94.7	86 - 115				
Copper	0.04996	0.00500	0.05	0	99.9	85 - 118				
Iron	4.755	0.200	5	0	95.1	87 - 118				
Lead	0.04742	0.00500	0.05	0	94.8	88 - 115				
Magnesium	4.798	0.200	5	0	96.0	83 - 118				
Manganese	0.04969	0.00500	0.05	0	99.4	87 - 115				
Nickel	0.04892	0.00500	0.05	0	97.8	85 - 117				
Potassium	4.943	0.200	5	0	98.9	87 - 115				
Selenium	0.05066	0.00500	0.05	0	101	80 - 120				
Silver	0.05015	0.00500	0.05	0	100	85 - 116				
Sodium	4.799	0.200	5	0	96.0	85 - 117				
Thallium	0.04521	0.00200	0.05	0	90.4	82 - 116				
Vanadium	0.04764	0.00500	0.05	0	95.3	86 - 115				
Zinc	0.05144	0.00500	0.05	0	103	83 - 119				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:25**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631771** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1005	0.0100	0.1	0.01494	85.6	84 - 117				
Antimony	0.04623	0.00500	0.05	0.000146	92.2	85 - 117				
Arsenic	0.04858	0.00500	0.05	0.001705	93.7	84 - 116				
Barium	1.182	0.00500	0.05	1.246	-128	86 - 114				SO
Beryllium	0.04288	0.00200	0.05	0.000021	85.7	83 - 121				
Cadmium	0.04562	0.00200	0.05	0.000129	91.0	87 - 115				
Calcium	45.9	0.500	5	44.32	31.8	87 - 118				SO
Chromium	0.04607	0.00500	0.05	0.000391	91.4	85 - 116				
Cobalt	0.04474	0.00500	0.05	0.000124	89.2	86 - 115				
Copper	0.04601	0.00500	0.05	0.000742	90.5	85 - 118				
Iron	68.61	0.200	5	68.38	4.67	87 - 118				SO
Lead	0.04545	0.00500	0.05	0.000052	90.8	88 - 115				
Magnesium	27.58	0.200	5	24.18	67.9	83 - 118				SO
Manganese	1.197	0.00500	0.05	1.223	-51.8	87 - 115				SO
Nickel	0.04623	0.00500	0.05	0.000426	91.6	85 - 117				
Selenium	0.04772	0.00500	0.05	-0.00002	95.5	80 - 120				
Silver	0.04538	0.00500	0.05	0.000008	90.7	85 - 116				
Sodium	142.4	0.200	5	143.5	-22.6	85 - 117				SO
Thallium	0.0425	0.00200	0.05	-0.000005	85.0	82 - 116				
Vanadium	0.04535	0.00500	0.05	-0.001238	93.2	86 - 115				
Zinc	0.05116	0.00500	0.05	0.006271	89.8	83 - 119				

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 14:49**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631885** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Potassium	7.851	0.200	5	3.206	92.9	87 - 115				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060498-08MSD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:27**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631772** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1026	0.0100	0.1	0.01494	87.6	84 - 117	0.1005	2	20	
Antimony	0.04773	0.00500	0.05	0.000146	95.2	85 - 117	0.04623	3.2	20	
Arsenic	0.05012	0.00500	0.05	0.001705	96.8	84 - 116	0.04858	3.13	20	
Barium	1.21	0.00500	0.05	1.246	-70.5	86 - 114	1.182	2.4	20	SO
Beryllium	0.04311	0.00200	0.05	0.000021	86.2	83 - 121	0.04288	0.551	20	
Cadmium	0.04831	0.00200	0.05	0.000129	96.4	87 - 115	0.04562	5.74	20	
Calcium	47.19	0.500	5	44.32	57.5	87 - 118	45.9	2.76	20	SO
Chromium	0.04751	0.00500	0.05	0.000391	94.2	85 - 116	0.04607	3.09	20	
Cobalt	0.0458	0.00500	0.05	0.000124	91.4	86 - 115	0.04474	2.34	20	
Copper	0.04698	0.00500	0.05	0.000742	92.5	85 - 118	0.04601	2.09	20	
Iron	70.93	0.200	5	68.38	51.1	87 - 118	68.61	3.33	20	SO
Lead	0.04948	0.00500	0.05	0.000052	98.8	88 - 115	0.04545	8.48	20	
Magnesium	28.33	0.200	5	24.18	83.0	83 - 118	27.58	2.69	20	SO
Manganese	1.223	0.00500	0.05	1.223	0.370	87 - 115	1.197	2.16	20	SO
Nickel	0.04705	0.00500	0.05	0.000426	93.3	85 - 117	0.04623	1.76	20	
Potassium	7.723	0.200	5	3.206	90.3	87 - 115	7.551	2.25	20	
Selenium	0.0485	0.00500	0.05	-0.00002	97.0	80 - 120	0.04772	1.6	20	
Silver	0.04658	0.00500	0.05	0.000008	93.1	85 - 116	0.04538	2.61	20	
Sodium	146.4	0.200	5	143.5	57.2	85 - 117	142.4	2.76	20	SO
Thallium	0.04759	0.00200	0.05	-0.000005	95.2	82 - 116	0.0425	11.3	20	
Vanadium	0.04655	0.00500	0.05	-0.001238	95.6	86 - 115	0.04535	2.63	20	
Zinc	0.0528	0.00500	0.05	0.006271	93.1	83 - 119	0.05116	3.15	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060498-08PDS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:30**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631773** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1148	0.0100	0.1	0.01494	99.8	80 - 120				
Antimony	0.09919	0.00500	0.1	0.000146	99.0	80 - 120				
Arsenic	0.113	0.00500	0.1	0.001705	111	80 - 120				
Barium	1.204	0.00500	0.1	1.246	-41.6	80 - 120				SO
Beryllium	0.0962	0.00200	0.1	0.000021	96.2	80 - 120				
Cadmium	0.106	0.00200	0.1	0.000129	106	80 - 120				
Calcium	51.24	0.500	10	44.32	69.3	80 - 120				SO
Chromium	0.1086	0.00500	0.1	0.000391	108	80 - 120				
Cobalt	0.106	0.00500	0.1	0.000124	106	80 - 120				
Copper	0.1089	0.00500	0.1	0.000742	108	80 - 120				
Iron	73.82	0.200	10	68.38	54.4	80 - 120				SO
Lead	0.1057	0.00500	0.1	0.000052	106	80 - 120				
Magnesium	32.8	0.200	10	24.18	86.2	80 - 120				
Manganese	1.229	0.00500	0.1	1.223	5.63	80 - 120				SO
Nickel	0.109	0.00500	0.1	0.000426	109	80 - 120				
Potassium	13.74	0.200	10	3.206	105	80 - 120				
Selenium	0.1125	0.00500	0.1	-0.00002	113	80 - 120				
Silver	0.1003	0.00500	0.1	0.000008	100	80 - 120				
Sodium	144.2	0.200	10	143.5	7.08	80 - 120				SO
Thallium	0.1096	0.00200	0.1	-0.000005	110	80 - 120				
Vanadium	0.11	0.00500	0.1	-0.001238	111	80 - 120				
Zinc	0.1178	0.00500	0.1	0.006271	111	80 - 120				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060498-08SD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:22**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631770** PrepDate: **19-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.02193	0.0500					0.01494	0	10	J
Antimony	0.00250	0.0250					0.000146	0	10	U
Arsenic	0.00250	0.0250					0.001705	0	10	U
Barium	1.206	0.0250					1.246	3.18	10	
Beryllium	0.00250	0.0100					0.000021	0	10	U
Cadmium	0.00250	0.0100					0.000129	0	10	U
Calcium	43.81	2.50					44.32	1.14	10	
Chromium	0.00250	0.0250					0.000391	0	10	U
Cobalt	0.00250	0.0250					0.000124	0	10	U
Copper	0.0125	0.0250					0.000742	0	10	U
Iron	70.45	1.00					68.38	3.04	10	
Lead	0.00500	0.0250					0.000052	0	10	U
Magnesium	24.9	1.00					24.18	2.98	10	
Manganese	1.246	0.0250					1.223	1.88	10	
Nickel	0.00500	0.0250					0.000426	0	10	U
Potassium	3.055	1.00					3.206	4.72	10	
Selenium	0.0125	0.0250					-0.00002	0	10	U
Silver	0.00250	0.0250					0.000008	0	10	U
Sodium	146.1	1.00					143.5	1.83	10	
Thallium	0.00250	0.0100					-0.000005	0	10	U
Vanadium	0.00500	0.0250					-0.001238	0	10	U
Zinc	0.0125	0.0250					0.006271	0	10	U

The following samples were analyzed in this batch: HS20060495-01 HS20060495-03

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: 154443 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154443** Units: **ug/L** Analysis Date: **27-Jun-2020 10:34**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640906** PrepDate: **13-Jun-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	*0.07844*	*0*	*0.08*	*0*	*98.0*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08403*	*0*	*0.08*	*0*	*105*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08012*	*0*	*0.08*	*0*	*100*	*40 - 140*				

LCS Sample ID: **LCS-154443** Units: **ug/L** Analysis Date: **27-Jun-2020 10:54**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640907** PrepDate: **13-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1007	0.010	0.08	0	126	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08275*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0827*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08411*	*0*	*0.08*	*0*	*105*	*40 - 140*				

LCSD Sample ID: **LCSD-154443** Units: **ug/L** Analysis Date: **27-Jun-2020 11:14**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640908** PrepDate: **13-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1097	0.010	0.08	0	137	40 - 140	0.1007	8.55	20	
Surr: 2-Fluorobiphenyl	*0.07804*	*0*	*0.08*	*0*	*97.6*	*40 - 140*	*0.08275*	*5.85*	*20*	
Surr: 4-Terphenyl-d14	*0.08552*	*0*	*0.08*	*0*	*107*	*40 - 140*	*0.0827*	*3.35*	*20*	
Surr: Nitrobenzene-d5	*0.07892*	*0*	*0.08*	*0*	*98.6*	*40 - 140*	*0.08411*	*6.36*	*20*	

The following samples were analyzed in this batch: HS20060495-01 HS20060495-02 HS20060495-03 HS20060495-04

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200617** Units: **UG/L** Analysis Date: **17-Jun-2020 14:25**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624345** 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200617** Units: **UG/L** Analysis Date: **17-Jun-2020 14:25**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624345** 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	*41.2*	*1.0*	*50*	*0*	*82.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.8*	*1.0*	*50*	*0*	*97.6*	*85 - 114*				
Surr: Dibromofluoromethane	*44.57*	*1.0*	*50*	*0*	*89.1*	*80 - 119*				
Surr: Toluene-d8	*53.71*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200617** Units: **UG/L** Analysis Date: **17-Jun-2020 13:37**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624344** 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	18.51	1.0	20	0	92.6	74 - 131				
1,1,2,2-Tetrachloroethane	18.48	1.0	20	0	92.4	71 - 121				
1,1,2-Trichloroethane	19.61	1.0	20	0	98.1	80 - 119				
1,1-Dichloroethane	19.04	1.0	20	0	95.2	77 - 125				
1,1-Dichloroethene	18.26	1.0	20	0	91.3	71 - 131				
1,1-Dichloropropene	18.22	1.0	20	0	91.1	78 - 125				
1,2,3-Trichlorobenzene	31.23	1.0	20	0	156	69 - 129				S
1,2,3-Trichloropropane	18.52	1.0	20	0	92.6	73 - 122				
1,2,4-Trichlorobenzene	29.43	1.0	20	0	147	69 - 130				S
1,2,4-Trimethylbenzene	18.53	1.0	20	0	92.6	76 - 124				
1,2-Dibromo-3-chloropropane	21.23	1.0	20	0	106	62 - 128				
1,2-Dibromoethane	20.02	1.0	20	0	100	77 - 121				
1,2-Dichlorobenzene	19.91	1.0	20	0	99.6	80 - 119				
1,2-Dichloroethane	19.23	1.0	20	0	96.1	73 - 128				
1,2-Dichloropropane	20.29	1.0	20	0	101	78 - 122				
1,3,5-Trimethylbenzene	17.96	1.0	20	0	89.8	75 - 124				
1,3-Dichlorobenzene	18.34	1.0	20	0	91.7	80 - 119				
1,3-Dichloropropane	18.99	1.0	20	0	94.9	80 - 119				
1,4-Dichlorobenzene	18.51	1.0	20	0	92.5	79 - 118				
2,2-Dichloropropane	18.98	1.0	20	0	94.9	60 - 139				
2-Butanone	35.98	2.0	40	0	89.9	56 - 143				
2-Chlorotoluene	17.52	1.0	20	0	87.6	79 - 122				
2-Hexanone	37.91	2.0	40	0	94.8	57 - 139				
4-Chlorotoluene	17.47	1.0	20	0	87.4	78 - 122				
4-Isopropyltoluene	18.25	1.0	20	0	91.3	77 - 127				
4-Methyl-2-pentanone	38.11	2.0	40	0	95.3	67 - 130				
Acetone	31.27	2.0	40	0	78.2	39 - 160				
Benzene	19.05	1.0	20	0	95.2	79 - 120				
Bromobenzene	19.18	1.0	20	0	95.9	80 - 120				
Bromochloromethane	19.85	1.0	20	0	99.2	78 - 123				
Bromodichloromethane	19.51	1.0	20	0	97.5	79 - 125				
Bromoform	19.64	1.0	20	0	98.2	66 - 130				
Bromomethane	18.83	1.0	20	0	94.1	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200617** Units: **UG/L** Analysis Date: **17-Jun-2020 13:37**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624344** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.53	2.0	40	0	93.8	64 - 133				
Carbon tetrachloride	17.59	1.0	20	0	88.0	72 - 136				
Chlorobenzene	19.21	1.0	20	0	96.1	82 - 118				
Chloroethane	18.54	1.0	20	0	92.7	60 - 138				
Chloroform	19.44	1.0	20	0	97.2	79 - 124				
Chloromethane	17.14	1.0	20	0	85.7	50 - 139				
cis-1,2-Dichloroethene	19.82	1.0	20	0	99.1	78 - 123				
cis-1,3-Dichloropropene	19.68	1.0	20	0	98.4	75 - 124				
Dibromochloromethane	19.12	1.0	20	0	95.6	74 - 126				
Dibromomethane	19.26	1.0	20	0	96.3	79 - 123				
Dichlorodifluoromethane	16.9	1.0	20	0	84.5	32 - 152				
Ethylbenzene	18.76	1.0	20	0	93.8	79 - 121				
Hexachlorobutadiene	32.03	1.0	20	0	160	66 - 134				S
Isopropylbenzene	18.46	1.0	20	0	92.3	72 - 131				
m,p-Xylene	37.55	2.0	40	0	93.9	80 - 121				
Methylene chloride	21.5	2.0	20	0	108	74 - 124				
Naphthalene	26.51	1.0	20	0	133	61 - 128				S
n-Butylbenzene	18.24	1.0	20	0	91.2	75 - 128				
n-Propylbenzene	17.73	1.0	20	0	88.6	76 - 126				
o-Xylene	19.2	1.0	20	0	96.0	78 - 122				
sec-Butylbenzene	17.46	1.0	20	0	87.3	77 - 126				
Styrene	19.09	1.0	20	0	95.4	78 - 123				
tert-Butylbenzene	18.04	1.0	20	0	90.2	78 - 124				
Tetrachloroethene	19.21	1.0	20	0	96.1	74 - 129				
Toluene	18.97	1.0	20	0	94.8	80 - 121				
trans-1,2-Dichloroethene	19.55	1.0	20	0	97.8	75 - 124				
trans-1,3-Dichloropropene	19.62	1.0	20	0	98.1	73 - 127				
Trichloroethene	18.83	1.0	20	0	94.1	79 - 123				
Trichlorofluoromethane	18.87	1.0	20	0	94.4	65 - 141				
Vinyl chloride	16.96	1.0	20	0	84.8	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.86*	*1.0*	*50*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.15*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*51.58*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*47.85*	*1.0*	*50*	*0*	*95.7*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060453-01MS** Units: **UG/L** Analysis Date: **17-Jun-2020 17:13**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624352** 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	21.49	1.0	20	0	107	78 - 124				
1,1,1-Trichloroethane	17.23	1.0	20	0	86.2	74 - 131				
1,1,2,2-Tetrachloroethane	20.65	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	21.27	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	16.91	1.0	20	0	84.5	77 - 125				
1,1-Dichloroethene	15.69	1.0	20	0	78.4	71 - 131				
1,1-Dichloropropene	18.75	1.0	20	0	93.7	78 - 125				
1,2,3-Trichlorobenzene	24.86	1.0	20	0	124	69 - 129				
1,2,3-Trichloropropane	19.98	1.0	20	0	99.9	73 - 122				
1,2,4-Trichlorobenzene	24.64	1.0	20	0	123	69 - 130				
1,2,4-Trimethylbenzene	21.29	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	24.08	1.0	20	0	120	62 - 128				
1,2-Dibromoethane	21.51	1.0	20	0	108	77 - 121				
1,2-Dichlorobenzene	21.34	1.0	20	0	107	80 - 119				
1,2-Dichloroethane	19.99	1.0	20	0.8112	95.9	73 - 128				
1,2-Dichloropropane	20.51	1.0	20	0	103	78 - 122				
1,3,5-Trimethylbenzene	20.77	1.0	20	0	104	75 - 124				
1,3-Dichlorobenzene	20.98	1.0	20	0	105	80 - 119				
1,3-Dichloropropane	20.51	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	20.4	1.0	20	0	102	79 - 118				
2,2-Dichloropropane	17	1.0	20	0	85.0	60 - 139				
2-Butanone	30.85	2.0	40	0	77.1	56 - 143				
2-Chlorotoluene	19.98	1.0	20	0	99.9	79 - 122				
2-Hexanone	41.31	2.0	40	0	103	57 - 139				
4-Chlorotoluene	20.07	1.0	20	0	100	78 - 122				
4-Isopropyltoluene	21.57	1.0	20	0	108	77 - 127				
4-Methyl-2-pentanone	40.77	2.0	40	0	102	67 - 130				
Acetone	23.15	2.0	40	0	57.9	39 - 160				
Benzene	19.15	1.0	20	0	95.8	79 - 120				
Bromobenzene	21.09	1.0	20	0	105	80 - 120				
Bromochloromethane	17.26	1.0	20	0	86.3	78 - 123				
Bromodichloromethane	19.47	1.0	20	0	97.4	79 - 125				
Bromoform	21.1	1.0	20	0	106	66 - 130				
Bromomethane	11.88	1.0	20	0	59.4	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060453-01MS** Units: **UG/L** Analysis Date: **17-Jun-2020 17:13**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624352** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	32.78	2.0	40	0	81.9	64 - 133				
Carbon tetrachloride	18.6	1.0	20	0	93.0	72 - 136				
Chlorobenzene	20.65	1.0	20	0	103	82 - 118				
Chloroethane	13.41	1.0	20	0	67.1	60 - 138				
Chloroform	16.92	1.0	20	0	84.6	79 - 124				
Chloromethane	9.835	1.0	20	0	49.2	50 - 139				S
cis-1,2-Dichloroethene	34.85	1.0	20	17.43	87.1	78 - 123				
cis-1,3-Dichloropropene	19.28	1.0	20	0	96.4	75 - 124				
Dibromochloromethane	20.71	1.0	20	0	104	74 - 126				
Dibromomethane	19.33	1.0	20	0	96.7	79 - 123				
Dichlorodifluoromethane	5.812	1.0	20	0	29.1	32 - 152				S
Ethylbenzene	20.95	1.0	20	0	105	79 - 121				
Hexachlorobutadiene	27.62	1.0	20	0	138	66 - 134				S
Isopropylbenzene	21.14	1.0	20	0	106	72 - 131				
m,p-Xylene	42.08	2.0	40	0	105	80 - 121				
Methylene chloride	17.14	2.0	20	0	85.7	74 - 124				
Naphthalene	23.72	1.0	20	0	119	61 - 128				
n-Butylbenzene	21.88	1.0	20	0	109	75 - 128				
n-Propylbenzene	20.95	1.0	20	0	105	76 - 126				
o-Xylene	21.36	1.0	20	0	107	78 - 122				
sec-Butylbenzene	21.25	1.0	20	0	106	77 - 126				
Styrene	20.71	1.0	20	0	104	78 - 123				
tert-Butylbenzene	20.92	1.0	20	0	105	78 - 124				
Tetrachloroethene	22.38	1.0	20	0	112	74 - 129				
Toluene	20.63	1.0	20	0	103	80 - 121				
trans-1,2-Dichloroethene	17.29	1.0	20	0	86.4	75 - 124				
trans-1,3-Dichloropropene	19.64	1.0	20	0	98.2	73 - 127				
Trichloroethene	24.1	1.0	20	3.392	104	79 - 123				
Trichlorofluoromethane	16.04	1.0	20	0	80.2	65 - 141				
Vinyl chloride	11.75	1.0	20	0	58.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*40.84*	*1.0*	*50*	*0*	*81.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.5*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*44.22*	*1.0*	*50*	*0*	*88.4*	*80 - 119*				
Surr: Toluene-d8	*52.84*	*1.0*	*50*	*0*	*106*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060453-01MSD** Units: **UG/L** Analysis Date: **17-Jun-2020 17:37**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624353** 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	20.1	1.0	20	0	100	78 - 124	21.49	6.72	20	
1,1,1-Trichloroethane	17.9	1.0	20	0	89.5	74 - 131	17.23	3.78	20	
1,1,2,2-Tetrachloroethane	19.48	1.0	20	0	97.4	71 - 121	20.65	5.79	20	
1,1,2-Trichloroethane	20.13	1.0	20	0	101	80 - 119	21.27	5.52	20	
1,1-Dichloroethane	16.95	1.0	20	0	84.8	77 - 125	16.91	0.253	20	
1,1-Dichloroethene	16.65	1.0	20	0	83.3	71 - 131	15.69	5.96	20	
1,1-Dichloropropene	19.55	1.0	20	0	97.7	78 - 125	18.75	4.2	20	
1,2,3-Trichlorobenzene	31.95	1.0	20	0	160	69 - 129	24.86	25	20	SR
1,2,3-Trichloropropane	17.96	1.0	20	0	89.8	73 - 122	19.98	10.7	20	
1,2,4-Trichlorobenzene	28.59	1.0	20	0	143	69 - 130	24.64	14.9	20	S
1,2,4-Trimethylbenzene	20.09	1.0	20	0	100	76 - 124	21.29	5.81	20	
1,2-Dibromo-3-chloropropane	23.56	1.0	20	0	118	62 - 128	24.08	2.2	20	
1,2-Dibromoethane	20.38	1.0	20	0	102	77 - 121	21.51	5.42	20	
1,2-Dichlorobenzene	20.46	1.0	20	0	102	80 - 119	21.34	4.19	20	
1,2-Dichloroethane	19.22	1.0	20	0.8112	92.0	73 - 128	19.99	3.94	20	
1,2-Dichloropropane	19.7	1.0	20	0	98.5	78 - 122	20.51	4.04	20	
1,3,5-Trimethylbenzene	19.95	1.0	20	0	99.8	75 - 124	20.77	4.02	20	
1,3-Dichlorobenzene	19.81	1.0	20	0	99.1	80 - 119	20.98	5.75	20	
1,3-Dichloropropane	19.24	1.0	20	0	96.2	80 - 119	20.51	6.4	20	
1,4-Dichlorobenzene	19.1	1.0	20	0	95.5	79 - 118	20.4	6.58	20	
2,2-Dichloropropane	17.27	1.0	20	0	86.3	60 - 139	17	1.56	20	
2-Butanone	30.09	2.0	40	0	75.2	56 - 143	30.85	2.5	20	
2-Chlorotoluene	18.86	1.0	20	0	94.3	79 - 122	19.98	5.77	20	
2-Hexanone	38.96	2.0	40	0	97.4	57 - 139	41.31	5.85	20	
4-Chlorotoluene	18.6	1.0	20	0	93.0	78 - 122	20.07	7.64	20	
4-Isopropyltoluene	21.41	1.0	20	0	107	77 - 127	21.57	0.758	20	
4-Methyl-2-pentanone	38.82	2.0	40	0	97.0	67 - 130	40.77	4.91	20	
Acetone	22.05	2.0	40	0	55.1	39 - 160	23.15	4.86	20	
Benzene	19.22	1.0	20	0	96.1	79 - 120	19.15	0.348	20	
Bromobenzene	19.38	1.0	20	0	96.9	80 - 120	21.09	8.47	20	
Bromochloromethane	17.05	1.0	20	0	85.3	78 - 123	17.26	1.2	20	
Bromodichloromethane	18.94	1.0	20	0	94.7	79 - 125	19.47	2.78	20	
Bromoform	19.86	1.0	20	0	99.3	66 - 130	21.1	6.08	20	
Bromomethane	10.03	1.0	20	0	50.1	53 - 141	11.88	16.9	20	S

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060453-01MSD** Units: **UG/L** Analysis Date: **17-Jun-2020 17:37**
Client ID: Run ID: **VOA6_363462** SeqNo: **5624353** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	34.24	2.0	40	0	85.6	64 - 133	32.78	4.38	20	
Carbon tetrachloride	19.56	1.0	20	0	97.8	72 - 136	18.6	5.02	20	
Chlorobenzene	19.84	1.0	20	0	99.2	82 - 118	20.65	4.02	20	
Chloroethane	12.97	1.0	20	0	64.9	60 - 138	13.41	3.32	20	
Chloroform	17.18	1.0	20	0	85.9	79 - 124	16.92	1.54	20	
Chloromethane	9.458	1.0	20	0	47.3	50 - 139	9.835	3.91	20	S
cis-1,2-Dichloroethene	34.55	1.0	20	17.43	85.6	78 - 123	34.85	0.874	20	
cis-1,3-Dichloropropene	19.01	1.0	20	0	95.0	75 - 124	19.28	1.42	20	
Dibromochloromethane	19.64	1.0	20	0	98.2	74 - 126	20.71	5.32	20	
Dibromomethane	18.45	1.0	20	0	92.2	79 - 123	19.33	4.69	20	
Dichlorodifluoromethane	5.976	1.0	20	0	29.9	32 - 152	5.812	2.79	20	S
Ethylbenzene	20.34	1.0	20	0	102	79 - 121	20.95	2.99	20	
Hexachlorobutadiene	30.52	1.0	20	0	153	66 - 134	27.62	9.96	20	S
Isopropylbenzene	20.72	1.0	20	0	104	72 - 131	21.14	2.03	20	
m,p-Xylene	40.76	2.0	40	0	102	80 - 121	42.08	3.19	20	
Methylene chloride	16.51	2.0	20	0	82.5	74 - 124	17.14	3.74	20	
Naphthalene	27.89	1.0	20	0	139	61 - 128	23.72	16.1	20	S
n-Butylbenzene	21.99	1.0	20	0	110	75 - 128	21.88	0.484	20	
n-Propylbenzene	20.39	1.0	20	0	102	76 - 126	20.95	2.68	20	
o-Xylene	20.45	1.0	20	0	102	78 - 122	21.36	4.34	20	
sec-Butylbenzene	21.03	1.0	20	0	105	77 - 126	21.25	1.01	20	
Styrene	19.8	1.0	20	0	99.0	78 - 123	20.71	4.5	20	
tert-Butylbenzene	20.78	1.0	20	0	104	78 - 124	20.92	0.639	20	
Tetrachloroethene	22.28	1.0	20	0	111	74 - 129	22.38	0.448	20	
Toluene	20.08	1.0	20	0	100	80 - 121	20.63	2.7	20	
trans-1,2-Dichloroethene	17.43	1.0	20	0	87.2	75 - 124	17.29	0.834	20	
trans-1,3-Dichloropropene	18.95	1.0	20	0	94.8	73 - 127	19.64	3.58	20	
Trichloroethene	23.61	1.0	20	3.392	101	79 - 123	24.1	2.07	20	
Trichlorofluoromethane	16.57	1.0	20	0	82.9	65 - 141	16.04	3.3	20	
Vinyl chloride	11.85	1.0	20	0	59.3	58 - 137	11.75	0.907	20	
Surr: 1,2-Dichloroethane-d4	*40.39*	*1.0*	*50*	*0*	*80.8*	*81 - 118*	*40.84*	*1.11*	*20*	S
Surr: 4-Bromofluorobenzene	*50.27*	*1.0*	*50*	*0*	*101*	*85 - 114*	*50.5*	*0.457*	*20*	
Surr: Dibromofluoromethane	*44.17*	*1.0*	*50*	*0*	*88.3*	*80 - 119*	*44.22*	*0.105*	*20*	
Surr: Toluene-d8	*52.25*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.84*	*1.13*	*20*	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060495

QC BATCH REPORT

Batch ID: R363462 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:	HS20060495-01	HS20060495-03	HS20060495-04	HS20060495-05

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060495**

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
Illinois	2000322020-4	09-May-2021
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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060495

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060495-01	18CPTMW03SW_060920	Login	6/11/2020 9:13:56 AM	RPM	MET105
HS20060495-01	18CPTMW03SW_060920	Login	6/11/2020 9:13:56 AM	RPM	Sub
HS20060495-01	18CPTMW03SW_060920	Login	6/11/2020 9:13:56 AM	RPM	EXT154
HS20060495-01	18CPTMW03SW_060920	Login	6/11/2020 9:13:56 AM	RPM	VOA195
HS20060495-02	AWD1_060920	Login	6/11/2020 9:13:56 AM	RPM	Sub
HS20060495-02	AWD1_060920	Login	6/11/2020 9:13:56 AM	RPM	EXT154
HS20060495-02	AWD1_060920	Login	6/11/2020 9:13:56 AM	RPM	VOA195
HS20060495-03	MW21_060920	Login	6/11/2020 9:13:56 AM	RPM	MET105
HS20060495-03	MW21_060920	Login	6/11/2020 9:13:56 AM	RPM	Sub
HS20060495-03	MW21_060920	Login	6/11/2020 9:13:56 AM	RPM	EXT154
HS20060495-03	MW21_060920	Login	6/11/2020 9:13:56 AM	RPM	VOA195
HS20060495-04	18CPTMW07_060920	Login	6/11/2020 9:13:56 AM	RPM	Sub
HS20060495-04	18CPTMW07_060920	Login	6/11/2020 9:13:56 AM	RPM	EXT154
HS20060495-04	18CPTMW07_060920	Login	6/11/2020 9:13:56 AM	RPM	VOA195
HS20060495-05	Trip Blank	Login	6/11/2020 9:13:56 AM	RPM	VOA195

ALS Houston, US Date: 29-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060495 **Date/Time Received:** 10-Jun-2020 09:40

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

Completed By: /S/ RJ Modashia 11-Jun-2020 09:21 **Reviewed by:** _____ _____

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):	1.0°C/1.0°C UC/C	IR25
Cooler(s)/Kit(s):	43406	
Date/Time sample(s) sent to storage:	06/11/2020 10AM	

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: 1 of 1

Project/Phase No: NWO1312.0150

COC Number(1):

LIMS Number:

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) | Quality Assurance Samples (6)

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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
18CPTMW03SU-060920	09Jun2020	0745	-	N		WG	6	X	X	X	X				
AWD1-060920	09Jun2020	0905	-	N		WG	1				X				
MW21-060920	09Jun2020	1015	-	N		WG	6	X	X	X	X				
18CPTMW07-060920	09Jun2020	1140		N		WG	5	X	X		X				
Trip blank	09Jun2020			TB		W	2	X							
			-												
			-												
			-												
			-												
			-												
			-												

HS20060495
Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS:

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Bonnie More	6/9/20	1430	1. Jimmy	6/10/20	09:40
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

Method of Shipment:

Fed Ex Airbill Number:

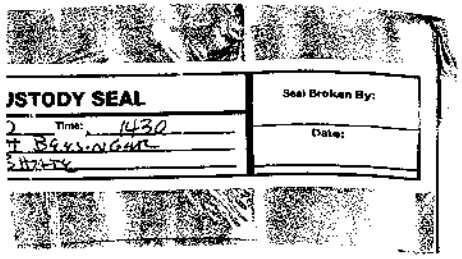
Analytical Lab: ALS 10450 Stancliff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

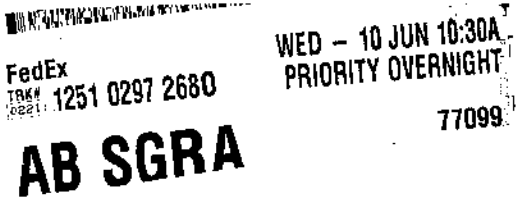
ATTN: SONIA WEST Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)
2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)
4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks
5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.
6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

Cooler - 43406
Temp 1.0°C
1225
CF0.0


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5687
Date:
Name:
Company:


JSTODY SEAL
Time: 1430
Seal Broken By:
Date:


FedEx
1251 0297 2680
WED – 10 JUN 10:30A
PRIORITY OVERNIGHT
77099
AB SGRA

June 24, 2020 Service Request No:E2000535

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

Laboratory Results for: HS20060495

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 12, 2020
For your reference, these analyses have been assigned our service request number **E2000535.**

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.:**	E2000535
Project:	HS20060495	**Date Received:**	06/12/20
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

Three samples were received for analysis at ALS Environmental in Houston on 06/12/20.

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:

EQ2000238: 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 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:**E2000535
Project: HS20060495

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000535-001	18CPTMW03SW_060920	6/9/2020	0745
E2000535-002	MW21_060920	6/9/2020	1015
E2000535-003	18CPTMW07_060920	6/9/2020	1140

Service Request Summary

Folder #: **E2000535**
Client Name: ALS Environmental - US
Project Name: HS20060495
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: 06/12/20
Internal Due Date: 6/24/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060495
EDD: No EDD Specified

3 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000535-001	18CPTMW03SW_060920	Ground Water	06/09/20 0745	**IV**
E2000535-002	MW21_060920	Ground Water	06/09/20 1015	**IV**
E2000535-003	18CPTMW07_060920	Ground Water	06/09/20 1140	**IV**

Service Request Summary

Folder #: **E2000535**
Client Name: ALS Environmental - US
Project Name: HS20060495
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
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Phone Number: 281-530-5656
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QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060495
EDD: No EDD Specified

3 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	3	Level IV due 7/1, level II 6/24

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
Florida Department of Health	E87611	6/30/2020
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 Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
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
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Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 14082

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

E2000535 5
ALS Laboratory Group
HS20060495

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:	HS20060495
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060495-01**	**18CPTMW035W_060920**	**Groundwater**	**09 Jun 2020 07:45**
	SUB_Perch-6850			24 Jun 2020
2.	**HS20060495-03**	**MW21_060920**	**Groundwater**	**09 Jun 2020 10:15**
	SUB_Perch-6850			24 Jun 2020
3.	**HS20060495-04**	**18CPTMW07_060920**	**Groundwater**	**09 Jun 2020 11:40**
	SUB_Perch-6850			24 Jun 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: _____

Received By: _____ Date/Time: 6/12/20 1500

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-HI

Thermometer ID IR24

Date/Time Received: 6/12/20 Initials: CH Date/Time Logged in: 6/12/20 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 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?
-		6/12/20	1400	CH	2.4	☒
						☐
						☐
						☐

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:

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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#: 360212 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/17/20 10:43

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000501-001	18CPTMW14_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000501-002	18CPTMW24_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000501-003	18WW25_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000501-004	18WW10_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000501-005	MW13_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000501-006	CO2_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000510-001	LH18/24-SP650_060920_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000511-001	KAFB7-WW01-060820	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000535-001	18CPTMW03SW_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000535-002	MW21_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000535-003	18CPTMW07_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000538-001	MW5_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000538-002	18CPTMW08DW_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000538-003	18CPTMW08SW_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000538-004	MW23_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000538-005	CO1_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2000538-006	MW16_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2000538-007	18CPTMW18_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
19	E2000538-008	CO3_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
20	EQ2000238-01	MB		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000238-02	LCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000238-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2000238-04	CO1_060920 MS	.01	6850/ClO4 DOD			Liquid	10mL	
24	EQ2000238-05	CO1_060920 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

EQ2000238-02 100.00µL EQ2000238-03 100.00µL EQ2000238-04 100.00µL EQ2000238-05 100.00µL

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

E2000501-001 1.00µL E2000501-002 1.00µL E2000501-003 1.00µL E2000501-004 1.00µL E2000501-005 1.00µL E2000501-006 1.00µL
E2000538-005 1.00µL EQ2000238-01 1.00µL EQ2000238-02 1.00µL EQ2000238-03 1.00µL EQ2000238-04 1.00µL EQ2000238-05 1.00µL

Preparation Information Benchsheet

Prep Run#: 360212
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/17/20 10:43

Preparation Steps

Step: Preparation
Started: 6/17/20 10:43
Finished: 6/17/20 16:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	6/ 9/20 0745
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW03SW_060920	**Units:**	µg/L
Lab Code:	E2000535-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.380**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 12:22	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	6/ 9/20 1015
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW21_060920	**Units:**	µg/L
Lab Code:	E2000535-002	**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	**33200**		100	50.0	25.0	1000	6/17/20	6/22/20 13:37	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	6/ 9/20 1140
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW07_060920	**Units:**	µg/L
Lab Code:	E2000535-003	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.410**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 13:45	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	E2000538-005	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.887**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:58	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000238-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:18	360212	684542	

Accuracy & Precision

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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
Project: HS20060495
Sample Matrix: Ground Water

Service Request: E2000535
Date Analyzed: 6/22/20

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

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 360212

	Lab Control Sample EQ2000238-02			Duplicate Lab Control Sample EQ2000238-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.107	0.100	107	0.114	0.100	114	84 - 119	6	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:**	E2000535
Project:	HS20060495	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000238-02	**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	**0.107**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:26	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000238-03	**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	**0.114**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:34	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	6/22/20

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:	E2000538-005	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS **Matrix Spike** EQ2000238-04					Batch QCDMS **Duplicate Matrix Spike** EQ2000238-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.887	0.983	0.100	96	#	0.982	0.100	95	#	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:**	E2000535
Project:	HS20060495	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000238-04	**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	**0.983**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:42	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000238-05	**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	**0.982**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:50	360212	684542	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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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

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

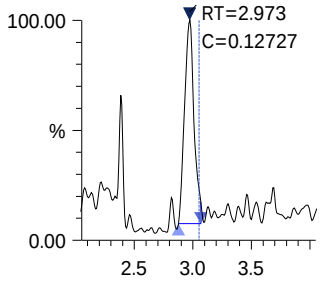
PERCHLORATE1

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

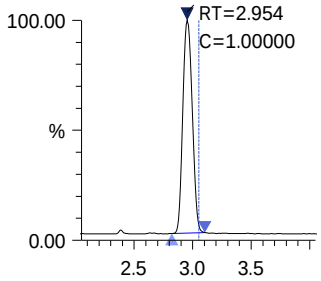
Perchlorate

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

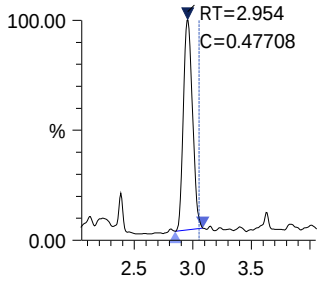
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

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

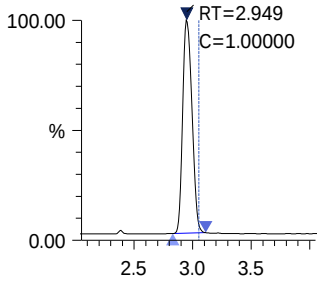
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



ALS Group Houston

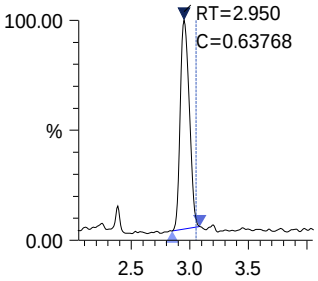
PERCHLORATE3

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

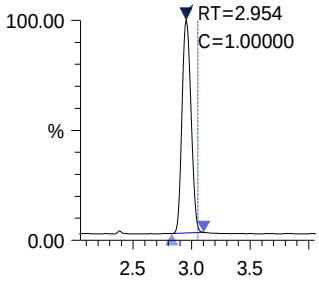
Perchlorate

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

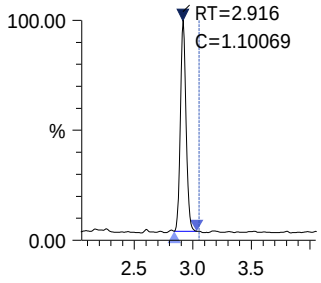
PERCHLORATE4

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

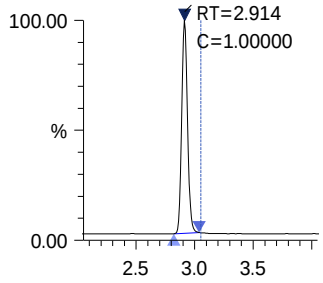
Perchlorate

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

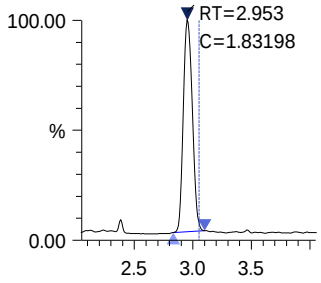
PERCHLORATE5

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

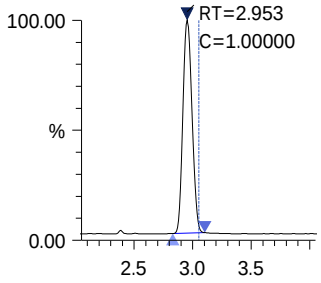
Perchlorate

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

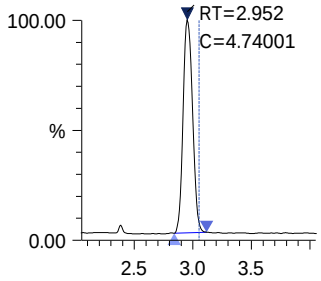
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE6	6/2/2020 4:21:16 PM	85178	4.74001	20200602_014	2.952	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	PERCHLORATE6	6/2/2020 4:21:16 PM	140500	1.00000	20200602_014	2.948	25.0000	1.0000	9

Perchlorate

Conc 4.74001

Area 85178

Q 99.00>83.00 (-) 1.50e4

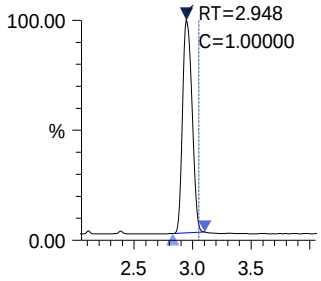


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 140500

ISTD 107.00>89.00 (-) 2.51e4



ALS Group Houston

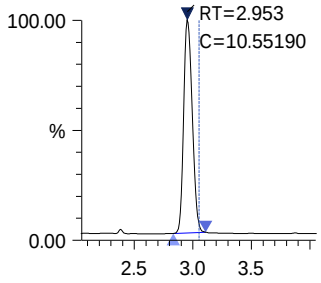
PERCHLORATE7

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

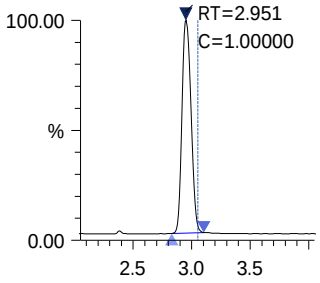
Perchlorate

Conc 10.55190
Area 173998
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

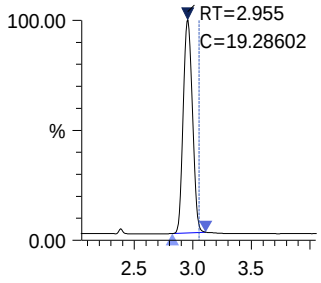
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	6/2/2020 4:37:02 PM	324944	19.28602	20200602_016	2.955	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	6/2/2020 4:37:02 PM	131734	1.00000	20200602_016	2.953	25.0000	1.0000	11

Perchlorate

Conc 19.28602

Area 324944

Q 99.00>83.00 (-) 5.85e4

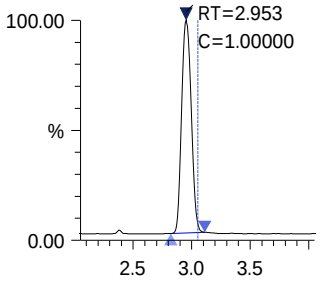


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 131734

ISTD 107.00>89.00 (-) 2.34e4



ALS Group Houston

PERCHLORATE9

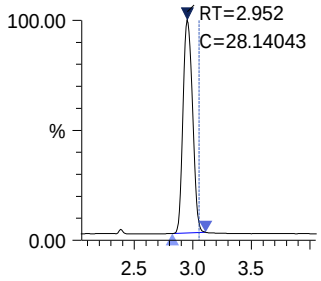
Date acquired: 6/2/2020 4:44:57 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_017.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

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

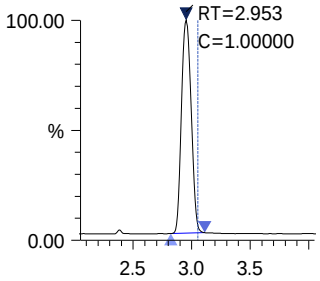
Q 99.00>83.00 (-) 8.16e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 130327

ISTD 107.00>89.00 (-) 2.28e4



ALS Group Houston

PERCHLORATE10

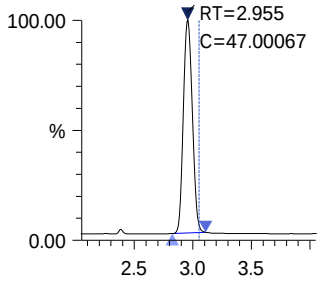
Date acquired: 6/2/2020 4:52:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

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

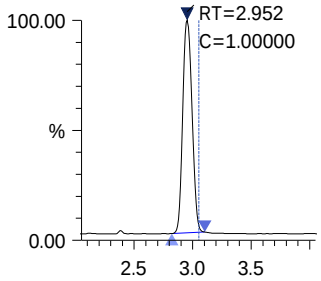
Q 99.00>83.00 (-) 1.36e5



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

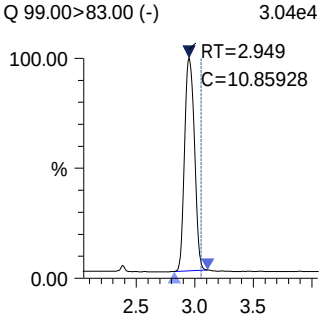
PERCHLORATEICV

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

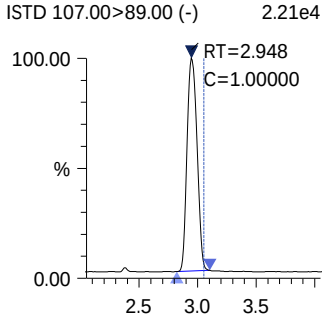
Perchlorate

Conc 10.85928
Area 180334



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 129839



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

20200622

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
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	null		20200622_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_003	Perchlorate6850b.lcm	1x	☒	
	LODV		20200622_004	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_005	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000238-01		20200622_007	Perchlorate6850b.lcm	1x	☒	
	ICS		20200622_006	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-02		20200622_008	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-03		20200622_009	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-04		20200622_010	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-05		20200622_011	Perchlorate6850b.lcm	1x	☒	
	E2000538-005		20200622_012	Perchlorate6850b.lcm	1x	☒	
	E2000511-001		20200622_013	Perchlorate6850b.lcm	1x	☒	
	E2000510-001		20200622_014	Perchlorate6850b.lcm	1x	☒	
	E2000535-001		20200622_015	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_016	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000511-001		20200622_017	Perchlorate6850b.lcm	1x	☒	
	E2000511-001X2		20200622_018	Perchlorate6850b.lcm	2x	☒	
	E2000535-002		20200622_019	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_020	Perchlorate6850b.lcm	1x	☒	
	E2000511-001X5		20200622_021	Perchlorate6850b.lcm	5x	☒	
	E2000535-002X1000		20200622_022	Perchlorate6850b.lcm	1000x	☒	
	E2000535-003		20200622_023	Perchlorate6850b.lcm	1x	☒	
	E2000538-001		20200622_024	Perchlorate6850b.lcm	1x	☒	
	E2000538-002		20200622_025	Perchlorate6850b.lcm	1x	☒	
	E2000538-003		20200622_026	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_027	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000538-001		20200622_028	Perchlorate6850b.lcm	1000x	☒	
	E2000538-002		20200622_029	Perchlorate6850b.lcm	100x	☒	
	E2000538-003		20200622_030	Perchlorate6850b.lcm	1000x	☒	
	E2000538-004		20200622_031	Perchlorate6850b.lcm	2000x	☒	
	E2000538-006X50		20200622_032	Perchlorate6850b.lcm	50x	☒	
	E2000538-007		20200622_033	Perchlorate6850b.lcm	1x	☒	
	E2000538-008		20200622_034	Perchlorate6850b.lcm	1x	☒	
	EQ2000239-01		20200622_035	Perchlorate6850b.lcm	1x	☒	
	EQ2000239-02		20200622_036	Perchlorate6850b.lcm	1x	☒	
	E2000538-008X5		20200622_037	Perchlorate6850b.lcm	5x	☒	
	PERCHLORATE7		20200622_038	Perchlorate6850b.lcm	1x	☒	3100807-04
	IB		20200622_039	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_040	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_041	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_042	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060495
Service Request: E2000535
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_005
Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	0.1279	0.1348	5.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060495
Service Request: E2000535
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_016
Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279	0.1377	7.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060495

Service Request: E2000535
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_027

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1279	0.1372	7.3	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060495
Service Request: E2000535
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_038
Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279	0.1381	8.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000535
Project:	HS20060495	**Date Analyzed:**	6/22/20 11:03

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_005	**Lab Code:**	EQ2000254-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-01	159,982	3.02
Method Blank	EQ2000238-01	178,948	3.01
Lab Control Sample	EQ2000238-02	197,036	3.01
Duplicate Lab Control Sample	EQ2000238-03	200,634	3.01
Batch QCMS	EQ2000238-04	174,832	2.98
Batch QCDMS	EQ2000238-05	173,812	2.98
Batch QC	E2000538-005	189,616	2.98
18CPTMW03SW_060920	E2000535-001	186,708	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:**	E2000535
Project:	HS20060495	**Date Analyzed:**	6/22/20 12:29

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_016	**Lab Code:**	EQ2000254-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-02	178,331	3.01
MW21_060920	E2000535-002	151,772	2.96
18CPTMW07_060920	E2000535-003	199,436	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:**	E2000535
Project:	HS20060495	**Date Analyzed:**	6/22/20 14:45

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_027	**Lab Code:**	EQ2000254-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-03	184,802	2.96

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:**	E2000535
Project:	HS20060495	**Date Analyzed:**	6/22/20 16:13

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_038	**Lab Code:**	EQ2000254-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-04	199,949	3.01

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

ALS Group Houston

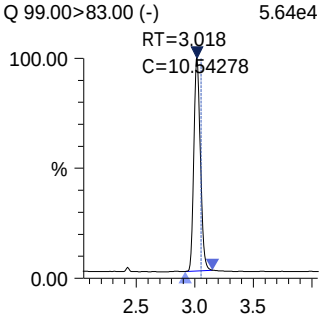
PERCHLORATE7

Date acquired: 6/22/2020 11:03:11 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_005.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	6/22/2020 11:03:11 AM	215723	10.54278	20200622_005	3.018	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/22/2020 11:03:11 AM	159982	1.00000	20200622_005	3.015	25.0000	1.0000	4

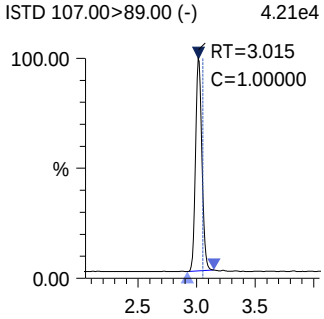
Perchlorate

Conc 10.54278
Area 215723



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 159982



ALS Group Houston

EQ2000238-01

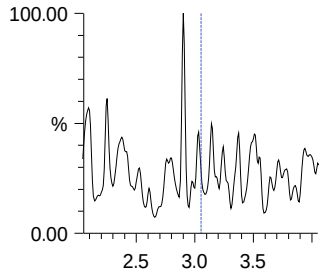
Date acquired: 6/22/2020 11:18:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000238-01	6/22/2020 11:18:59 AM	----	----	20200622_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000238-01	6/22/2020 11:18:59 AM	178948	1.00000	20200622_007	3.011	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

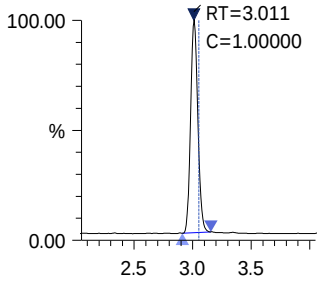
Q 99.00>83.00 (-) 4.46e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178948

ISTD 107.00>89.00 (-) 4.15e4



ALS Group Houston

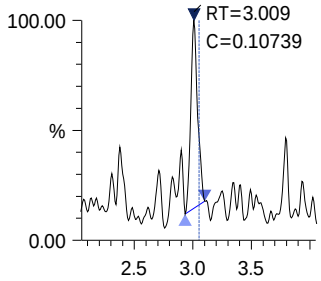
EQ2000238-02

Date acquired: 6/22/2020 11:26:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_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	EQ2000238-02	6/22/2020 11:26:53 AM	2706	0.10739	20200622_008	3.009	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000238-02	6/22/2020 11:26:53 AM	197036	1.00000	20200622_008	3.007	25.0000	1.0000	6

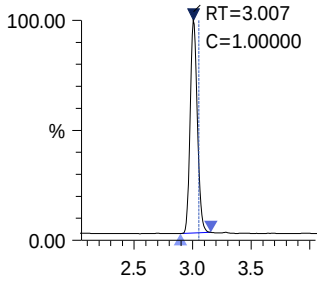
Perchlorate

Conc 0.10739
Area 2706
Q 99.00>83.00 (-) 7.58e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 197036
ISTD 107.00>89.00 (-) 4.60e4



ALS Group Houston

EQ2000238-03

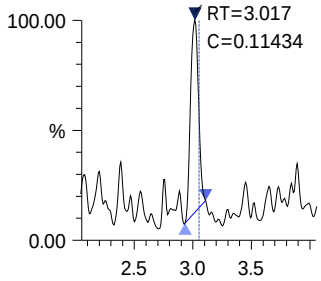
Date acquired: 6/22/2020 11:34:45 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_009.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000238-03	6/22/2020 11:34:45 AM	2934	0.11434	20200622_009	3.017	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000238-03	6/22/2020 11:34:45 AM	200634	1.00000	20200622_009	3.009	25.0000	1.0000	7

Perchlorate

Conc 0.11434
Area 2934

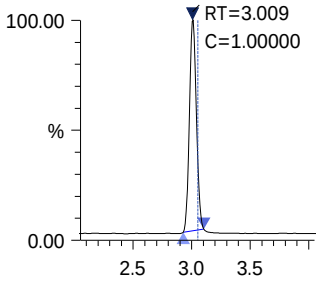
Q 99.00>83.00 (-) 6.89e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 200634

ISTD 107.00>89.00 (-) 4.88e4



ALS Group Houston

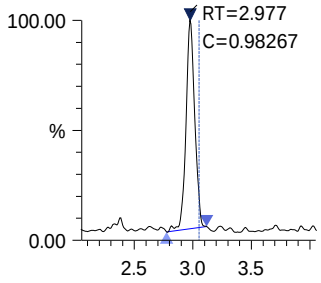
EQ2000238-04

Date acquired: 6/22/2020 11:42:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_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	EQ2000238-04	6/22/2020 11:42:37 AM	21974	0.98267	20200622_010	2.977	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	EQ2000238-04	6/22/2020 11:42:37 AM	174832	1.00000	20200622_010	2.975	25.0000	1.0000	8

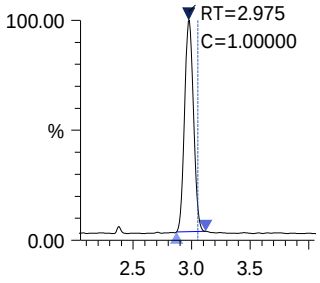
Perchlorate

Conc 0.98267
Area 21974
Q 99.00>83.00 (-) 4.31e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 174832
ISTD 107.00>89.00 (-) 3.35e4



ALS Group Houston

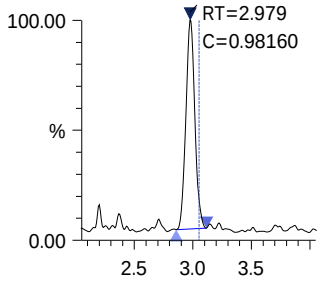
EQ2000238-05

Date acquired: 6/22/2020 11:50:29 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_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	EQ2000238-05	6/22/2020 11:50:29 AM	21822	0.98160	20200622_011	2.979	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	EQ2000238-05	6/22/2020 11:50:29 AM	173812	1.00000	20200622_011	2.977	25.0000	1.0000	9

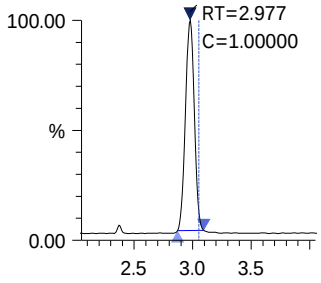
Perchlorate

Conc 0.98160
Area 21822
Q 99.00>83.00 (-) 4.14e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173812
ISTD 107.00>89.00 (-) 3.37e4



ALS Group Houston

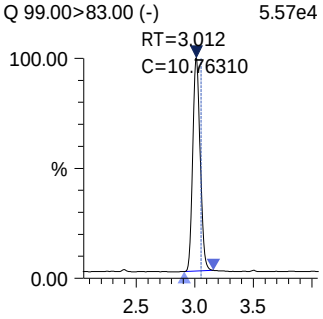
PERCHLORATE7

Date acquired: 6/22/2020 12:29:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_016.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	6/22/2020 12:29:56 PM	245490	10.76310	20200622_016	3.012	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/22/2020 12:29:56 PM	178331	1.00000	20200622_016	3.010	25.0000	1.0000	4

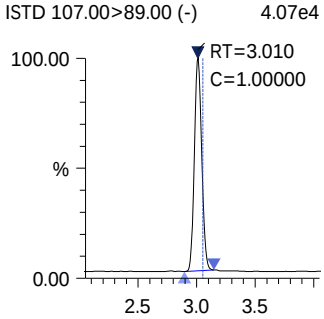
Perchlorate

Conc 10.76310
Area 245490



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178331



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

June 29, 2020

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

Work Order: **HS20060498**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 9 sample(s) on Jun 10, 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060498

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060498-01	MW5_060920	Groundwater		09-Jun-2020 07:05	10-Jun-2020 09:40	☐
HS20060498-02	18CPTMW08DW_060920	Groundwater		09-Jun-2020 07:55	10-Jun-2020 09:40	☐
HS20060498-03	18CPTMW08SW_060920	Groundwater		09-Jun-2020 08:40	10-Jun-2020 09:40	☐
HS20060498-04	MW23_060920	Groundwater		09-Jun-2020 09:30	10-Jun-2020 09:40	☐
HS20060498-05	CO1_060920	Groundwater		09-Jun-2020 10:20	10-Jun-2020 09:40	☐
HS20060498-06	MW16_060920	Groundwater		09-Jun-2020 11:20	10-Jun-2020 09:40	☐
HS20060498-07	18CPTMW18_060920	Groundwater		09-Jun-2020 12:15	10-Jun-2020 09:40	☐
HS20060498-08	CO3_060920	Groundwater		09-Jun-2020 13:15	10-Jun-2020 09:40	☐
HS20060498-09	Trip Blank	Water		09-Jun-2020 00:00	10-Jun-2020 09:40	☐

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060498

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: 154443

Sample ID: MW16_060920 (HS20060498-06)

- High area counts for Acenaphthene-d10 and Chrysene-d12, they are not associated with target compound.

GCMS Volatiles by Method SW8260

Batch ID: R363560

Sample ID: CCV

- 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, Hexachlorobutadiene exceeded recovery limits for closing CCV.

Sample ID: VLCSW-200618

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

Sample ID: CO1_060920 (HS20060498-05MS)

- 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 recovery of the MS may be due to sample matrix interference.

Sample ID: CO1_060920 (HS20060498-05MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

- The RPD between the MS and MSD was outside of the control limit.

Metals by Method SW7470

Batch ID: 154667

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

Metals by Method SW6020

Batch ID: 154643

Sample ID: CO3_060920 (HS20060498-08MS)

- 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, Calcium, Iron, Magnesium, Manganese, Sodium

Sample ID: CO3_060920 (HS20060498-08PDS)

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW5_060920
Collection Date: 09-Jun-2020 07:05

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-01
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	18-Jun-2020 14:56
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,1-Dichloroethane	**2.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 14:56
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 14:56
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	18-Jun-2020 14:56
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	18-Jun-2020 14:56
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 14:56
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	18-Jun-2020 14:56
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW5_060920
Collection Date: 09-Jun-2020 07:05

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-01
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	18-Jun-2020 14:56
cis-1,2-Dichloroethene	**9.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 14:56
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	18-Jun-2020 14:56
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 14:56
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 14:56
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:56
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:56
Trichloroethene	**38**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 14:56
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:56
Vinyl chloride	**2.6**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 14:56
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*1*	*18-Jun-2020 14:56*
Surr: 4-Bromofluorobenzene	*99.2*			**0**	*85-114*	*%REC*	*1*	*18-Jun-2020 14:56*
Surr: Dibromofluoromethane	*89.3*			**0**	*80-119*	*%REC*	*1*	*18-Jun-2020 14:56*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*18-Jun-2020 14:56*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.65**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 13:50
Surr: 2-Fluorobiphenyl	*124*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 13:50*
Surr: 4-Terphenyl-d14	*119*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 13:50*
Surr: Nitrobenzene-d5	*44.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 13:50*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW08DW_060920
Collection Date: 09-Jun-2020 07:55

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.28**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 14:10
Surr: 2-Fluorobiphenyl	*92.9*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 14:10*
Surr: 4-Terphenyl-d14	*88.3*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 14:10*
Surr: Nitrobenzene-d5	*44.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 14:10*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW08SW_060920
Collection Date: 09-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-03
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	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,1-Dichloroethane	**2.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:32
1,1-Dichloroethene	**0.63**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:32
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,3-Dichlorobenzene	**0.51**	J	**0.40**	**1.0**	**1.0**	**UG/L**	1	18-Jun-2020 16:32
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:32
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 16:32
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	18-Jun-2020 16:32
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:32
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	18-Jun-2020 16:32
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 16:32
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	18-Jun-2020 16:32
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW08SW_060920
Collection Date: 09-Jun-2020 08:40

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-03
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	18-Jun-2020 16:32
cis-1,2-Dichloroethene	**9.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:32
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	18-Jun-2020 16:32
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 16:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 16:32
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:32
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:32
Trichloroethene	**33**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:32
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:32
Vinyl chloride	**2.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:32
Surr: 1,2-Dichloroethane-d4	*83.9*			**0**	*81-118*	*%REC*	*1*	*18-Jun-2020 16:32*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*18-Jun-2020 16:32*
Surr: Dibromofluoromethane	*88.5*			**0**	*80-119*	*%REC*	*1*	*18-Jun-2020 16:32*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*18-Jun-2020 16:32*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.68**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 14:29
Surr: 2-Fluorobiphenyl	*81.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 14:29*
Surr: 4-Terphenyl-d14	*89.2*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 14:29*
Surr: Nitrobenzene-d5	*63.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 14:29*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW23_060920
Collection Date: 09-Jun-2020 09:30

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-04
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	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,1,1-Trichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,1-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,2-Dibromo-3-chloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
1,2-Dibromoethane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,2-Dichloroethane	**60**		**1.0**	**2.5**	**5.0**	**UG/L**	5	18-Jun-2020 17:20
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
2,2-Dichloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
2-Butanone	5.0	U	2.5	5.0	10	UG/L	5	18-Jun-2020 17:20
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
2-Hexanone	10	U	5.0	10	10	UG/L	5	18-Jun-2020 17:20
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
4-Methyl-2-pentanone	10	U	3.5	10	10	UG/L	5	18-Jun-2020 17:20
Acetone	5.0	U	2.0	5.0	10	UG/L	5	18-Jun-2020 17:20
Benzene	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
Bromobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Bromochloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
Bromodichloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
Bromoform	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Bromomethane	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Carbon disulfide	5.0	U	3.0	5.0	10	UG/L	5	18-Jun-2020 17:20
Carbon tetrachloride	**4.2**	J	**2.5**	**5.0**	**5.0**	**UG/L**	5	18-Jun-2020 17:20
Chlorobenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Chloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Chloroform	**6.9**		**1.0**	**2.5**	**5.0**	**UG/L**	5	18-Jun-2020 17:20

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW23_060920
Collection Date: 09-Jun-2020 09:30

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
cis-1,2-Dichloroethene	**12**		**1.0**	**2.5**	**5.0**	**UG/L**	5	18-Jun-2020 17:20
cis-1,3-Dichloropropene	2.5	U	0.50	2.5	5.0	UG/L	5	18-Jun-2020 17:20
Dibromochloromethane	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Dibromomethane	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Ethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Isopropylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
m,p-Xylene	5.0	U	2.5	5.0	10	UG/L	5	18-Jun-2020 17:20
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	18-Jun-2020 17:20
n-Butylbenzene	5.0	U	2.0	5.0	5.0	UG/L	5	18-Jun-2020 17:20
n-Propylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Naphthalene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
o-Xylene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Styrene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Tetrachloroethene	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Toluene	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
trans-1,2-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
trans-1,3-Dichloropropene	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
Trichloroethene	**2,300**		**10**	**25**	**50**	**UG/L**	50	18-Jun-2020 18:32
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	18-Jun-2020 17:20
Vinyl chloride	2.5	U	1.0	2.5	5.0	UG/L	5	18-Jun-2020 17:20
Surr: 1,2-Dichloroethane-d4	*84.4*			**0**	*81-118*	*%REC*	*5*	*18-Jun-2020 17:20*
Surr: 1,2-Dichloroethane-d4	*84.1*			**0**	*81-118*	*%REC*	*50*	*18-Jun-2020 18:32*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*5*	*18-Jun-2020 17:20*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*50*	*18-Jun-2020 18:32*
Surr: Dibromofluoromethane	*87.7*			**0**	*80-119*	*%REC*	*5*	*18-Jun-2020 17:20*
Surr: Dibromofluoromethane	*88.6*			**0**	*80-119*	*%REC*	*50*	*18-Jun-2020 18:32*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*18-Jun-2020 17:20*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*50*	*18-Jun-2020 18:32*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO1_060920
Collection Date: 09-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 15:20
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	18-Jun-2020 15:20
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	18-Jun-2020 15:20
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 15:20
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	18-Jun-2020 15:20
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO1_060920
Collection Date: 09-Jun-2020 10:20

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-05
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	18-Jun-2020 15:20
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 15:20
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 15:20
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:20
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:20
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:20
Surr: 1,2-Dichloroethane-d4	*82.3*			**0**	*81-118*	*%REC*	*1*	*18-Jun-2020 15:20*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*18-Jun-2020 15:20*
Surr: Dibromofluoromethane	*88.9*			**0**	*80-119*	*%REC*	*1*	*18-Jun-2020 15:20*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*18-Jun-2020 15:20*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW16_060920
Collection Date: 09-Jun-2020 11:20

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-06
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	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,1-Dichloroethane	**2.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:56
1,1-Dichloroethene	**13**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:56
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,2-Dichloroethane	**89**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:56
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 16:56
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	18-Jun-2020 16:56
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	18-Jun-2020 16:56
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 16:56
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	18-Jun-2020 16:56
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW16_060920
Collection Date: 09-Jun-2020 11:20

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-06
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	18-Jun-2020 16:56
cis-1,2-Dichloroethene	**45**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:56
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	18-Jun-2020 16:56
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 16:56
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 16:56
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:56
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Tetrachloroethene	**1.4**		**0.30**	**1.0**	**1.0**	**UG/L**	1	18-Jun-2020 16:56
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
trans-1,2-Dichloroethene	**0.98**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:56
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:56
Trichloroethene	**1,200**		**5.0**	**12**	**25**	**UG/L**	25	18-Jun-2020 18:56
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:56
Vinyl chloride	**2.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	18-Jun-2020 16:56
Surr: 1,2-Dichloroethane-d4	*82.6*			**0**	*81-118*	*%REC*	*25*	*18-Jun-2020 18:56*
Surr: 1,2-Dichloroethane-d4	*84.0*			**0**	*81-118*	*%REC*	*1*	*18-Jun-2020 16:56*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*18-Jun-2020 16:56*
Surr: 4-Bromofluorobenzene	*98.4*			**0**	*85-114*	*%REC*	*25*	*18-Jun-2020 18:56*
Surr: Dibromofluoromethane	*88.0*			**0**	*80-119*	*%REC*	*25*	*18-Jun-2020 18:56*
Surr: Dibromofluoromethane	*87.7*			**0**	*80-119*	*%REC*	*1*	*18-Jun-2020 16:56*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*25*	*18-Jun-2020 18:56*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*18-Jun-2020 16:56*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**8.1**		**0.20**	**0.20**	**0.20**	**ug/L**	20	29-Jun-2020 13:13
Surr: 2-Fluorobiphenyl	*69.6*			**0**	*40-140*	*%REC*	*20*	*29-Jun-2020 13:13*
Surr: 4-Terphenyl-d14	*90.2*			**0**	*40-140*	*%REC*	*20*	*29-Jun-2020 13:13*
Surr: Nitrobenzene-d5	*87.1*			**0**	*40-140*	*%REC*	*20*	*29-Jun-2020 13:13*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW16_060920
Collection Date: 09-Jun-2020 11:20

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW18_060920
Collection Date: 09-Jun-2020 12:15

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-07
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	18-Jun-2020 15:44
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 15:44
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	18-Jun-2020 15:44
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	18-Jun-2020 15:44
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 15:44
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	18-Jun-2020 15:44
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW18_060920
Collection Date: 09-Jun-2020 12:15

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-07
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	18-Jun-2020 15:44
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 15:44
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 15:44
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 15:44
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 15:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 15:44
Surr: 1,2-Dichloroethane-d4	*83.5*			**0**	*81-118*	*%REC*	*1*	*18-Jun-2020 15:44*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*18-Jun-2020 15:44*
Surr: Dibromofluoromethane	*88.8*			**0**	*80-119*	*%REC*	*1*	*18-Jun-2020 15:44*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*18-Jun-2020 15:44*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.22**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 15:08
Surr: 2-Fluorobiphenyl	*74.3*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 15:08*
Surr: 4-Terphenyl-d14	*56.4*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 15:08*
Surr: Nitrobenzene-d5	*63.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 15:08*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW18_060920
Collection Date: 09-Jun-2020 12:15

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0185**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 14:43
Antimony	**0.000671**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:43
Arsenic	**0.000889**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:43
Barium	**0.669**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:43
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:43
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:43
Calcium	**261**		**0.680**	**1.00**	**10.0**	**mg/L**	20	23-Jun-2020 16:12
Chromium	**0.00191**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:43
Cobalt	**0.0131**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:43
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 14:43
Iron	**0.729**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:43
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:43
Magnesium	**187**		**0.200**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 16:12
Manganese	**2.03**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	23-Jun-2020 16:12
Nickel	**0.0131**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 14:43
Potassium	**3.07**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:43
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 14:43
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 14:43
Sodium	**696**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 16:12
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:43
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:43
Zinc	**0.0149**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:43
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 15:46
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO3_060920
Collection Date: 09-Jun-2020 13:15

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-08
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	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 16:08
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	18-Jun-2020 16:08
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	18-Jun-2020 16:08
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 16:08
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	18-Jun-2020 16:08
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO3_060920
Collection Date: 09-Jun-2020 13:15

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-08
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	18-Jun-2020 16:08
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 16:08
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 16:08
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 16:08
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 16:08
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 16:08
Surr: 1,2-Dichloroethane-d4	*84.5*			**0**	*81-118*	*%REC*	*1*	*18-Jun-2020 16:08*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*18-Jun-2020 16:08*
Surr: Dibromofluoromethane	*89.3*			**0**	*80-119*	*%REC*	*1*	*18-Jun-2020 16:08*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*18-Jun-2020 16:08*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 13-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.29**		**0.010**	**0.010**	**0.010**	**ug/L**	1	29-Jun-2020 13:33
Surr: 2-Fluorobiphenyl	*79.9*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 13:33*
Surr: 4-Terphenyl-d14	*99.1*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 13:33*
Surr: Nitrobenzene-d5	*79.4*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 13:33*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO3_060920
Collection Date: 09-Jun-2020 13:15

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0149**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 13:20
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 13:20
Arsenic	**0.00170**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 13:20
Barium	**1.25**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 13:20
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 13:20
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 13:20
Calcium	**44.3**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 13:20
Chromium	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 13:20
Cobalt	**0.000124**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 13:20
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 13:20
Iron	**68.4**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 13:20
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 13:20
Magnesium	**24.2**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 13:20
Manganese	**1.22**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 13:20
Nickel	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 13:20
Potassium	**3.21**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 13:20
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 13:20
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 13:20
Sodium	**144**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 13:20
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 13:20
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 13:20
Zinc	**0.00627**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 13:20
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 15:51
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	24-Jun-2020 12:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 09-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 14:32
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	18-Jun-2020 14:32
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	18-Jun-2020 14:32
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 14:32
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	18-Jun-2020 14:32
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 09-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060498
Lab ID:HS20060498-09
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	18-Jun-2020 14:32
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	18-Jun-2020 14:32
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	18-Jun-2020 14:32
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	18-Jun-2020 14:32
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	18-Jun-2020 14:32
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	18-Jun-2020 14:32
Surr: 1,2-Dichloroethane-d4	*82.6*			**0**	*81-118*	*%REC*	*1*	*18-Jun-2020 14:32*
Surr: 4-Bromofluorobenzene	*98.6*			**0**	*85-114*	*%REC*	*1*	*18-Jun-2020 14:32*
Surr: Dibromofluoromethane	*87.6*			**0**	*80-119*	*%REC*	*1*	*18-Jun-2020 14:32*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*18-Jun-2020 14:32*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

Batch ID: 154443 **Start Date:** 13 Jun 2020 10:00 **End Date:** 13 Jun 2020 15:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060498-01	1	1000 (mL)	1 (mL)	0.001
HS20060498-02	1	1000 (mL)	1 (mL)	0.001
HS20060498-03	1	1000 (mL)	1 (mL)	0.001
HS20060498-06	1	1000 (mL)	1 (mL)	0.001
HS20060498-07	1	1000 (mL)	1 (mL)	0.001
HS20060498-08	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154643 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060498-07		10 (mL)	10 (mL)	1
HS20060498-08		10 (mL)	10 (mL)	1

Batch ID: 154667 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060498-07		10 (mL)	10 (mL)	1
HS20060498-08		10 (mL)	10 (mL)	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154443 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060498-01	MW5_060920	09 Jun 2020 07:05		13 Jun 2020 12:44	27 Jun 2020 13:50	10
HS20060498-02	18CPTMW08DW_060920	09 Jun 2020 07:55		13 Jun 2020 12:44	27 Jun 2020 14:10	10
HS20060498-03	18CPTMW08SW_060920	09 Jun 2020 08:40		13 Jun 2020 12:44	27 Jun 2020 14:29	10
HS20060498-06	MW16_060920	09 Jun 2020 11:20		13 Jun 2020 12:44	29 Jun 2020 13:13	20
HS20060498-07	18CPTMW18_060920	09 Jun 2020 12:15		13 Jun 2020 12:44	27 Jun 2020 15:08	10
HS20060498-08	CO3_060920	09 Jun 2020 13:15		13 Jun 2020 12:44	29 Jun 2020 13:33	1
Batch ID: 154643 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060498-07	18CPTMW18_060920	09 Jun 2020 12:15		19 Jun 2020 14:00	23 Jun 2020 16:12	20
HS20060498-07	18CPTMW18_060920	09 Jun 2020 12:15		19 Jun 2020 14:00	23 Jun 2020 14:43	1
HS20060498-08	CO3_060920	09 Jun 2020 13:15		19 Jun 2020 14:00	23 Jun 2020 13:20	1
Batch ID: 154667 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060498-07	18CPTMW18_060920	09 Jun 2020 12:15		19 Jun 2020 10:00	19 Jun 2020 15:46	1
HS20060498-08	CO3_060920	09 Jun 2020 13:15		19 Jun 2020 10:00	19 Jun 2020 15:51	1
Batch ID: R363560 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060498-09	Trip Blank	09 Jun 2020 00:00			18 Jun 2020 14:32	1
Batch ID: R363560 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060498-01	MW5_060920	09 Jun 2020 07:05			18 Jun 2020 14:56	1
HS20060498-03	18CPTMW08SW_060920	09 Jun 2020 08:40			18 Jun 2020 16:32	1
HS20060498-04	MW23_060920	09 Jun 2020 09:30			18 Jun 2020 18:32	50
HS20060498-04	MW23_060920	09 Jun 2020 09:30			18 Jun 2020 17:20	5
HS20060498-05	CO1_060920	09 Jun 2020 10:20			18 Jun 2020 15:20	1
HS20060498-06	MW16_060920	09 Jun 2020 11:20			18 Jun 2020 18:56	25
HS20060498-06	MW16_060920	09 Jun 2020 11:20			18 Jun 2020 16:56	1
HS20060498-07	18CPTMW18_060920	09 Jun 2020 12:15			18 Jun 2020 15:44	1
HS20060498-08	CO3_060920	09 Jun 2020 13:15			18 Jun 2020 16:08	1
Batch ID: R363823 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060498-01	MW5_060920	09 Jun 2020 07:05			24 Jun 2020 12:04	1
HS20060498-02	18CPTMW08DW_060920	09 Jun 2020 07:55			24 Jun 2020 12:04	1
HS20060498-03	18CPTMW08SW_060920	09 Jun 2020 08:40			24 Jun 2020 12:04	1
HS20060498-04	MW23_060920	09 Jun 2020 09:30			24 Jun 2020 12:04	1
HS20060498-05	CO1_060920	09 Jun 2020 10:20			24 Jun 2020 12:04	1
HS20060498-06	MW16_060920	09 Jun 2020 11:20			24 Jun 2020 12:04	1
HS20060498-07	18CPTMW18_060920	09 Jun 2020 12:15			24 Jun 2020 12:04	1
HS20060498-08	CO3_060920	09 Jun 2020 13:15			24 Jun 2020 12:04	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:17**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631768** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.01444	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:11**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631766** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1015	0.0100	0.1	0	102	84 - 117				
Antimony	0.04728	0.00500	0.05	0	94.6	85 - 117				
Arsenic	0.04981	0.00500	0.05	0	99.6	84 - 116				
Barium	0.04994	0.00500	0.05	0	99.9	86 - 114				
Beryllium	0.04585	0.00200	0.05	0	91.7	83 - 121				
Cadmium	0.05017	0.00200	0.05	0	100	87 - 115				
Calcium	4.661	0.500	5	0	93.2	87 - 118				
Chromium	0.04826	0.00500	0.05	0	96.5	85 - 116				
Cobalt	0.04736	0.00500	0.05	0	94.7	86 - 115				
Copper	0.04996	0.00500	0.05	0	99.9	85 - 118				
Iron	4.755	0.200	5	0	95.1	87 - 118				
Lead	0.04742	0.00500	0.05	0	94.8	88 - 115				
Magnesium	4.798	0.200	5	0	96.0	83 - 118				
Manganese	0.04969	0.00500	0.05	0	99.4	87 - 115				
Nickel	0.04892	0.00500	0.05	0	97.8	85 - 117				
Potassium	4.943	0.200	5	0	98.9	87 - 115				
Selenium	0.05066	0.00500	0.05	0	101	80 - 120				
Silver	0.05015	0.00500	0.05	0	100	85 - 116				
Sodium	4.799	0.200	5	0	96.0	85 - 117				
Thallium	0.04521	0.00200	0.05	0	90.4	82 - 116				
Vanadium	0.04764	0.00500	0.05	0	95.3	86 - 115				
Zinc	0.05144	0.00500	0.05	0	103	83 - 119				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:25**
Client ID: **CO3_060920** Run ID: **ICPMS05_363745** SeqNo: **5631771** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1005	0.0100	0.1	0.01494	85.6	84 - 117				
Antimony	0.04623	0.00500	0.05	0.000146	92.2	85 - 117				
Arsenic	0.04858	0.00500	0.05	0.001705	93.7	84 - 116				
Barium	1.182	0.00500	0.05	1.246	-128	86 - 114				SO
Beryllium	0.04288	0.00200	0.05	0.000021	85.7	83 - 121				
Cadmium	0.04562	0.00200	0.05	0.000129	91.0	87 - 115				
Calcium	45.9	0.500	5	44.32	31.8	87 - 118				SO
Chromium	0.04607	0.00500	0.05	0.000391	91.4	85 - 116				
Cobalt	0.04474	0.00500	0.05	0.000124	89.2	86 - 115				
Copper	0.04601	0.00500	0.05	0.000742	90.5	85 - 118				
Iron	68.61	0.200	5	68.38	4.67	87 - 118				SO
Lead	0.04545	0.00500	0.05	0.000052	90.8	88 - 115				
Magnesium	27.58	0.200	5	24.18	67.9	83 - 118				SO
Manganese	1.197	0.00500	0.05	1.223	-51.8	87 - 115				SO
Nickel	0.04623	0.00500	0.05	0.000426	91.6	85 - 117				
Selenium	0.04772	0.00500	0.05	-0.00002	95.5	80 - 120				
Silver	0.04538	0.00500	0.05	0.000008	90.7	85 - 116				
Sodium	142.4	0.200	5	143.5	-22.6	85 - 117				SO
Thallium	0.0425	0.00200	0.05	-0.000005	85.0	82 - 116				
Vanadium	0.04535	0.00500	0.05	-0.001238	93.2	86 - 115				
Zinc	0.05116	0.00500	0.05	0.006271	89.8	83 - 119				

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 14:49**
Client ID: **CO3_060920** Run ID: **ICPMS05_363745** SeqNo: **5631885** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Potassium	7.851	0.200	5	3.206	92.9	87 - 115				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060498-08MSD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:27**
Client ID: **CO3_060920** Run ID: **ICPMS05_363745** SeqNo: **5631772** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1026	0.0100	0.1	0.01494	87.6	84 - 117	0.1005	2	20	
Antimony	0.04773	0.00500	0.05	0.000146	95.2	85 - 117	0.04623	3.2	20	
Arsenic	0.05012	0.00500	0.05	0.001705	96.8	84 - 116	0.04858	3.13	20	
Barium	1.21	0.00500	0.05	1.246	-70.5	86 - 114	1.182	2.4	20	SO
Beryllium	0.04311	0.00200	0.05	0.000021	86.2	83 - 121	0.04288	0.551	20	
Cadmium	0.04831	0.00200	0.05	0.000129	96.4	87 - 115	0.04562	5.74	20	
Calcium	47.19	0.500	5	44.32	57.5	87 - 118	45.9	2.76	20	SO
Chromium	0.04751	0.00500	0.05	0.000391	94.2	85 - 116	0.04607	3.09	20	
Cobalt	0.0458	0.00500	0.05	0.000124	91.4	86 - 115	0.04474	2.34	20	
Copper	0.04698	0.00500	0.05	0.000742	92.5	85 - 118	0.04601	2.09	20	
Iron	70.93	0.200	5	68.38	51.1	87 - 118	68.61	3.33	20	SO
Lead	0.04948	0.00500	0.05	0.000052	98.8	88 - 115	0.04545	8.48	20	
Magnesium	28.33	0.200	5	24.18	83.0	83 - 118	27.58	2.69	20	SO
Manganese	1.223	0.00500	0.05	1.223	0.370	87 - 115	1.197	2.16	20	SO
Nickel	0.04705	0.00500	0.05	0.000426	93.3	85 - 117	0.04623	1.76	20	
Potassium	7.723	0.200	5	3.206	90.3	87 - 115	7.551	2.25	20	
Selenium	0.0485	0.00500	0.05	-0.00002	97.0	80 - 120	0.04772	1.6	20	
Silver	0.04658	0.00500	0.05	0.000008	93.1	85 - 116	0.04538	2.61	20	
Sodium	146.4	0.200	5	143.5	57.2	85 - 117	142.4	2.76	20	SO
Thallium	0.04759	0.00200	0.05	-0.000005	95.2	82 - 116	0.0425	11.3	20	
Vanadium	0.04655	0.00500	0.05	-0.001238	95.6	86 - 115	0.04535	2.63	20	
Zinc	0.0528	0.00500	0.05	0.006271	93.1	83 - 119	0.05116	3.15	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060498-08PDS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:30**
Client ID: **CO3_060920** Run ID: **ICPMS05_363745** SeqNo: **5631773** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1148	0.0100	0.1	0.01494	99.8	80 - 120				
Antimony	0.09919	0.00500	0.1	0.000146	99.0	80 - 120				
Arsenic	0.113	0.00500	0.1	0.001705	111	80 - 120				
Barium	1.204	0.00500	0.1	1.246	-41.6	80 - 120				SO
Beryllium	0.0962	0.00200	0.1	0.000021	96.2	80 - 120				
Cadmium	0.106	0.00200	0.1	0.000129	106	80 - 120				
Calcium	51.24	0.500	10	44.32	69.3	80 - 120				SO
Chromium	0.1086	0.00500	0.1	0.000391	108	80 - 120				
Cobalt	0.106	0.00500	0.1	0.000124	106	80 - 120				
Copper	0.1089	0.00500	0.1	0.000742	108	80 - 120				
Iron	73.82	0.200	10	68.38	54.4	80 - 120				SO
Lead	0.1057	0.00500	0.1	0.000052	106	80 - 120				
Magnesium	32.8	0.200	10	24.18	86.2	80 - 120				
Manganese	1.229	0.00500	0.1	1.223	5.63	80 - 120				SO
Nickel	0.109	0.00500	0.1	0.000426	109	80 - 120				
Potassium	13.74	0.200	10	3.206	105	80 - 120				
Selenium	0.1125	0.00500	0.1	-0.00002	113	80 - 120				
Silver	0.1003	0.00500	0.1	0.000008	100	80 - 120				
Sodium	144.2	0.200	10	143.5	7.08	80 - 120				SO
Thallium	0.1096	0.00200	0.1	-0.000005	110	80 - 120				
Vanadium	0.11	0.00500	0.1	-0.001238	111	80 - 120				
Zinc	0.1178	0.00500	0.1	0.006271	111	80 - 120				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060498-08SD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:22**
Client ID: **CO3_060920** Run ID: **ICPMS05_363745** SeqNo: **5631770** PrepDate: **19-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.02193	0.0500					0.01494	0	10	J
Antimony	0.00250	0.0250					0.000146	0	10	U
Arsenic	0.00250	0.0250					0.001705	0	10	U
Barium	1.206	0.0250					1.246	3.18	10	
Beryllium	0.00250	0.0100					0.000021	0	10	U
Cadmium	0.00250	0.0100					0.000129	0	10	U
Calcium	43.81	2.50					44.32	1.14	10	
Chromium	0.00250	0.0250					0.000391	0	10	U
Cobalt	0.00250	0.0250					0.000124	0	10	U
Copper	0.0125	0.0250					0.000742	0	10	U
Iron	70.45	1.00					68.38	3.04	10	
Lead	0.00500	0.0250					0.000052	0	10	U
Magnesium	24.9	1.00					24.18	2.98	10	
Manganese	1.246	0.0250					1.223	1.88	10	
Nickel	0.00500	0.0250					0.000426	0	10	U
Potassium	3.055	1.00					3.206	4.72	10	
Selenium	0.0125	0.0250					-0.00002	0	10	U
Silver	0.00250	0.0250					0.000008	0	10	U
Sodium	146.1	1.00					143.5	1.83	10	
Thallium	0.00250	0.0100					-0.000005	0	10	U
Vanadium	0.00500	0.0250					-0.001238	0	10	U
Zinc	0.0125	0.0250					0.006271	0	10	U

The following samples were analyzed in this batch: HS20060498-07 HS20060498-08

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154667 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:43**
Client ID: Run ID: **HG03_363622** SeqNo: **5627969** PrepDate: **19-Jun-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-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:45**
Client ID: Run ID: **HG03_363622** SeqNo: **5627970** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00496	0.000200	0.005	0	99.2	82 - 119				

MS Sample ID: **HS20060498-07MS** Units: **mg/L** Analysis Date: **19-Jun-2020 15:48**
Client ID: **18CPTMW18_060920** Run ID: **HG03_363622** SeqNo: **5627972** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00516	0.000200	0.005	0.00001600	103	82 - 119				

MSD Sample ID: **HS20060498-07MSD** Units: **mg/L** Analysis Date: **19-Jun-2020 15:50**
Client ID: **18CPTMW18_060920** Run ID: **HG03_363622** SeqNo: **5627973** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	0.00001600	102	82 - 119	0.005160	0.778	20	

The following samples were analyzed in this batch: HS20060498-07 HS20060498-08

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: 154443 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154443** Units: **ug/L** Analysis Date: **27-Jun-2020 10:34**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640906** PrepDate: **13-Jun-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	*0.07844*	*0*	*0.08*	*0*	*98.0*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08403*	*0*	*0.08*	*0*	*105*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08012*	*0*	*0.08*	*0*	*100*	*40 - 140*				

LCS Sample ID: **LCS-154443** Units: **ug/L** Analysis Date: **27-Jun-2020 10:54**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640907** PrepDate: **13-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1007	0.010	0.08	0	126	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08275*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0827*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08411*	*0*	*0.08*	*0*	*105*	*40 - 140*				

LCSD Sample ID: **LCSD-154443** Units: **ug/L** Analysis Date: **27-Jun-2020 11:14**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640908** PrepDate: **13-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.1097	0.010	0.08	0	137	40 - 140	0.1007	8.55	20	
Surr: 2-Fluorobiphenyl	*0.07804*	*0*	*0.08*	*0*	*97.6*	*40 - 140*	*0.08275*	*5.85*	*20*	
Surr: 4-Terphenyl-d14	*0.08552*	*0*	*0.08*	*0*	*107*	*40 - 140*	*0.0827*	*3.35*	*20*	
Surr: Nitrobenzene-d5	*0.07892*	*0*	*0.08*	*0*	*98.6*	*40 - 140*	*0.08411*	*6.36*	*20*	

The following samples were analyzed in this batch: HS20060498-01 HS20060498-02 HS20060498-03 HS20060498-06 HS20060498-07 HS20060498-08

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200618** Units: **UG/L** Analysis Date: **18-Jun-2020 14:08**
Client ID: Run ID: **VOA6_363560** SeqNo: **5626504** 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200618** Units: **UG/L** Analysis Date: **18-Jun-2020 14:08**
Client ID: Run ID: **VOA6_363560** SeqNo: **5626504** 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	*41.77*	*1.0*	*50*	*0*	*83.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.09*	*1.0*	*50*	*0*	*98.2*	*85 - 114*				
Surr: Dibromofluoromethane	*44.28*	*1.0*	*50*	*0*	*88.6*	*80 - 119*				
Surr: Toluene-d8	*53.63*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200618** Units: **UG/L** Analysis Date: **18-Jun-2020 13:19**
Client ID: Run ID: **VOA6_363560** SeqNo: **5626503** 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	18.77	1.0	20	0	93.9	78 - 124				
1,1,1-Trichloroethane	18.05	1.0	20	0	90.3	74 - 131				
1,1,2,2-Tetrachloroethane	19.2	1.0	20	0	96.0	71 - 121				
1,1,2-Trichloroethane	19.18	1.0	20	0	95.9	80 - 119				
1,1-Dichloroethane	18.67	1.0	20	0	93.3	77 - 125				
1,1-Dichloroethene	17.56	1.0	20	0	87.8	71 - 131				
1,1-Dichloropropene	16.98	1.0	20	0	84.9	78 - 125				
1,2,3-Trichlorobenzene	33.1	1.0	20	0	166	69 - 129				S
1,2,3-Trichloropropane	18.08	1.0	20	0	90.4	73 - 122				
1,2,4-Trichlorobenzene	30.9	1.0	20	0	155	69 - 130				S
1,2,4-Trimethylbenzene	17	1.0	20	0	85.0	76 - 124				
1,2-Dibromo-3-chloropropane	22.66	1.0	20	0	113	62 - 128				
1,2-Dibromoethane	19.53	1.0	20	0	97.6	77 - 121				
1,2-Dichlorobenzene	18.97	1.0	20	0	94.8	80 - 119				
1,2-Dichloroethane	19.09	1.0	20	0	95.5	73 - 128				
1,2-Dichloropropane	19.58	1.0	20	0	97.9	78 - 122				
1,3,5-Trimethylbenzene	16.49	1.0	20	0	82.5	75 - 124				
1,3-Dichlorobenzene	17.47	1.0	20	0	87.3	80 - 119				
1,3-Dichloropropane	19.2	1.0	20	0	96.0	80 - 119				
1,4-Dichlorobenzene	17.67	1.0	20	0	88.4	79 - 118				
2,2-Dichloropropane	18.04	1.0	20	0	90.2	60 - 139				
2-Butanone	36	2.0	40	0	90.0	56 - 143				
2-Chlorotoluene	16.48	1.0	20	0	82.4	79 - 122				
2-Hexanone	39.04	2.0	40	0	97.6	57 - 139				
4-Chlorotoluene	16.53	1.0	20	0	82.7	78 - 122				
4-Isopropyltoluene	16.39	1.0	20	0	82.0	77 - 127				
4-Methyl-2-pentanone	38.46	2.0	40	0	96.1	67 - 130				
Acetone	30.33	2.0	40	0	75.8	39 - 160				
Benzene	18.65	1.0	20	0	93.3	79 - 120				
Bromobenzene	17.71	1.0	20	0	88.5	80 - 120				
Bromochloromethane	20.36	1.0	20	0	102	78 - 123				
Bromodichloromethane	18.7	1.0	20	0	93.5	79 - 125				
Bromoform	19.56	1.0	20	0	97.8	66 - 130				
Bromomethane	19.39	1.0	20	0	97.0	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200618** Units: **UG/L** Analysis Date: **18-Jun-2020 13:19**
Client ID: Run ID: **VOA6_363560** SeqNo: **5626503** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	36.17	2.0	40	0	90.4	64 - 133				
Carbon tetrachloride	16.67	1.0	20	0	83.3	72 - 136				
Chlorobenzene	18.4	1.0	20	0	92.0	82 - 118				
Chloroethane	17.82	1.0	20	0	89.1	60 - 138				
Chloroform	19.32	1.0	20	0	96.6	79 - 124				
Chloromethane	16.99	1.0	20	0	84.9	50 - 139				
cis-1,2-Dichloroethene	19.15	1.0	20	0	95.7	78 - 123				
cis-1,3-Dichloropropene	19.17	1.0	20	0	95.9	75 - 124				
Dibromochloromethane	19.35	1.0	20	0	96.8	74 - 126				
Dibromomethane	18.9	1.0	20	0	94.5	79 - 123				
Dichlorodifluoromethane	16.21	1.0	20	0	81.0	32 - 152				
Ethylbenzene	17.75	1.0	20	0	88.7	79 - 121				
Hexachlorobutadiene	30.27	1.0	20	0	151	66 - 134				S
Isopropylbenzene	16.95	1.0	20	0	84.8	72 - 131				
m,p-Xylene	35.53	2.0	40	0	88.8	80 - 121				
Methylene chloride	19.79	2.0	20	0	98.9	74 - 124				
Naphthalene	28.14	1.0	20	0	141	61 - 128				S
n-Butylbenzene	16.52	1.0	20	0	82.6	75 - 128				
n-Propylbenzene	15.88	1.0	20	0	79.4	76 - 126				
o-Xylene	18.49	1.0	20	0	92.4	78 - 122				
sec-Butylbenzene	15.59	1.0	20	0	77.9	77 - 126				
Styrene	18.3	1.0	20	0	91.5	78 - 123				
tert-Butylbenzene	15.83	1.0	20	0	79.1	78 - 124				
Tetrachloroethene	17.91	1.0	20	0	89.5	74 - 129				
Toluene	18.36	1.0	20	0	91.8	80 - 121				
trans-1,2-Dichloroethene	18.88	1.0	20	0	94.4	75 - 124				
trans-1,3-Dichloropropene	19.11	1.0	20	0	95.5	73 - 127				
Trichloroethene	18.73	1.0	20	0	93.7	79 - 123				
Trichlorofluoromethane	17.4	1.0	20	0	87.0	65 - 141				
Vinyl chloride	16.15	1.0	20	0	80.8	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.18*	*1.0*	*50*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.58*	*1.0*	*50*	*0*	*99.2*	*85 - 114*				
Surr: Dibromofluoromethane	*51.91*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*46.81*	*1.0*	*50*	*0*	*93.6*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060498-05MS** Units: **UG/L** Analysis Date: **18-Jun-2020 17:44**
Client ID: **CO1_060920** Run ID: **VOA6_363560** SeqNo: **5626513** 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	20.66	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	17.23	1.0	20	0	86.1	74 - 131				
1,1,2,2-Tetrachloroethane	20.18	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	20.83	1.0	20	0	104	80 - 119				
1,1-Dichloroethane	16.54	1.0	20	0	82.7	77 - 125				
1,1-Dichloroethene	15.79	1.0	20	0	79.0	71 - 131				
1,1-Dichloropropene	18.73	1.0	20	0	93.6	78 - 125				
1,2,3-Trichlorobenzene	29.9	1.0	20	0	150	69 - 129				S
1,2,3-Trichloropropane	19.9	1.0	20	0	99.5	73 - 122				
1,2,4-Trichlorobenzene	28.64	1.0	20	0	143	69 - 130				S
1,2,4-Trimethylbenzene	19.59	1.0	20	0	97.9	76 - 124				
1,2-Dibromo-3-chloropropane	25.28	1.0	20	0	126	62 - 128				
1,2-Dibromoethane	21.04	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.8	1.0	20	0	104	80 - 119				
1,2-Dichloroethane	18.75	1.0	20	0	93.8	73 - 128				
1,2-Dichloropropane	19.87	1.0	20	0	99.3	78 - 122				
1,3,5-Trimethylbenzene	19.15	1.0	20	0	95.8	75 - 124				
1,3-Dichlorobenzene	19.76	1.0	20	0	98.8	80 - 119				
1,3-Dichloropropane	20.18	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	19.16	1.0	20	0	95.8	79 - 118				
2,2-Dichloropropane	16.24	1.0	20	0	81.2	60 - 139				
2-Butanone	32.37	2.0	40	0	80.9	56 - 143				
2-Chlorotoluene	18.48	1.0	20	0	92.4	79 - 122				
2-Hexanone	42.35	2.0	40	0	106	57 - 139				
4-Chlorotoluene	18.55	1.0	20	0	92.8	78 - 122				
4-Isopropyltoluene	19.96	1.0	20	0	99.8	77 - 127				
4-Methyl-2-pentanone	42.19	2.0	40	0	105	67 - 130				
Acetone	24.29	2.0	40	0	60.7	39 - 160				
Benzene	18.96	1.0	20	0	94.8	79 - 120				
Bromobenzene	19.79	1.0	20	0	99.0	80 - 120				
Bromochloromethane	17.64	1.0	20	0	88.2	78 - 123				
Bromodichloromethane	18.9	1.0	20	0	94.5	79 - 125				
Bromoform	21.43	1.0	20	0	107	66 - 130				
Bromomethane	13.16	1.0	20	0	65.8	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060498-05MS** Units: **UG/L** Analysis Date: **18-Jun-2020 17:44**
Client ID: **CO1_060920** Run ID: **VOA6_363560** SeqNo: **5626513** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	31.69	2.0	40	0	79.2	64 - 133				
Carbon tetrachloride	18.42	1.0	20	0	92.1	72 - 136				
Chlorobenzene	19.96	1.0	20	0	99.8	82 - 118				
Chloroethane	14.76	1.0	20	0	73.8	60 - 138				
Chloroform	16.74	1.0	20	0	83.7	79 - 124				
Chloromethane	9.874	1.0	20	0	49.4	50 - 139				S
cis-1,2-Dichloroethene	16.61	1.0	20	0	83.1	78 - 123				
cis-1,3-Dichloropropene	19.03	1.0	20	0	95.1	75 - 124				
Dibromochloromethane	20.25	1.0	20	0	101	74 - 126				
Dibromomethane	19.19	1.0	20	0	96.0	79 - 123				
Dichlorodifluoromethane	5.626	1.0	20	0	28.1	32 - 152				S
Ethylbenzene	20.42	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	30.96	1.0	20	0	155	66 - 134				S
Isopropylbenzene	20.28	1.0	20	0	101	72 - 131				
m,p-Xylene	40.84	2.0	40	0	102	80 - 121				
Methylene chloride	16.46	2.0	20	0	82.3	74 - 124				
Naphthalene	26.48	1.0	20	0	132	61 - 128				S
n-Butylbenzene	20.17	1.0	20	0	101	75 - 128				
n-Propylbenzene	19.26	1.0	20	0	96.3	76 - 126				
o-Xylene	20.45	1.0	20	0	102	78 - 122				
sec-Butylbenzene	19.39	1.0	20	0	96.9	77 - 126				
Styrene	19.68	1.0	20	0	98.4	78 - 123				
tert-Butylbenzene	19.3	1.0	20	0	96.5	78 - 124				
Tetrachloroethene	21.47	1.0	20	0	107	74 - 129				
Toluene	20.19	1.0	20	0	101	80 - 121				
trans-1,2-Dichloroethene	16.88	1.0	20	0	84.4	75 - 124				
trans-1,3-Dichloropropene	19.11	1.0	20	0	95.6	73 - 127				
Trichloroethene	21.28	1.0	20	0	106	79 - 123				
Trichlorofluoromethane	15.95	1.0	20	0	79.8	65 - 141				
Vinyl chloride	11.6	1.0	20	0	58.0	58 - 137				S
Surr: 1,2-Dichloroethane-d4	*41.36*	*1.0*	*50*	*0*	*82.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.41*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*45.01*	*1.0*	*50*	*0*	*90.0*	*80 - 119*				
Surr: Toluene-d8	*52.74*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060498-05MSD** Units: **UG/L** Analysis Date: **18-Jun-2020 18:08**
Client ID: **CO1_060920** Run ID: **VOA6_363560** SeqNo: **5626514** 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	20.84	1.0	20	0	104	78 - 124	20.66	0.888	20	
1,1,1-Trichloroethane	17.28	1.0	20	0	86.4	74 - 131	17.23	0.302	20	
1,1,2,2-Tetrachloroethane	20.92	1.0	20	0	105	71 - 121	20.18	3.61	20	
1,1,2-Trichloroethane	20.42	1.0	20	0	102	80 - 119	20.83	1.96	20	
1,1-Dichloroethane	16.43	1.0	20	0	82.2	77 - 125	16.54	0.679	20	
1,1-Dichloroethene	16.1	1.0	20	0	80.5	71 - 131	15.79	1.93	20	
1,1-Dichloropropene	19.46	1.0	20	0	97.3	78 - 125	18.73	3.84	20	
1,2,3-Trichlorobenzene	34.5	1.0	20	0	173	69 - 129	29.9	14.3	20	S
1,2,3-Trichloropropane	20.11	1.0	20	0	101	73 - 122	19.9	1.05	20	
1,2,4-Trichlorobenzene	31.63	1.0	20	0	158	69 - 130	28.64	9.93	20	S
1,2,4-Trimethylbenzene	21.18	1.0	20	0	106	76 - 124	19.59	7.81	20	
1,2-Dibromo-3-chloropropane	24.08	1.0	20	0	120	62 - 128	25.28	4.89	20	
1,2-Dibromoethane	20.96	1.0	20	0	105	77 - 121	21.04	0.39	20	
1,2-Dichlorobenzene	21.9	1.0	20	0	109	80 - 119	20.8	5.12	20	
1,2-Dichloroethane	18.72	1.0	20	0	93.6	73 - 128	18.75	0.2	20	
1,2-Dichloropropane	19.56	1.0	20	0	97.8	78 - 122	19.87	1.55	20	
1,3,5-Trimethylbenzene	20.89	1.0	20	0	104	75 - 124	19.15	8.7	20	
1,3-Dichlorobenzene	21.23	1.0	20	0	106	80 - 119	19.76	7.19	20	
1,3-Dichloropropane	20.28	1.0	20	0	101	80 - 119	20.18	0.48	20	
1,4-Dichlorobenzene	20.22	1.0	20	0	101	79 - 118	19.16	5.38	20	
2,2-Dichloropropane	16.03	1.0	20	0	80.2	60 - 139	16.24	1.27	20	
2-Butanone	31.27	2.0	40	0	78.2	56 - 143	32.37	3.45	20	
2-Chlorotoluene	19.65	1.0	20	0	98.2	79 - 122	18.48	6.13	20	
2-Hexanone	41.82	2.0	40	0	105	57 - 139	42.35	1.27	20	
4-Chlorotoluene	19.85	1.0	20	0	99.3	78 - 122	18.55	6.78	20	
4-Isopropyltoluene	22.21	1.0	20	0	111	77 - 127	19.96	10.7	20	
4-Methyl-2-pentanone	41.4	2.0	40	0	103	67 - 130	42.19	1.88	20	
Acetone	23.7	2.0	40	0	59.3	39 - 160	24.29	2.44	20	
Benzene	19.1	1.0	20	0	95.5	79 - 120	18.96	0.747	20	
Bromobenzene	20.33	1.0	20	0	102	80 - 120	19.79	2.69	20	
Bromochloromethane	16.77	1.0	20	0	83.9	78 - 123	17.64	5.06	20	
Bromodichloromethane	18.92	1.0	20	0	94.6	79 - 125	18.9	0.153	20	
Bromoform	21.21	1.0	20	0	106	66 - 130	21.43	1.03	20	
Bromomethane	13	1.0	20	0	65.0	53 - 141	13.16	1.22	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060498-05MSD** Units: **UG/L** Analysis Date: **18-Jun-2020 18:08**
Client ID: **CO1_060920** Run ID: **VOA6_363560** SeqNo: **5626514** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	32.17	2.0	40	0	80.4	64 - 133	31.69	1.5	20	
Carbon tetrachloride	19.27	1.0	20	0	96.3	72 - 136	18.42	4.47	20	
Chlorobenzene	20.13	1.0	20	0	101	82 - 118	19.96	0.863	20	
Chloroethane	14.39	1.0	20	0	72.0	60 - 138	14.76	2.55	20	
Chloroform	16.68	1.0	20	0	83.4	79 - 124	16.74	0.394	20	
Chloromethane	10	1.0	20	0	50.0	50 - 139	9.874	1.27	20	
cis-1,2-Dichloroethene	16.81	1.0	20	0	84.1	78 - 123	16.61	1.2	20	
cis-1,3-Dichloropropene	19.25	1.0	20	0	96.3	75 - 124	19.03	1.18	20	
Dibromochloromethane	19.73	1.0	20	0	98.6	74 - 126	20.25	2.64	20	
Dibromomethane	19.22	1.0	20	0	96.1	79 - 123	19.19	0.172	20	
Dichlorodifluoromethane	5.978	1.0	20	0	29.9	32 - 152	5.626	6.07	20	S
Ethylbenzene	20.89	1.0	20	0	104	79 - 121	20.42	2.27	20	
Hexachlorobutadiene	32.97	1.0	20	0	165	66 - 134	30.96	6.26	20	S
Isopropylbenzene	21.08	1.0	20	0	105	72 - 131	20.28	3.88	20	
m,p-Xylene	41.35	2.0	40	0	103	80 - 121	40.84	1.24	20	
Methylene chloride	16.3	2.0	20	0	81.5	74 - 124	16.46	0.953	20	
Naphthalene	32.74	1.0	20	0	164	61 - 128	26.48	21.1	20	SR
n-Butylbenzene	22.75	1.0	20	0	114	75 - 128	20.17	12	20	
n-Propylbenzene	21	1.0	20	0	105	76 - 126	19.26	8.67	20	
o-Xylene	20.76	1.0	20	0	104	78 - 122	20.45	1.5	20	
sec-Butylbenzene	21.89	1.0	20	0	109	77 - 126	19.39	12.1	20	
Styrene	20.33	1.0	20	0	102	78 - 123	19.68	3.24	20	
tert-Butylbenzene	21.38	1.0	20	0	107	78 - 124	19.3	10.2	20	
Tetrachloroethene	21.84	1.0	20	0	109	74 - 129	21.47	1.72	20	
Toluene	20.52	1.0	20	0	103	80 - 121	20.19	1.62	20	
trans-1,2-Dichloroethene	16.99	1.0	20	0	85.0	75 - 124	16.88	0.689	20	
trans-1,3-Dichloropropene	18.81	1.0	20	0	94.0	73 - 127	19.11	1.61	20	
Trichloroethene	20.77	1.0	20	0	104	79 - 123	21.28	2.42	20	
Trichlorofluoromethane	16.33	1.0	20	0	81.6	65 - 141	15.95	2.33	20	
Vinyl chloride	11.86	1.0	20	0	59.3	58 - 137	11.6	2.22	20	
Surr: 1,2-Dichloroethane-d4	*41.34*	*1.0*	*50*	*0*	*82.7*	*81 - 118*	*41.36*	*0.0482*	*20*	
Surr: 4-Bromofluorobenzene	*49.47*	*1.0*	*50*	*0*	*98.9*	*85 - 114*	*50.41*	*1.88*	*20*	
Surr: Dibromofluoromethane	*43.79*	*1.0*	*50*	*0*	*87.6*	*80 - 119*	*45.01*	*2.73*	*20*	
Surr: Toluene-d8	*52.86*	*1.0*	*50*	*0*	*106*	*89 - 112*	*52.74*	*0.226*	*20*	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060498

QC BATCH REPORT

Batch ID: R363560 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20060498-01	HS20060498-03	HS20060498-04	HS20060498-05
HS20060498-06	HS20060498-07	HS20060498-08	HS20060498-09

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060498**

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
Illinois	2000322020-4	09-May-2021
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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060498

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060498-01	MW5_060920	Login	6/11/2020 9:25:17 AM	RPM	MET053
HS20060498-01	MW5_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-01	MW5_060920	Login	6/11/2020 9:25:17 AM	RPM	VOA126
HS20060498-02	18CPTMW08DW_060920	Login	6/11/2020 9:25:17 AM	RPM	MET053
HS20060498-02	18CPTMW08DW_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-02	18CPTMW08DW_060920	Login	6/11/2020 9:25:17 AM	RPM	EXT154
HS20060498-02	18CPTMW08DW_060920	Login	6/11/2020 9:25:17 AM	RPM	VOA126
HS20060498-03	18CPTMW08SW_060920	Login	6/11/2020 9:25:17 AM	RPM	MET092
HS20060498-03	18CPTMW08SW_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-03	18CPTMW08SW_060920	Login	6/11/2020 9:25:17 AM	RPM	EXT154
HS20060498-03	18CPTMW08SW_060920	Login	6/11/2020 9:25:17 AM	RPM	VOA126
HS20060498-04	MW23_060920	Login	6/11/2020 9:25:17 AM	RPM	MET092
HS20060498-04	MW23_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-04	MW23_060920	Login	6/11/2020 9:25:17 AM	RPM	EXT154
HS20060498-04	MW23_060920	Login	6/11/2020 9:25:17 AM	RPM	VOA126
HS20060498-05	CO1_060920	Login	6/11/2020 9:25:17 AM	RPM	MET053
HS20060498-05	CO1_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-05	CO1_060920	Login	6/11/2020 9:25:17 AM	RPM	EXT154
HS20060498-05	CO1_060920	Login	6/11/2020 9:25:17 AM	RPM	VOA126
HS20060498-06	MW16_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-06	MW16_060920	Login	6/11/2020 9:25:17 AM	RPM	EXT154
HS20060498-06	MW16_060920	Login	6/11/2020 9:25:17 AM	RPM	VOA126
HS20060498-07	18CPTMW18_060920	Login	6/11/2020 9:25:17 AM	RPM	MET053
HS20060498-07	18CPTMW18_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-07	18CPTMW18_060920	Login	6/11/2020 9:25:17 AM	RPM	EXT154
HS20060498-08	CO3_060920	Login	6/11/2020 9:25:17 AM	RPM	MET092
HS20060498-08	CO3_060920	Login	6/11/2020 9:25:17 AM	RPM	Sub
HS20060498-08	CO3_060920	Login	6/11/2020 9:25:17 AM	RPM	VOA126
HS20060498-09	Trip Blank	Login	6/11/2020 9:25:17 AM	RPM	VOA126

ALS Houston, US Date: 29-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060498 **Date/Time Received:** 10-Jun-2020 09:40

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

Completed By: /S/ RJ Modashia (eSignature) 11-Jun-2020 09:42 (Date/Time) **Reviewed by:** (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):	1.2°C/1.2°C UC/C	IR25
Cooler(s)/Kit(s):	23944	
Date/Time sample(s) sent to storage:	06/11/2020 11:00AM	

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: Sx ids differ ,
COC= 18CPTMW08DW_060920 Date : 9 June 2020 Time 07:55
Labels = 18CPTMW08SW_060920 Date : 6/9/20 Time : 07:55

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

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

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Field Sample ID (20 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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
MW5_060920	09 Jun 2020	0705	-	N		WG	5	X	X		X				
18CPTMW08DW_060920	09 Jun 2020	0755	-	N		WG	2	X	X		X				
18CPTMW08SW_060920	09 Jun 2020	0840	-	N		WG	5	X	X		X				
MW23_060920	09 Jun 2020	0930	-	N		WG	4	X	X						
COL_060920	09 Jun 2020	1020	-	N		WG	4	X	X						
COL_060920_MS	09 Jun 2020	1020	-	MS		WG	4	X	X						
COL_060920_MSD	09 Jun 2020	1020	-	SD		WG	4	X	X						
MW16_060920	09 Jun 2020	1120	-	N		WG	5	X	X		X				
18CPTMW18_060920	09 Jun 2020	1215	-	N		WG	6	X	X	X	X				
COL3_060920	09 Jun 2020	1315	-	N		WG	6	X	X	X	X				
TRIP BLANK	09 Jun 2020		-	TB		W	2	X							

Sample Analysis Requested (5) | Quality Assurance Samples (6)

COMMENTS: _____

HS20060498
Bhate Environmental Associates, Inc.
LHAAP 18 24

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/9/20	1430	1. J. [illegible]	6/10/20	09:40
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped

Method of Shipment: _____

_____ Fed Ex _____ Airbill Number: _____

Analytical Lab: ALS 10450 Stanciff 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)

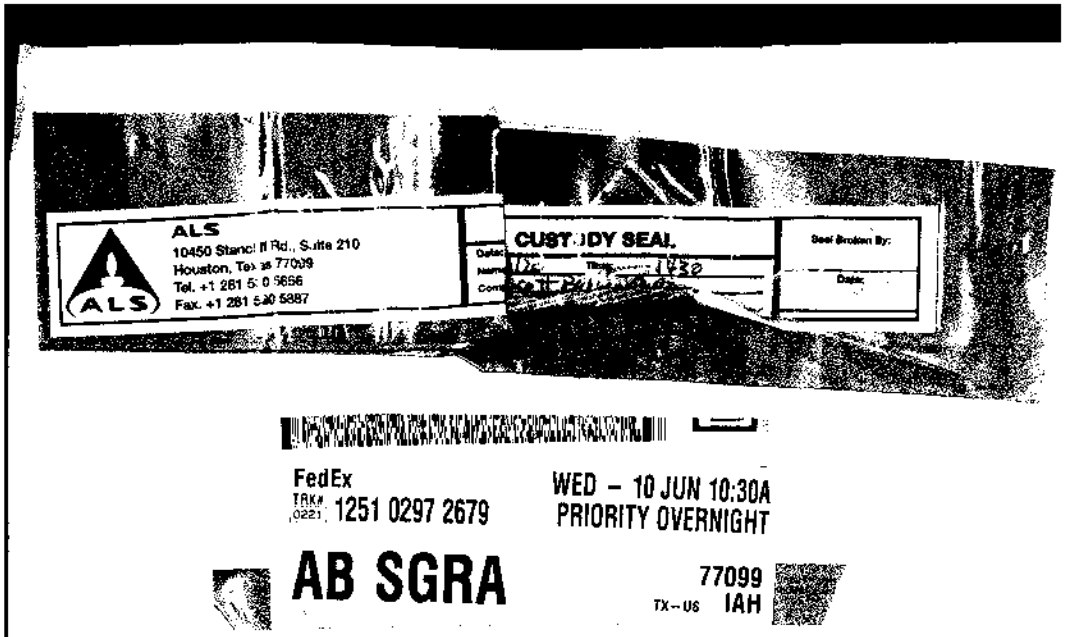
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

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

Cooler - 23944
Temp 1.2°C
11225
CF 0.0



FedEx
TRK# 0221 1251 0297 2679

WED – 10 JUN 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

June 24, 2020 Service Request No:E2000538

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

Laboratory Results for: HS20060498

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 12, 2020
For your reference, these analyses have been assigned our service request number **E2000538.**

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.:**	E2000538
Project:	HS20060498	**Date Received:**	06/12/20
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

Eight samples were received for analysis at ALS Environmental in Houston on 06/12/20.

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:

EQ2000238: 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, DLCS, MS, & MSD 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.

Client: ALS Environmental - US **Service Request:**E2000538
Project: HS20060498

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000538-001	MW5_060920	6/9/2020	0705
E2000538-002	18CPTMW08DW_060920	6/9/2020	0755
E2000538-003	18CPTMW08SW_060920	6/9/2020	0840
E2000538-004	MW23_060920	6/9/2020	0930
E2000538-005	CO1_060920	6/9/2020	1020
E2000538-006	MW16_060920	6/9/2020	1120
E2000538-007	18CPTMW18_060920	6/9/2020	1215
E2000538-008	CO3_060920	6/9/2020	1315

Service Request Summary

Folder #: **E2000538**
Client Name: ALS Environmental - US
Project Name: HS20060498
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: 06/12/20
Internal Due Date: 6/24/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060498
EDD: No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000538-001	MW5_060920	Ground Water	06/09/20 0705	**IV**
E2000538-002	18CPTMW08DW_060920	Ground Water	06/09/20 0755	**IV**
E2000538-003	18CPTMW08SW_060920	Ground Water	06/09/20 0840	**IV**
E2000538-004	MW23_060920	Ground Water	06/09/20 0930	**IV**
E2000538-005	CO1_060920	Ground Water	06/09/20 1020	**IV**
E2000538-006	MW16_060920	Ground Water	06/09/20 1120	**IV**
E2000538-007	18CPTMW18_060920	Ground Water	06/09/20 1215	**IV**
E2000538-008	CO3_060920	Ground Water	06/09/20 1315	**IV**

Service Request Summary

Folder #: **E2000538**
Client Name: ALS Environmental - US
Project Name: HS20060498
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: 06/12/20
Internal Due Date: 6/24/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060498
EDD: No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	7	Level IV due 7/1,level II 6/24
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD Level IV due 7/1,level II 6/24

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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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
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E2000538 5
ALS Laboratory Group
HS20060498

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:** 14083

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:	HS20060498
TSR:	Danielle Winnings

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS20060498-01**	**MW5_060920**	**Groundwater**	**09 Jun 2020 07:05**
	SUB_Perch-6850			24 Jun 2020
2.	**HS20060498-02**	**18CPTMW08DW_060920**	**Groundwater**	**09 Jun 2020 07:55**
	SUB_Perch-6850			24 Jun 2020
3.	**HS20060498-03**	**18CPTMW08SW_060920**	**Groundwater**	**09 Jun 2020 08:40**
	SUB_Perch-6850			24 Jun 2020
4.	**HS20060498-04**	**MW23_060920**	**Groundwater**	**09 Jun 2020 09:30**
	SUB_Perch-6850			24 Jun 2020
5.	**HS20060498-05**	**COI_060920**	**Groundwater**	**09 Jun 2020 10:20**
	SUB_Perch-6850 MS/MSD			24 Jun 2020
6.	**HS20060498-06**	**MW16_060920**	**Groundwater**	**09 Jun 2020 11:20**
	SUB_Perch-6850			24 Jun 2020
7.	**HS20060498-07**	**18CPTMW18_060920**	**Groundwater**	**09 Jun 2020 12:15**
	SUB_Perch-6850			24 Jun 2020
8.	**HS20060498-08**	**CO3_060920**	**Groundwater**	**09 Jun 2020 13:15**
	SUB_Perch-6850			24 Jun 2020

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 14083

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

QC Level: DOD IV (DoD Data Package)

Relinquished By: NA Date/Time:

Received By: Date/Time: 6/12/20 1506

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALY-H1 Thermometer ID IR24

Date/Time Received: 6/12/20 Initials: CH Date/Time Logged in: 6/12/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier (ALY) ○ 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?
-		6/12/20	1400	CH	2.4	✓
						☐
						☐
						☐

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:

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Houston, TX 77099
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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
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 360212 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/17/20 10:43

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000501-001	18CPTMW14_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000501-002	18CPTMW24_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000501-003	18WW25_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000501-004	18WW10_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000501-005	MW13_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000501-006	CO2_060420	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000510-001	LH18/24-SP650_060920_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000511-001	KAFB7-WW01-060820	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000535-001	18CPTMW035W_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000535-002	MW21_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000535-003	18CPTMW07_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000538-001	MW5_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000538-002	18CPTMW08DW_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000538-003	18CPTMW08SW_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000538-004	MW23_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2000538-005	CO1_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2000538-006	MW16_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
18	E2000538-007	18CPTMW18_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
19	E2000538-008	CO3_060920	.01	6850/ClO4 DOD			Ground Water	10mL	
20	EQ2000238-01	MB		6850/ClO4 DOD			Liquid	10mL	
21	EQ2000238-02	LCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2000238-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2000238-04	CO1_060920 MS	.01	6850/ClO4 DOD			Liquid	10mL	
24	EQ2000238-05	CO1_060920 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

EQ2000238-02 100.00µL EQ2000238-03 100.00µL EQ2000238-04 100.00µL EQ2000238-05 100.00µL

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

E2000501-001 1.00µL E2000501-002 1.00µL E2000501-003 1.00µL E2000501-004 1.00µL E2000501-005 1.00µL E2000501-006 1.00µL
E2000538-005 1.00µL EQ2000238-01 1.00µL EQ2000238-02 1.00µL EQ2000238-03 1.00µL EQ2000238-04 1.00µL EQ2000238-05 1.00µL

Preparation Information Benchsheet

Prep Run#: 360212
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/17/20 10:43

Preparation Steps

Step: Preparation
Started: 6/17/20 10:43
Finished: 6/17/20 16:30
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 0705
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW5_060920	**Units:**	µg/L
Lab Code:	E2000538-001	**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	**23900**		100	50.0	25.0	1000	6/17/20	6/22/20 14:54	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 0755
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW08DW_060920	**Units:**	µg/L
Lab Code:	E2000538-002	**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	**2260**		10.0	5.00	2.50	100	6/17/20	6/22/20 15:02	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 0840
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW08SW_060920	**Units:**	µg/L
Lab Code:	E2000538-003	**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	**18400**		100	50.0	25.0	1000	6/17/20	6/22/20 15:10	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 0930
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW23_060920	**Units:**	µg/L
Lab Code:	E2000538-004	**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	**63100**		200	100	50.0	2000	6/17/20	6/22/20 15:18	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 1020
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	CO1_060920	**Units:**	µg/L
Lab Code:	E2000538-005	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.887**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:58	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 1120
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW16_060920	**Units:**	µg/L
Lab Code:	E2000538-006	**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	**848**		5.00	2.50	1.25	50	6/17/20	6/22/20 15:26	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 1215
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW18_060920	**Units:**	µg/L
Lab Code:	E2000538-007	**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	**0.206**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 15:33	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 1315
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	CO3_060920	**Units:**	µg/L
Lab Code:	E2000538-008	**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	**141**		0.500	0.250	0.125	5	6/17/20	6/22/20 16:05	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000238-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:18	360212	684542	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060498
Sample Matrix: Ground Water

Service Request: E2000538
Date Analyzed: 6/22/20

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

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 360212

	Lab Control Sample EQ2000238-02			Duplicate Lab Control Sample EQ2000238-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.107	0.100	107	0.114	0.100	114	84 - 119	6	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:**	E2000538
Project:	HS20060498	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000238-02	**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	**0.107**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:26	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000238-03	**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	**0.114**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:34	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/9/20
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
		Date Analyzed:	6/22/20

Matrix Spike Summary

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

Sample Name:	CO1_060920	**Units:**	µg/L
Lab Code:	E2000538-005	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		CO1_060920MS				CO1_060920DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000238-04				EQ2000238-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**		**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.887	0.983	0.100	96	#	0.982	0.100	95	#	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:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 1020
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	CO1_060920	**Units:**	µg/L
Lab Code:	EQ2000238-04	**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	**0.983**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:42	360212	684542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Collected:**	6/ 9/20 1020
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	CO1_060920	**Units:**	µg/L
Lab Code:	EQ2000238-05	**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	**0.982**		0.100	0.0500	0.0250	1	6/17/20	6/22/20 11:50	360212	684542	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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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

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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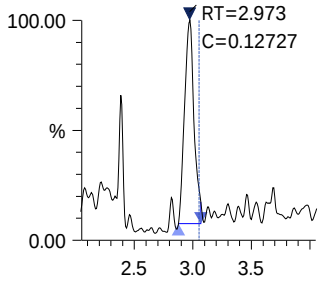
PERCHLORATE1

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

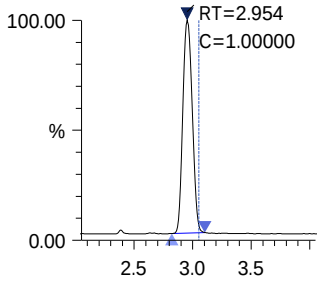
Perchlorate

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

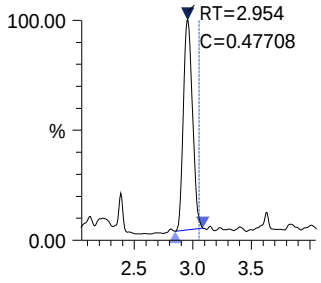
Date acquired: 6/2/2020 3:45:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_010.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

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

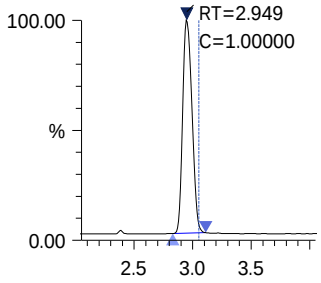
Q 99.00>83.00 (-) 1.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 138722

ISTD 107.00>89.00 (-) 2.53e4



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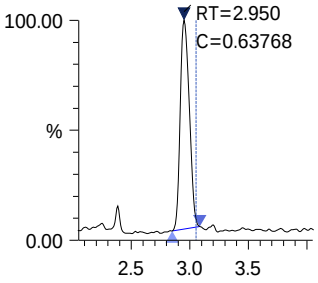
PERCHLORATE3

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

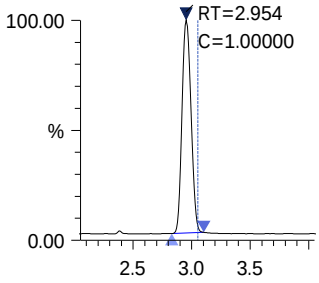
Perchlorate

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



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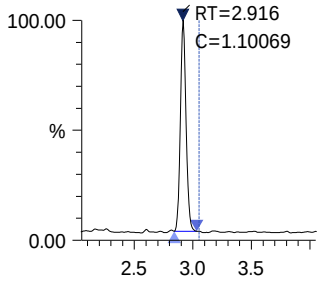
PERCHLORATE4

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

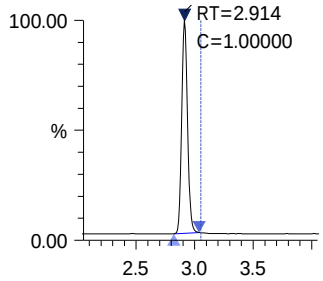
Perchlorate

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

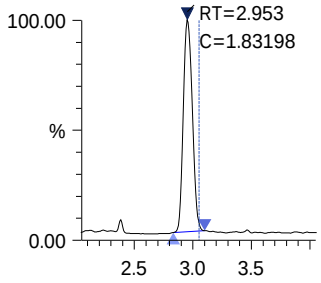
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/2/2020 4:13:21 PM	33971	1.83198	20200602_013	2.953	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/2/2020 4:13:21 PM	144982	1.00000	20200602_013	2.953	25.0000	1.0000	8

Perchlorate

Conc 1.83198

Area 33971

Q 99.00>83.00 (-) 6.29e3

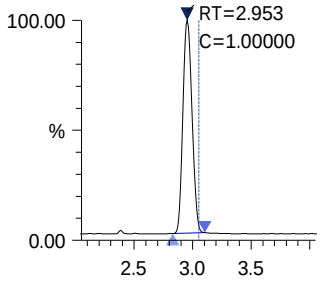


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 144982

ISTD 107.00>89.00 (-) 2.71e4



ALS Group Houston

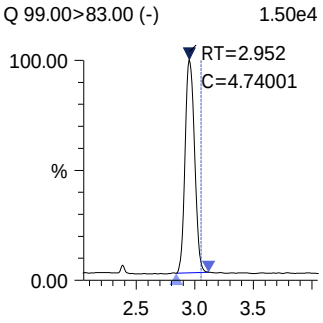
PERCHLORATE6

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

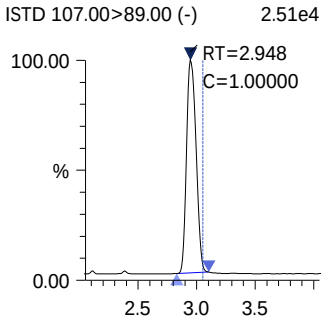
Perchlorate

Conc 4.74001
Area 85178



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 140500



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PERCHLORATE7

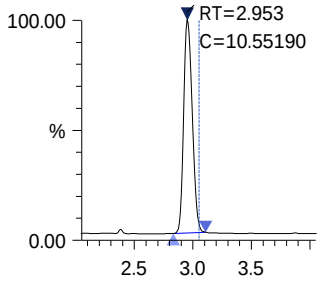
Date acquired: 6/2/2020 4:29:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_015.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

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

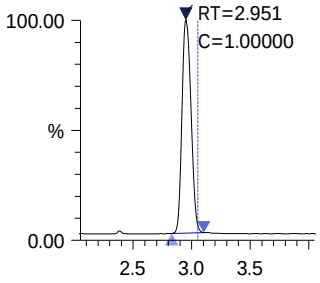
Q 99.00>83.00 (-) 3.36e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 128928

ISTD 107.00>89.00 (-) 2.43e4



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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

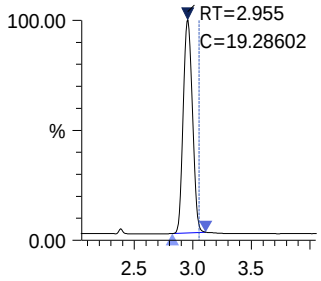
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE8	6/2/2020 4:37:02 PM	324944	19.28602	20200602_016	2.955	25.0000	1.0000	11
Sodium Perchlorate-18O4_IS	PERCHLORATE8	6/2/2020 4:37:02 PM	131734	1.00000	20200602_016	2.953	25.0000	1.0000	11

Perchlorate

Conc 19.28602

Area 324944

Q 99.00>83.00 (-) 5.85e4

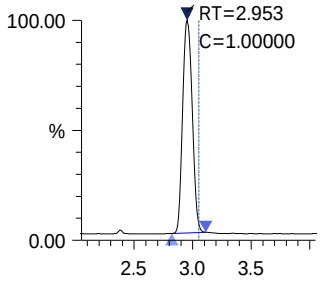


Sodium Perchlorate-18O4_IS

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

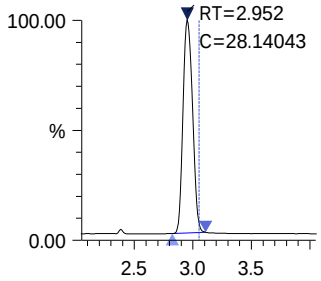
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE9	6/2/2020 4:44:57 PM	469066	28.14043	20200602_017	2.952	25.0000	1.0000	12
Sodium Perchlorate-18O4_IS	PERCHLORATE9	6/2/2020 4:44:57 PM	130327	1.00000	20200602_017	2.953	25.0000	1.0000	12

Perchlorate

Conc 28.14043

Area 469066

Q 99.00>83.00 (-) 8.16e4

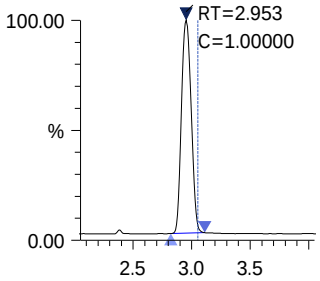


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 130327

ISTD 107.00>89.00 (-) 2.28e4



ALS Group Houston

PERCHLORATE10

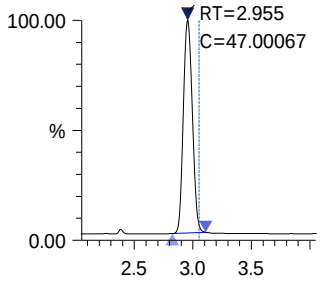
Date acquired: 6/2/2020 4:52:49 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200602\20200602_018.lcd
Vial: 13 | Inj. Volume: 25.0000uL | Tray: 1

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

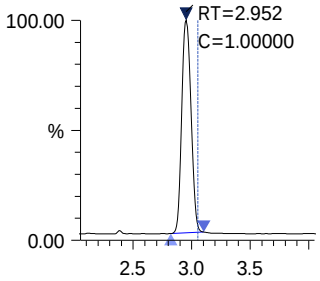
Q 99.00>83.00 (-) 1.36e5



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 122661

ISTD 107.00>89.00 (-) 2.25e4



ALS Group Houston

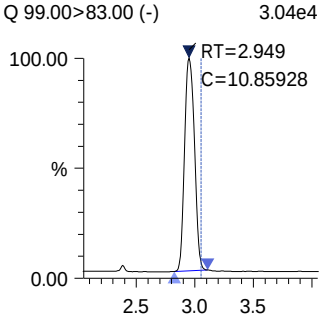
PERCHLORATEICV

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

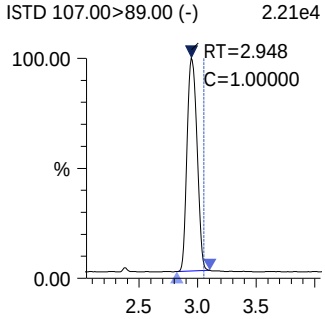
Perchlorate

Conc 10.85928
Area 180334



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 129839



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

20200622

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		20200622_001	Perchlorate6850b.lcm	1x	☒	
	null		20200622_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_003	Perchlorate6850b.lcm	1x	☒	
	LODV		20200622_004	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_005	Perchlorate6850b.lcm	1x	☒	3100807-04
	EQ2000238-01		20200622_007	Perchlorate6850b.lcm	1x	☒	
	ICS		20200622_006	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-02		20200622_008	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-03		20200622_009	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-04		20200622_010	Perchlorate6850b.lcm	1x	☒	
	EQ2000238-05		20200622_011	Perchlorate6850b.lcm	1x	☒	
	E2000538-005		20200622_012	Perchlorate6850b.lcm	1x	☒	
	E2000511-001		20200622_013	Perchlorate6850b.lcm	1x	☒	
	E2000510-001		20200622_014	Perchlorate6850b.lcm	1x	☒	
	E2000535-001		20200622_015	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_016	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000511-001		20200622_017	Perchlorate6850b.lcm	1x	☒	
	E2000511-001X2		20200622_018	Perchlorate6850b.lcm	2x	☒	
	E2000535-002		20200622_019	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_020	Perchlorate6850b.lcm	1x	☒	
	E2000511-001X5		20200622_021	Perchlorate6850b.lcm	5x	☒	
	E2000535-002X1000		20200622_022	Perchlorate6850b.lcm	1000x	☒	
	E2000535-003		20200622_023	Perchlorate6850b.lcm	1x	☒	
	E2000538-001		20200622_024	Perchlorate6850b.lcm	1x	☒	
	E2000538-002		20200622_025	Perchlorate6850b.lcm	1x	☒	
	E2000538-003		20200622_026	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_027	Perchlorate6850b.lcm	1x	☒	3100807-04
	E2000538-001		20200622_028	Perchlorate6850b.lcm	1000x	☒	
	E2000538-002		20200622_029	Perchlorate6850b.lcm	100x	☒	
	E2000538-003		20200622_030	Perchlorate6850b.lcm	1000x	☒	
	E2000538-004		20200622_031	Perchlorate6850b.lcm	2000x	☒	
	E2000538-006X50		20200622_032	Perchlorate6850b.lcm	50x	☒	
	E2000538-007		20200622_033	Perchlorate6850b.lcm	1x	☒	
	E2000538-008		20200622_034	Perchlorate6850b.lcm	1x	☒	
	EQ2000239-01		20200622_035	Perchlorate6850b.lcm	1x	☒	
	EQ2000239-02		20200622_036	Perchlorate6850b.lcm	1x	☒	
	E2000538-008X5		20200622_037	Perchlorate6850b.lcm	5x	☒	
	PERCHLORATE7		20200622_038	Perchlorate6850b.lcm	1x	☒	3100807-04
	IB		20200622_039	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_040	Perchlorate6850b.lcm	1x	☒	
	IB		20200622_041	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200622_042	Perchlorate6850b.lcm	1x	☒	3100807-04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060498

Service Request: E2000538
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_005

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.5	0.1279	0.1348	5.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060498

Service Request: E2000538
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_016

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279	0.1377	7.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060498

Service Request: E2000538
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_027

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.7	0.1279	0.1372	7.3	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS20060498

Service Request: E2000538
Date Analyzed: 6/22/20

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

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20200622\20200622_038

Calibration Date: 6/2/20
Calibration ID: EC2000007
Analysis Lot: 684542
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.8	0.1279	0.1381	8.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000538
Project:	HS20060498	**Date Analyzed:**	6/22/20 11:03

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_005	**Lab Code:**	EQ2000254-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-01	159,982	3.02
Method Blank	EQ2000238-01	178,948	3.01
Lab Control Sample	EQ2000238-02	197,036	3.01
Duplicate Lab Control Sample	EQ2000238-03	200,634	3.01
CO1_060920MS	EQ2000238-04	174,832	2.98
CO1_060920DMS	EQ2000238-05	173,812	2.98
CO1_060920	E2000538-005	189,616	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:**	E2000538
Project:	HS20060498	**Date Analyzed:**	6/22/20 12:29

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_016	**Lab Code:**	EQ2000254-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-02	178,331	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:**	E2000538
Project:	HS20060498	**Date Analyzed:**	6/22/20 14:45

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_027	**Lab Code:**	EQ2000254-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-03	184,802	2.96
MW5_060920	E2000538-001	178,124	2.96
18CPTMW08DW_060920	E2000538-002	197,846	3.01
18CPTMW08SW_060920	E2000538-003	181,161	2.96
MW23_060920	E2000538-004	186,720	3.01
MW16_060920	E2000538-006	201,574	3.01
18CPTMW18_060920	E2000538-007	192,586	2.95
CO3_060920	E2000538-008	199,792	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:**	E2000538
Project:	HS20060498	**Date Analyzed:**	6/22/20 16:13

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200622\20200622_038	**Lab Code:**	EQ2000254-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	684542
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	EQ2000254-04	199,949	3.01

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

ALS Group Houston

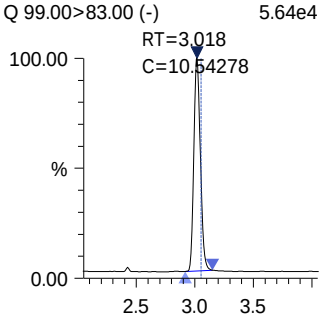
PERCHLORATE7

Date acquired: 6/22/2020 11:03:11 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_005.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	6/22/2020 11:03:11 AM	215723	10.54278	20200622_005	3.018	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/22/2020 11:03:11 AM	159982	1.00000	20200622_005	3.015	25.0000	1.0000	4

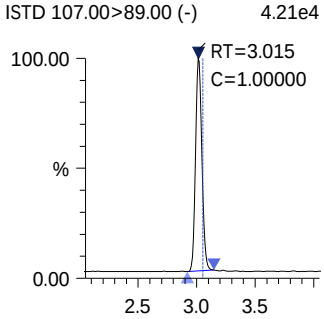
Perchlorate

Conc 10.54278
Area 215723



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 159982



ALS Group Houston

EQ2000238-01

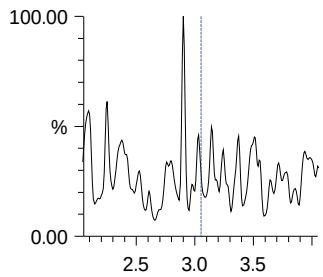
Date acquired: 6/22/2020 11:18:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_007.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000238-01	6/22/2020 11:18:59 AM	----	----	20200622_007	----	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	EQ2000238-01	6/22/2020 11:18:59 AM	178948	1.00000	20200622_007	3.011	25.0000	1.0000	5

Perchlorate

Conc ----
Area ----

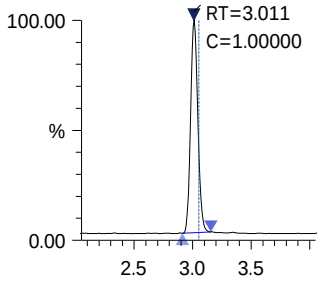
Q 99.00>83.00 (-) 4.46e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178948

ISTD 107.00>89.00 (-) 4.15e4



ALS Group Houston

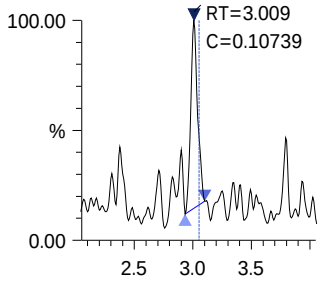
EQ2000238-02

Date acquired: 6/22/2020 11:26:53 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_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	EQ2000238-02	6/22/2020 11:26:53 AM	2706	0.10739	20200622_008	3.009	25.0000	1.0000	6
Sodium Perchlorate-18O4_IS	EQ2000238-02	6/22/2020 11:26:53 AM	197036	1.00000	20200622_008	3.007	25.0000	1.0000	6

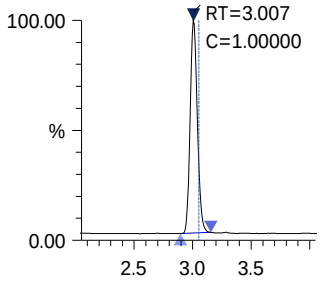
Perchlorate

Conc 0.10739
Area 2706
Q 99.00>83.00 (-) 7.58e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 197036
ISTD 107.00>89.00 (-) 4.60e4



ALS Group Houston

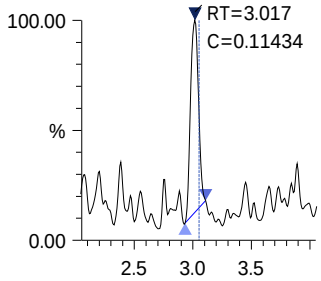
EQ2000238-03

Date acquired: 6/22/2020 11:34:45 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_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	EQ2000238-03	6/22/2020 11:34:45 AM	2934	0.11434	20200622_009	3.017	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	EQ2000238-03	6/22/2020 11:34:45 AM	200634	1.00000	20200622_009	3.009	25.0000	1.0000	7

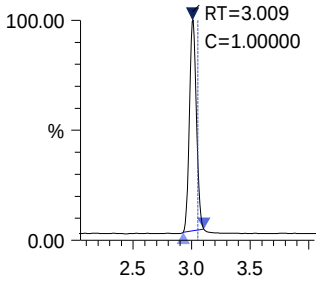
Perchlorate

Conc 0.11434
Area 2934
Q 99.00>83.00 (-) 6.89e2



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 200634
ISTD 107.00>89.00 (-) 4.88e4



ALS Group Houston

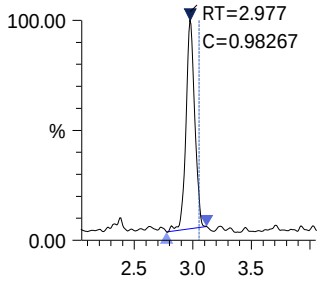
EQ2000238-04

Date acquired: 6/22/2020 11:42:37 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_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	EQ2000238-04	6/22/2020 11:42:37 AM	21974	0.98267	20200622_010	2.977	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	EQ2000238-04	6/22/2020 11:42:37 AM	174832	1.00000	20200622_010	2.975	25.0000	1.0000	8

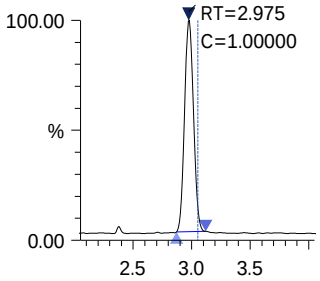
Perchlorate

Conc 0.98267
Area 21974
Q 99.00>83.00 (-) 4.31e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 174832
ISTD 107.00>89.00 (-) 3.35e4



ALS Group Houston

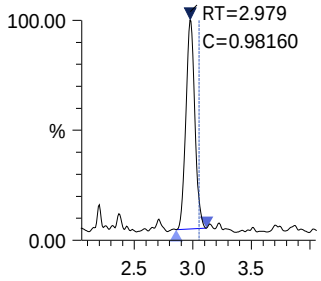
EQ2000238-05

Date acquired: 6/22/2020 11:50:29 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_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	EQ2000238-05	6/22/2020 11:50:29 AM	21822	0.98160	20200622_011	2.979	25.0000	1.0000	9
Sodium Perchlorate-18O4_IS	EQ2000238-05	6/22/2020 11:50:29 AM	173812	1.00000	20200622_011	2.977	25.0000	1.0000	9

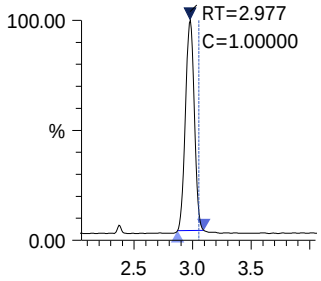
Perchlorate

Conc 0.98160
Area 21822
Q 99.00>83.00 (-) 4.14e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 173812
ISTD 107.00>89.00 (-) 3.37e4



ALS Group Houston

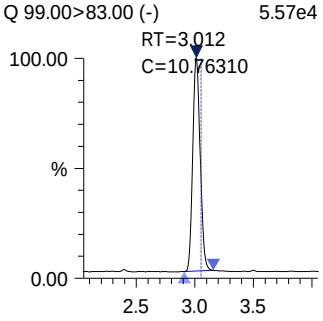
PERCHLORATE7

Date acquired: 6/22/2020 12:29:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200622\20200622_016.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	6/22/2020 12:29:56 PM	245490	10.76310	20200622_016	3.012	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/22/2020 12:29:56 PM	178331	1.00000	20200622_016	3.010	25.0000	1.0000	4

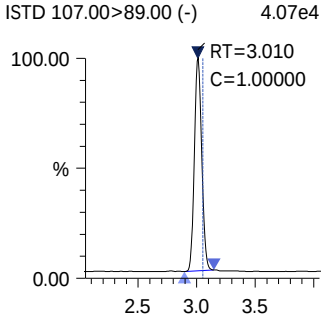
Perchlorate

Conc 10.76310
Area 245490



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178331



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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June 30, 2020

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

Work Order: **HS20060545**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 7 sample(s) on Jun 11, 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: RJ.MODASHIA
RJ Modashia
Project Manager

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060545

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060545-01	MW2_061020	Groundwater		10-Jun-2020 07:40	11-Jun-2020 09:35	☐
HS20060545-02	MW2_061020_a	Groundwater		10-Jun-2020 07:40	11-Jun-2020 09:35	☐
HS20060545-03	18CPTMW01DW_061020	Groundwater		10-Jun-2020 09:05	11-Jun-2020 09:35	☐
HS20060545-04	18CPTMW01SW_061020	Groundwater		10-Jun-2020 10:15	11-Jun-2020 09:35	☐
HS20060545-05	MW22_061020	Groundwater		10-Jun-2020 11:35	11-Jun-2020 09:35	☐
HS20060545-06	18CPTMW06_061020	Groundwater		10-Jun-2020 12:40	11-Jun-2020 09:35	☐
HS20060545-07	Trip Blank	Water		10-Jun-2020 00:00	11-Jun-2020 09:35	☐

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060545

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: 154567

Sample ID: MW2_061020 (HS20060545-01)

• The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: MW2_061020_a (HS20060545-02)

• High area counts for Naphthalene-d8 and Phenanthrene-d10 , they are not associated with target compound.

• The surrogate recoveries could not be determined due to dilution below the calibration range.

GCMS Volatiles by Method SW8260

Batch ID: R363681

Sample ID: HS20060547-08MS

• MS and MSD are for an unrelated sample

Sample ID: VLCSW-200619

• 1,2,3-Trichlorobenzene exceeded QC limits for LCS. Samples are ND for this compound.

Batch ID: R363690

Sample ID: 18CPTMW01SW_061020 (HS20060545-04)

• Lowest practical dilution for sample HS20060545-04 due to high concentration of non-target compound.

Sample ID: VLCSW-200620

• Hexachlorobutadiene exceeded QC limits for LCS. Samples are ND for this compound.

Metals by Method SW7470

Batch ID: 154667

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

Metals by Method SW6020

Batch ID: 154643

Sample ID: HS20060498-08MS

• MS and MSD are for an unrelated sample

Sample ID: HS20060498-08PDS

• PDS is for an unrelated sample

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_061020
Collection Date: 10-Jun-2020 07:40

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-01
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	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
1,1,1-Trichloroethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
1,1,2,2-Tetrachloroethane	20	U	10	20	20	UG/L	20	19-Jun-2020 22:03
1,1,2-Trichloroethane	**14**	J	**6.0**	**20**	**20**	**UG/L**	20	19-Jun-2020 22:03
1,1-Dichloroethane	**43**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03
1,1-Dichloroethene	**930**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03
1,1-Dichloropropene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
1,2,3-Trichlorobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
1,2,3-Trichloropropane	20	U	10	20	20	UG/L	20	19-Jun-2020 22:03
1,2,4-Trichlorobenzene	20	U	10	20	20	UG/L	20	19-Jun-2020 22:03
1,2,4-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
1,2-Dibromo-3-chloropropane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
1,2-Dibromoethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
1,2-Dichlorobenzene	20	U	10	20	20	UG/L	20	19-Jun-2020 22:03
1,2-Dichloroethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
1,2-Dichloropropane	20	U	10	20	20	UG/L	20	19-Jun-2020 22:03
1,3,5-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
1,3-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
1,3-Dichloropropane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
1,4-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
2,2-Dichloropropane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
2-Butanone	20	U	10	20	40	UG/L	20	19-Jun-2020 22:03
2-Chlorotoluene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
2-Hexanone	40	U	20	40	40	UG/L	20	19-Jun-2020 22:03
4-Chlorotoluene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
4-Isopropyltoluene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
4-Methyl-2-pentanone	40	U	14	40	40	UG/L	20	19-Jun-2020 22:03
Acetone	20	U	8.0	20	40	UG/L	20	19-Jun-2020 22:03
Benzene	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
Bromobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
Bromochloromethane	**190**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03
Bromodichloromethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
Bromoform	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
Bromomethane	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
Carbon disulfide	20	U	12	20	40	UG/L	20	19-Jun-2020 22:03
Carbon tetrachloride	20	U	10	20	20	UG/L	20	19-Jun-2020 22:03
Chlorobenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Chloroethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Chloroform	**150**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_061020
Collection Date: 10-Jun-2020 07:40

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-01
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	19-Jun-2020 22:03
cis-1,2-Dichloroethene	**76,000**		**400**	**1000**	**2000**	**UG/L**	2000	20-Jun-2020 16:37
cis-1,3-Dichloropropene	10	U	2.0	10	20	UG/L	20	19-Jun-2020 22:03
Dibromochloromethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Dibromomethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
Dichlorodifluoromethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Ethylbenzene	**29**		**6.0**	**20**	**20**	**UG/L**	20	19-Jun-2020 22:03
Hexachlorobutadiene	20	U	20	20	20	UG/L	20	19-Jun-2020 22:03
Isopropylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
m,p-Xylene	**15**	J	**10**	**20**	**40**	**UG/L**	20	19-Jun-2020 22:03
Methylene chloride	**290,000**		**800**	**2000**	**4000**	**UG/L**	2000	20-Jun-2020 16:37
n-Butylbenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:03
n-Propylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Naphthalene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
o-Xylene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
sec-Butylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Styrene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
tert-Butylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Tetrachloroethene	**33**		**6.0**	**20**	**20**	**UG/L**	20	19-Jun-2020 22:03
Toluene	**28**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03
trans-1,2-Dichloroethene	**200**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03
trans-1,3-Dichloropropene	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:03
Trichloroethene	**1,100**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03
Trichlorofluoromethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:03
Vinyl chloride	**45**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:03
Surr: 1,2-Dichloroethane-d4	*107*			**0**	*81-118*	*%REC*	*20*	*19-Jun-2020 22:03*
Surr: 1,2-Dichloroethane-d4	*109*			**0**	*81-118*	*%REC*	*2000*	*20-Jun-2020 16:37*
Surr: 4-Bromofluorobenzene	*104*			**0**	*85-114*	*%REC*	*20*	*19-Jun-2020 22:03*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*2000*	*20-Jun-2020 16:37*
Surr: Dibromofluoromethane	*103*			**0**	*80-119*	*%REC*	*20*	*19-Jun-2020 22:03*
Surr: Dibromofluoromethane	*106*			**0**	*80-119*	*%REC*	*2000*	*20-Jun-2020 16:37*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*20*	*19-Jun-2020 22:03*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*2000*	*20-Jun-2020 16:37*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**35**		**1.0**	**1.0**	**1.0**	**ug/L**	100	27-Jun-2020 15:48
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*100*	*27-Jun-2020 15:48*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*100*	*27-Jun-2020 15:48*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*100*	*27-Jun-2020 15:48*

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_061020
Collection Date: 10-Jun-2020 07:40

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: MW2_061020_a Lab ID:HS20060545-02
Collection Date: 10-Jun-2020 07:40 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	19-Jun-2020 22:26
1,1,1-Trichloroethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
1,1,2,2-Tetrachloroethane	20	U	10	20	20	UG/L	20	19-Jun-2020 22:26
1,1,2-Trichloroethane	**16**	J	**6.0**	**20**	**20**	**UG/L**	20	19-Jun-2020 22:26
1,1-Dichloroethane	**49**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26
1,1-Dichloroethene	**1,000**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26
1,1-Dichloropropene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
1,2,3-Trichlorobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
1,2,3-Trichloropropane	20	U	10	20	20	UG/L	20	19-Jun-2020 22:26
1,2,4-Trichlorobenzene	20	U	10	20	20	UG/L	20	19-Jun-2020 22:26
1,2,4-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
1,2-Dibromo-3-chloropropane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
1,2-Dibromoethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
1,2-Dichlorobenzene	20	U	10	20	20	UG/L	20	19-Jun-2020 22:26
1,2-Dichloroethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
1,2-Dichloropropane	20	U	10	20	20	UG/L	20	19-Jun-2020 22:26
1,3,5-Trimethylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
1,3-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
1,3-Dichloropropane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
1,4-Dichlorobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
2,2-Dichloropropane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
2-Butanone	20	U	10	20	40	UG/L	20	19-Jun-2020 22:26
2-Chlorotoluene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
2-Hexanone	40	U	20	40	40	UG/L	20	19-Jun-2020 22:26
4-Chlorotoluene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
4-Isopropyltoluene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
4-Methyl-2-pentanone	40	U	14	40	40	UG/L	20	19-Jun-2020 22:26
Acetone	20	U	8.0	20	40	UG/L	20	19-Jun-2020 22:26
Benzene	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
Bromobenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
Bromochloromethane	**100**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26
Bromodichloromethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
Bromoform	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
Bromomethane	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
Carbon disulfide	20	U	12	20	40	UG/L	20	19-Jun-2020 22:26
Carbon tetrachloride	20	U	10	20	20	UG/L	20	19-Jun-2020 22:26
Chlorobenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Chloroethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Chloroform	**180**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_061020_a
Collection Date: 10-Jun-2020 07:40

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-02
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	19-Jun-2020 22:26
cis-1,2-Dichloroethene	**75,000**		**400**	**1000**	**2000**	**UG/L**	2000	20-Jun-2020 17:01
cis-1,3-Dichloropropene	10	U	2.0	10	20	UG/L	20	19-Jun-2020 22:26
Dibromochloromethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Dibromomethane	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
Dichlorodifluoromethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Ethylbenzene	**34**		**6.0**	**20**	**20**	**UG/L**	20	19-Jun-2020 22:26
Hexachlorobutadiene	20	U	20	20	20	UG/L	20	19-Jun-2020 22:26
Isopropylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
m,p-Xylene	**18**	J	**10**	**20**	**40**	**UG/L**	20	19-Jun-2020 22:26
Methylene chloride	**280,000**		**800**	**2000**	**4000**	**UG/L**	2000	20-Jun-2020 17:01
n-Butylbenzene	20	U	8.0	20	20	UG/L	20	19-Jun-2020 22:26
n-Propylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Naphthalene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
o-Xylene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
sec-Butylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Styrene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
tert-Butylbenzene	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Tetrachloroethene	**40**		**6.0**	**20**	**20**	**UG/L**	20	19-Jun-2020 22:26
Toluene	**30**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26
trans-1,2-Dichloroethene	**230**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26
trans-1,3-Dichloropropene	10	U	4.0	10	20	UG/L	20	19-Jun-2020 22:26
Trichloroethene	**1,200**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26
Trichlorofluoromethane	20	U	6.0	20	20	UG/L	20	19-Jun-2020 22:26
Vinyl chloride	**46**		**4.0**	**10**	**20**	**UG/L**	20	19-Jun-2020 22:26
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*20*	*19-Jun-2020 22:26*
Surr: 1,2-Dichloroethane-d4	*104*			**0**	*81-118*	*%REC*	*2000*	*20-Jun-2020 17:01*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*20*	*19-Jun-2020 22:26*
Surr: 4-Bromofluorobenzene	*97.8*			**0**	*85-114*	*%REC*	*2000*	*20-Jun-2020 17:01*
Surr: Dibromofluoromethane	*115*			**0**	*80-119*	*%REC*	*20*	*19-Jun-2020 22:26*
Surr: Dibromofluoromethane	*104*			**0**	*80-119*	*%REC*	*2000*	*20-Jun-2020 17:01*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*20*	*19-Jun-2020 22:26*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*2000*	*20-Jun-2020 17:01*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**69**		**2.0**	**2.0**	**2.0**	**ug/L**	200	29-Jun-2020 14:12
Surr: 2-Fluorobiphenyl	*0*	*S*		0	*40-140*	*%REC*	*200*	*29-Jun-2020 14:12*
Surr: 4-Terphenyl-d14	*0*	*S*		0	*40-140*	*%REC*	*200*	*29-Jun-2020 14:12*
Surr: Nitrobenzene-d5	*0*	*S*		0	*40-140*	*%REC*	*200*	*29-Jun-2020 14:12*

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_061020_a
Collection Date: 10-Jun-2020 07:40

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: 18CPTMW01DW_061020 Lab ID:HS20060545-03
Collection Date: 10-Jun-2020 09:05 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	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 20:51
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	19-Jun-2020 20:51
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	19-Jun-2020 20:51
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 20:51
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	19-Jun-2020 20:51
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: 18CPTMW01DW_061020 Lab ID:HS20060545-03
Collection Date: 10-Jun-2020 09:05 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	19-Jun-2020 20:51
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 20:51
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 20:51
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:51
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:51
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:51
Surr: 1,2-Dichloroethane-d4	*93.2*			**0**	*81-118*	*%REC*	*1*	*19-Jun-2020 20:51*
Surr: 4-Bromofluorobenzene	*99.3*			**0**	*85-114*	*%REC*	*1*	*19-Jun-2020 20:51*
Surr: Dibromofluoromethane	*93.5*			**0**	*80-119*	*%REC*	*1*	*19-Jun-2020 20:51*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*19-Jun-2020 20:51*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.22**		**0.010**	**0.010**	**0.010**	**ug/L**	1	29-Jun-2020 14:32
Surr: 2-Fluorobiphenyl	*86.0*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 14:32*
Surr: 4-Terphenyl-d14	*104*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 14:32*
Surr: Nitrobenzene-d5	*84.6*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 14:32*

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW01DW_061020
Collection Date: 10-Jun-2020 09:05

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0260**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 14:46
Antimony	**0.000584**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Arsenic	**0.00106**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Barium	**0.315**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:46
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:46
Calcium	**30.6**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 14:46
Chromium	**0.0163**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Cobalt	**0.000613**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Copper	**0.00149**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Iron	**0.812**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:46
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:46
Magnesium	**11.0**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:46
Manganese	**0.0814**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Nickel	**0.00348**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
Potassium	**70.8**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:46
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 14:46
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 14:46
Sodium	**371**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:07
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:46
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:46
Zinc	**0.00358**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:46
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 15:56
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: 18CPTMW01SW_061020 Lab ID:HS20060545-04
Collection Date: 10-Jun-2020 10:15 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	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,1,1-Trichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,1-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
1,1-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,2-Dibromo-3-chloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
1,2-Dibromoethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,2-Dichloroethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
2,2-Dichloropropane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
2-Butanone	5.0	U	2.5	5.0	10	UG/L	5	20-Jun-2020 14:37
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
2-Hexanone	10	U	5.0	10	10	UG/L	5	20-Jun-2020 14:37
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
4-Methyl-2-pentanone	10	U	3.5	10	10	UG/L	5	20-Jun-2020 14:37
Acetone	5.0	U	2.0	5.0	10	UG/L	5	20-Jun-2020 14:37
Benzene	**4.8**	J	**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 14:37
Bromobenzene	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Bromochloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
Bromodichloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
Bromoform	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Bromomethane	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Carbon disulfide	5.0	U	3.0	5.0	10	UG/L	5	20-Jun-2020 14:37
Carbon tetrachloride	5.0	U	2.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Chlorobenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Chloroethane	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Chloroform	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: 18CPTMW01SW_061020 Lab ID:HS20060545-04
Collection Date: 10-Jun-2020 10:15 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
cis-1,2-Dichloroethene	**100**		**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 14:37
cis-1,3-Dichloropropene	2.5	U	0.50	2.5	5.0	UG/L	5	20-Jun-2020 14:37
Dibromochloromethane	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Dibromomethane	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Ethylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Isopropylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
m,p-Xylene	5.0	U	2.5	5.0	10	UG/L	5	20-Jun-2020 14:37
Methylene chloride	5.0	U	2.0	5.0	10	UG/L	5	20-Jun-2020 14:37
n-Butylbenzene	5.0	U	2.0	5.0	5.0	UG/L	5	20-Jun-2020 14:37
n-Propylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Naphthalene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
o-Xylene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Styrene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Tetrachloroethene	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Toluene	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
trans-1,2-Dichloroethene	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
trans-1,3-Dichloropropene	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
Trichloroethene	**72**		**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 14:37
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	UG/L	5	20-Jun-2020 14:37
Vinyl chloride	2.5	U	1.0	2.5	5.0	UG/L	5	20-Jun-2020 14:37
Surr: 1,2-Dichloroethane-d4	*106*			**0**	*81-118*	*%REC*	*5*	*20-Jun-2020 14:37*
Surr: 4-Bromofluorobenzene	*99.7*			**0**	*85-114*	*%REC*	*5*	*20-Jun-2020 14:37*
Surr: Dibromofluoromethane	*104*			**0**	*80-119*	*%REC*	*5*	*20-Jun-2020 14:37*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*5*	*20-Jun-2020 14:37*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.23**		**0.010**	**0.010**	**0.010**	**ug/L**	1	29-Jun-2020 14:51
Surr: 2-Fluorobiphenyl	*78.4*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 14:51*
Surr: 4-Terphenyl-d14	*98.2*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 14:51*
Surr: Nitrobenzene-d5	*79.4*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 14:51*

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW01SW_061020
Collection Date: 10-Jun-2020 10:15

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0251**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 14:54
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 14:54
Arsenic	**0.00682**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:54
Barium	**0.884**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:54
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:54
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:54
Calcium	**27.1**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 14:54
Chromium	**0.00436**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:54
Cobalt	**0.000245**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:54
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 14:54
Iron	**40.4**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:54
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:54
Magnesium	**17.8**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:54
Manganese	**0.485**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:54
Nickel	**0.000856**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 14:54
Potassium	**12.5**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:54
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 14:54
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 14:54
Sodium	**92.0**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:54
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:54
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:54
Zinc	**0.00503**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:54
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 15:58
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: MW22_061020 Lab ID:HS20060545-05
Collection Date: 10-Jun-2020 11:35 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	20-Jun-2020 01:38
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,2-Dichloroethane	**5.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 01:38
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 01:38
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 01:38
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 01:38
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 01:38
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 01:38
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Chloroform	**3.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 01:38

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: MW22_061020 Lab ID:HS20060545-05
Collection Date: 10-Jun-2020 11:35 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	20-Jun-2020 01:38
cis-1,2-Dichloroethene	**4.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 01:38
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 01:38
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 01:38
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 01:38
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:38
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Tetrachloroethene	**0.65**	J	**0.30**	**1.0**	**1.0**	**UG/L**	1	20-Jun-2020 01:38
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
Trichloroethene	**400**		**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 02:02
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:38
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:38
Surr: 1,2-Dichloroethane-d4	*103*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 01:38*
Surr: 1,2-Dichloroethane-d4	*111*			**0**	*81-118*	*%REC*	*5*	*20-Jun-2020 02:02*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 01:38*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*5*	*20-Jun-2020 02:02*
Surr: Dibromofluoromethane	*102*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 01:38*
Surr: Dibromofluoromethane	*109*			**0**	*80-119*	*%REC*	*5*	*20-Jun-2020 02:02*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 01:38*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*5*	*20-Jun-2020 02:02*

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW22_061020
Collection Date: 10-Jun-2020 11:35

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0119**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 14:57
Antimony	**0.000559**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Arsenic	**0.000521**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Barium	**1.07**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:57
Cadmium	**0.000403**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	23-Jun-2020 14:57
Calcium	**116**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 14:57
Chromium	**0.115**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Cobalt	**0.0105**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Copper	**0.00297**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Iron	**1.15**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:57
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:57
Magnesium	**34.4**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:57
Manganese	**0.273**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Nickel	**0.425**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
Potassium	**1.90**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 14:57
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 14:57
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 14:57
Sodium	**346**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:09
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 14:57
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 14:57
Zinc	**0.00297**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 14:57
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:00
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: 18CPTMW06_061020 Lab ID:HS20060545-06
Collection Date: 10-Jun-2020 12:40 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	19-Jun-2020 21:15
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 21:15
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	19-Jun-2020 21:15
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	19-Jun-2020 21:15
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 21:15
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	19-Jun-2020 21:15
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15

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

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ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW06_061020
Collection Date: 10-Jun-2020 12:40

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-06
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	19-Jun-2020 21:15
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	19-Jun-2020 21:15
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 21:15
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 21:15
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:15
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
Trichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	19-Jun-2020 21:15
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:15
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:15
Surr: 1,2-Dichloroethane-d4	*95.0*			**0**	*81-118*	*%REC*	*1*	*19-Jun-2020 21:15*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*19-Jun-2020 21:15*
Surr: Dibromofluoromethane	*97.6*			**0**	*80-119*	*%REC*	*1*	*19-Jun-2020 21:15*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*19-Jun-2020 21:15*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.19**		**0.010**	**0.010**	**0.010**	**ug/L**	1	29-Jun-2020 15:11
Surr: 2-Fluorobiphenyl	*68.8*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 15:11*
Surr: 4-Terphenyl-d14	*80.4*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 15:11*
Surr: Nitrobenzene-d5	*69.9*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 15:11*

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

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ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW06_061020
Collection Date: 10-Jun-2020 12:40

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0334**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:02
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:02
Arsenic	**0.00577**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:02
Barium	**1.79**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	23-Jun-2020 17:12
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:02
Cadmium	**0.000302**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	23-Jun-2020 16:02
Calcium	**157**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:02
Chromium	**0.0182**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:02
Cobalt	**0.0140**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:02
Copper	**0.00101**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:02
Iron	**19.4**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:02
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:02
Magnesium	**31.0**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:02
Manganese	**0.915**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:02
Nickel	**0.00850**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:02
Potassium	**57.3**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:02
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:02
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:02
Sodium	**152**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:02
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:02
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:02
Zinc	**0.0152**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:02
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:02
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

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ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP 18 24 WorkOrder:HS20060545
Sample ID: Trip Blank Lab ID:HS20060545-07
Collection Date: 10-Jun-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-Jun-2020 20:27
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 20:27
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	19-Jun-2020 20:27
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	19-Jun-2020 20:27
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 20:27
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	19-Jun-2020 20:27
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27

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

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ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 10-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060545
Lab ID:HS20060545-07
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-Jun-2020 20:27
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 20:27
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 20:27
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 20:27
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 20:27
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 20:27
Surr: 1,2-Dichloroethane-d4	*103*			**0**	*81-118*	*%REC*	*1*	*19-Jun-2020 20:27*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*19-Jun-2020 20:27*
Surr: Dibromofluoromethane	*105*			**0**	*80-119*	*%REC*	*1*	*19-Jun-2020 20:27*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*19-Jun-2020 20:27*

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

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Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

Batch ID: 154567 **Start Date:** 17 Jun 2020 10:00 **End Date:** 17 Jun 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
HS20060545-01	1	1000 (mL)	1 (mL)	0.001
HS20060545-02	1	1000 (mL)	1 (mL)	0.001
HS20060545-03	1	1000 (mL)	1 (mL)	0.001
HS20060545-04	1	1000 (mL)	1 (mL)	0.001
HS20060545-06	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154643 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060545-03		10 (mL)	10 (mL)	1
HS20060545-04		10 (mL)	10 (mL)	1
HS20060545-05		10 (mL)	10 (mL)	1
HS20060545-06		10 (mL)	10 (mL)	1

Batch ID: 154667 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060545-03		10 (mL)	10 (mL)	1
HS20060545-04		10 (mL)	10 (mL)	1
HS20060545-05		10 (mL)	10 (mL)	1
HS20060545-06		10 (mL)	10 (mL)	1

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154567 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060545-01	MW2_061020	10 Jun 2020 07:40		17 Jun 2020 13:37	27 Jun 2020 15:48	100
HS20060545-02	MW2_061020_a	10 Jun 2020 07:40		17 Jun 2020 13:37	29 Jun 2020 14:12	200
HS20060545-03	18CPTMW01DW_061020	10 Jun 2020 09:05		17 Jun 2020 13:37	29 Jun 2020 14:32	1
HS20060545-04	18CPTMW01SW_061020	10 Jun 2020 10:15		17 Jun 2020 13:37	29 Jun 2020 14:51	1
HS20060545-06	18CPTMW06_061020	10 Jun 2020 12:40		17 Jun 2020 13:37	29 Jun 2020 15:11	1
Batch ID: 154643 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060545-03	18CPTMW01DW_061020	10 Jun 2020 09:05		19 Jun 2020 14:00	23 Jun 2020 17:07	20
HS20060545-03	18CPTMW01DW_061020	10 Jun 2020 09:05		19 Jun 2020 14:00	23 Jun 2020 14:46	1
HS20060545-04	18CPTMW01SW_061020	10 Jun 2020 10:15		19 Jun 2020 14:00	23 Jun 2020 14:54	1
HS20060545-05	MW22_061020	10 Jun 2020 11:35		19 Jun 2020 14:00	23 Jun 2020 17:09	20
HS20060545-05	MW22_061020	10 Jun 2020 11:35		19 Jun 2020 14:00	23 Jun 2020 14:57	1
HS20060545-06	18CPTMW06_061020	10 Jun 2020 12:40		19 Jun 2020 14:00	23 Jun 2020 17:12	20
HS20060545-06	18CPTMW06_061020	10 Jun 2020 12:40		19 Jun 2020 14:00	23 Jun 2020 16:02	1
Batch ID: 154667 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060545-03	18CPTMW01DW_061020	10 Jun 2020 09:05		19 Jun 2020 10:00	19 Jun 2020 15:56	1
HS20060545-04	18CPTMW01SW_061020	10 Jun 2020 10:15		19 Jun 2020 10:00	19 Jun 2020 15:58	1
HS20060545-05	MW22_061020	10 Jun 2020 11:35		19 Jun 2020 10:00	19 Jun 2020 16:00	1
HS20060545-06	18CPTMW06_061020	10 Jun 2020 12:40		19 Jun 2020 10:00	19 Jun 2020 16:02	1
Batch ID: R363681 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060545-07	Trip Blank	10 Jun 2020 00:00			19 Jun 2020 20:27	1
Batch ID: R363681 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060545-01	MW2_061020	10 Jun 2020 07:40			19 Jun 2020 22:03	20
HS20060545-02	MW2_061020_a	10 Jun 2020 07:40			19 Jun 2020 22:26	20
HS20060545-03	18CPTMW01DW_061020	10 Jun 2020 09:05			19 Jun 2020 20:51	1
HS20060545-05	MW22_061020	10 Jun 2020 11:35			20 Jun 2020 02:02	5
HS20060545-05	MW22_061020	10 Jun 2020 11:35			20 Jun 2020 01:38	1
HS20060545-06	18CPTMW06_061020	10 Jun 2020 12:40			19 Jun 2020 21:15	1
Batch ID: R363690 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060545-01	MW2_061020	10 Jun 2020 07:40			20 Jun 2020 16:37	2000
HS20060545-02	MW2_061020_a	10 Jun 2020 07:40			20 Jun 2020 17:01	2000
HS20060545-04	18CPTMW01SW_061020	10 Jun 2020 10:15			20 Jun 2020 14:37	5

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R364087 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060545-01	MW2_061020	10 Jun 2020 07:40			29 Jun 2020 10:16	1
HS20060545-02	MW2_061020_a	10 Jun 2020 07:40			29 Jun 2020 10:16	1
HS20060545-03	18CPTMW01DW_061020	10 Jun 2020 09:05			29 Jun 2020 10:16	1
HS20060545-04	18CPTMW01SW_061020	10 Jun 2020 10:15			29 Jun 2020 10:16	1
HS20060545-05	MW22_061020	10 Jun 2020 11:35			29 Jun 2020 10:16	1
HS20060545-06	18CPTMW06_061020	10 Jun 2020 12:40			29 Jun 2020 10:16	1

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:17**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631768** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.01444	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:11**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631766** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1015	0.0100	0.1	0	102	84 - 117				
Antimony	0.04728	0.00500	0.05	0	94.6	85 - 117				
Arsenic	0.04981	0.00500	0.05	0	99.6	84 - 116				
Barium	0.04994	0.00500	0.05	0	99.9	86 - 114				
Beryllium	0.04585	0.00200	0.05	0	91.7	83 - 121				
Cadmium	0.05017	0.00200	0.05	0	100	87 - 115				
Calcium	4.661	0.500	5	0	93.2	87 - 118				
Chromium	0.04826	0.00500	0.05	0	96.5	85 - 116				
Cobalt	0.04736	0.00500	0.05	0	94.7	86 - 115				
Copper	0.04996	0.00500	0.05	0	99.9	85 - 118				
Iron	4.755	0.200	5	0	95.1	87 - 118				
Lead	0.04742	0.00500	0.05	0	94.8	88 - 115				
Magnesium	4.798	0.200	5	0	96.0	83 - 118				
Manganese	0.04969	0.00500	0.05	0	99.4	87 - 115				
Nickel	0.04892	0.00500	0.05	0	97.8	85 - 117				
Potassium	4.943	0.200	5	0	98.9	87 - 115				
Selenium	0.05066	0.00500	0.05	0	101	80 - 120				
Silver	0.05015	0.00500	0.05	0	100	85 - 116				
Sodium	4.799	0.200	5	0	96.0	85 - 117				
Thallium	0.04521	0.00200	0.05	0	90.4	82 - 116				
Vanadium	0.04764	0.00500	0.05	0	95.3	86 - 115				
Zinc	0.05144	0.00500	0.05	0	103	83 - 119				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:25**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631771** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1005	0.0100	0.1	0.01494	85.6	84 - 117				
Antimony	0.04623	0.00500	0.05	0.000146	92.2	85 - 117				
Arsenic	0.04858	0.00500	0.05	0.001705	93.7	84 - 116				
Barium	1.182	0.00500	0.05	1.246	-128	86 - 114				SO
Beryllium	0.04288	0.00200	0.05	0.000021	85.7	83 - 121				
Cadmium	0.04562	0.00200	0.05	0.000129	91.0	87 - 115				
Calcium	45.9	0.500	5	44.32	31.8	87 - 118				SO
Chromium	0.04607	0.00500	0.05	0.000391	91.4	85 - 116				
Cobalt	0.04474	0.00500	0.05	0.000124	89.2	86 - 115				
Copper	0.04601	0.00500	0.05	0.000742	90.5	85 - 118				
Iron	68.61	0.200	5	68.38	4.67	87 - 118				SO
Lead	0.04545	0.00500	0.05	0.000052	90.8	88 - 115				
Magnesium	27.58	0.200	5	24.18	67.9	83 - 118				SO
Manganese	1.197	0.00500	0.05	1.223	-51.8	87 - 115				SO
Nickel	0.04623	0.00500	0.05	0.000426	91.6	85 - 117				
Selenium	0.04772	0.00500	0.05	-0.00002	95.5	80 - 120				
Silver	0.04538	0.00500	0.05	0.000008	90.7	85 - 116				
Sodium	142.4	0.200	5	143.5	-22.6	85 - 117				SO
Thallium	0.0425	0.00200	0.05	-0.000005	85.0	82 - 116				
Vanadium	0.04535	0.00500	0.05	-0.001238	93.2	86 - 115				
Zinc	0.05116	0.00500	0.05	0.006271	89.8	83 - 119				

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 14:49**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631885** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Potassium	7.851	0.200	5	3.206	92.9	87 - 115				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060498-08MSD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:27**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631772** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1026	0.0100	0.1	0.01494	87.6	84 - 117	0.1005	2	20	
Antimony	0.04773	0.00500	0.05	0.000146	95.2	85 - 117	0.04623	3.2	20	
Arsenic	0.05012	0.00500	0.05	0.001705	96.8	84 - 116	0.04858	3.13	20	
Barium	1.21	0.00500	0.05	1.246	-70.5	86 - 114	1.182	2.4	20	SO
Beryllium	0.04311	0.00200	0.05	0.000021	86.2	83 - 121	0.04288	0.551	20	
Cadmium	0.04831	0.00200	0.05	0.000129	96.4	87 - 115	0.04562	5.74	20	
Calcium	47.19	0.500	5	44.32	57.5	87 - 118	45.9	2.76	20	SO
Chromium	0.04751	0.00500	0.05	0.000391	94.2	85 - 116	0.04607	3.09	20	
Cobalt	0.0458	0.00500	0.05	0.000124	91.4	86 - 115	0.04474	2.34	20	
Copper	0.04698	0.00500	0.05	0.000742	92.5	85 - 118	0.04601	2.09	20	
Iron	70.93	0.200	5	68.38	51.1	87 - 118	68.61	3.33	20	SO
Lead	0.04948	0.00500	0.05	0.000052	98.8	88 - 115	0.04545	8.48	20	
Magnesium	28.33	0.200	5	24.18	83.0	83 - 118	27.58	2.69	20	SO
Manganese	1.223	0.00500	0.05	1.223	0.370	87 - 115	1.197	2.16	20	SO
Nickel	0.04705	0.00500	0.05	0.000426	93.3	85 - 117	0.04623	1.76	20	
Potassium	7.723	0.200	5	3.206	90.3	87 - 115	7.551	2.25	20	
Selenium	0.0485	0.00500	0.05	-0.00002	97.0	80 - 120	0.04772	1.6	20	
Silver	0.04658	0.00500	0.05	0.000008	93.1	85 - 116	0.04538	2.61	20	
Sodium	146.4	0.200	5	143.5	57.2	85 - 117	142.4	2.76	20	SO
Thallium	0.04759	0.00200	0.05	-0.000005	95.2	82 - 116	0.0425	11.3	20	
Vanadium	0.04655	0.00500	0.05	-0.001238	95.6	86 - 115	0.04535	2.63	20	
Zinc	0.0528	0.00500	0.05	0.006271	93.1	83 - 119	0.05116	3.15	20	

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060498-08PDS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:30**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631773** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1148	0.0100	0.1	0.01494	99.8	80 - 120				
Antimony	0.09919	0.00500	0.1	0.000146	99.0	80 - 120				
Arsenic	0.113	0.00500	0.1	0.001705	111	80 - 120				
Barium	1.204	0.00500	0.1	1.246	-41.6	80 - 120				SO
Beryllium	0.0962	0.00200	0.1	0.000021	96.2	80 - 120				
Cadmium	0.106	0.00200	0.1	0.000129	106	80 - 120				
Calcium	51.24	0.500	10	44.32	69.3	80 - 120				SO
Chromium	0.1086	0.00500	0.1	0.000391	108	80 - 120				
Cobalt	0.106	0.00500	0.1	0.000124	106	80 - 120				
Copper	0.1089	0.00500	0.1	0.000742	108	80 - 120				
Iron	73.82	0.200	10	68.38	54.4	80 - 120				SO
Lead	0.1057	0.00500	0.1	0.000052	106	80 - 120				
Magnesium	32.8	0.200	10	24.18	86.2	80 - 120				
Manganese	1.229	0.00500	0.1	1.223	5.63	80 - 120				SO
Nickel	0.109	0.00500	0.1	0.000426	109	80 - 120				
Potassium	13.74	0.200	10	3.206	105	80 - 120				
Selenium	0.1125	0.00500	0.1	-0.00002	113	80 - 120				
Silver	0.1003	0.00500	0.1	0.000008	100	80 - 120				
Sodium	144.2	0.200	10	143.5	7.08	80 - 120				SO
Thallium	0.1096	0.00200	0.1	-0.000005	110	80 - 120				
Vanadium	0.11	0.00500	0.1	-0.001238	111	80 - 120				
Zinc	0.1178	0.00500	0.1	0.006271	111	80 - 120				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060498-08SD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:22**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631770** PrepDate: **19-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.02193	0.0500					0.01494	0	10	J
Antimony	0.00250	0.0250					0.000146	0	10	U
Arsenic	0.00250	0.0250					0.001705	0	10	U
Barium	1.206	0.0250					1.246	3.18	10	
Beryllium	0.00250	0.0100					0.000021	0	10	U
Cadmium	0.00250	0.0100					0.000129	0	10	U
Calcium	43.81	2.50					44.32	1.14	10	
Chromium	0.00250	0.0250					0.000391	0	10	U
Cobalt	0.00250	0.0250					0.000124	0	10	U
Copper	0.0125	0.0250					0.000742	0	10	U
Iron	70.45	1.00					68.38	3.04	10	
Lead	0.00500	0.0250					0.000052	0	10	U
Magnesium	24.9	1.00					24.18	2.98	10	
Manganese	1.246	0.0250					1.223	1.88	10	
Nickel	0.00500	0.0250					0.000426	0	10	U
Potassium	3.055	1.00					3.206	4.72	10	
Selenium	0.0125	0.0250					-0.00002	0	10	U
Silver	0.00250	0.0250					0.000008	0	10	U
Sodium	146.1	1.00					143.5	1.83	10	
Thallium	0.00250	0.0100					-0.000005	0	10	U
Vanadium	0.00500	0.0250					-0.001238	0	10	U
Zinc	0.0125	0.0250					0.006271	0	10	U

The following samples were analyzed in this batch: HS20060545-03 HS20060545-04 HS20060545-05 HS20060545-06

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154667 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:43**
Client ID: Run ID: **HG03_363622** SeqNo: **5627969** PrepDate: **19-Jun-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-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:45**
Client ID: Run ID: **HG03_363622** SeqNo: **5627970** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00496	0.000200	0.005	0	99.2	82 - 119				

MS Sample ID: **HS20060498-07MS** Units: **mg/L** Analysis Date: **19-Jun-2020 15:48**
Client ID: Run ID: **HG03_363622** SeqNo: **5627972** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00516	0.000200	0.005	0.00001600	103	82 - 119				

MSD Sample ID: **HS20060498-07MSD** Units: **mg/L** Analysis Date: **19-Jun-2020 15:50**
Client ID: Run ID: **HG03_363622** SeqNo: **5627973** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	0.00001600	102	82 - 119	0.005160	0.778	20	

The following samples were analyzed in this batch: HS20060545-03 HS20060545-04 HS20060545-05 HS20060545-06

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: 154567 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 11:33**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640909** PrepDate: **17-Jun-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	*0.07389*	*0*	*0.08*	*0*	*92.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0807*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07132*	*0*	*0.08*	*0*	*89.2*	*40 - 140*				

LCS Sample ID: **LCS-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 11:53**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640910** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08076	0.010	0.08	0	101	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08048*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08046*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08358*	*0*	*0.08*	*0*	*104*	*40 - 140*				

LCSD Sample ID: **LCSD-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 12:12**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640911** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08746	0.010	0.08	0	109	40 - 140	0.08076	7.96	20	
Surr: 2-Fluorobiphenyl	*0.08039*	*0*	*0.08*	*0*	*100*	*40 - 140*	*0.08048*	*0.109*	*20*	
Surr: 4-Terphenyl-d14	*0.07969*	*0*	*0.08*	*0*	*99.6*	*40 - 140*	*0.08046*	*0.957*	*20*	
Surr: Nitrobenzene-d5	*0.07613*	*0*	*0.08*	*0*	*95.2*	*40 - 140*	*0.08358*	*9.33*	*20*	

The following samples were analyzed in this batch: HS20060545-01 HS20060545-02 HS20060545-03 HS20060545-04 HS20060545-06

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 20:03**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629692** 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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 20:03**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629692** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	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	*48.42*	*1.0*	*50*	*0*	*96.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.5*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*48.03*	*1.0*	*50*	*0*	*96.1*	*80 - 119*				
Surr: Toluene-d8	*54.19*	*1.0*	*50*	*0*	*108*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 18:51**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629691** 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	20.91	1.0	20	0	105	78 - 124				
1,1,1-Trichloroethane	20.99	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	20.63	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	21.14	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	20.36	1.0	20	0	102	77 - 125				
1,1-Dichloroethene	20.98	1.0	20	0	105	71 - 131				
1,1-Dichloropropene	20.52	1.0	20	0	103	78 - 125				
1,2,3-Trichlorobenzene	27.99	1.0	20	0	140	69 - 129				S
1,2,3-Trichloropropane	19.8	1.0	20	0	99.0	73 - 122				
1,2,4-Trichlorobenzene	24.94	1.0	20	0	125	69 - 130				
1,2,4-Trimethylbenzene	20.23	1.0	20	0	101	76 - 124				
1,2-Dibromo-3-chloropropane	21.34	1.0	20	0	107	62 - 128				
1,2-Dibromoethane	21.2	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	21.15	1.0	20	0	106	80 - 119				
1,2-Dichloroethane	21.37	1.0	20	0	107	73 - 128				
1,2-Dichloropropane	21.49	1.0	20	0	107	78 - 122				
1,3,5-Trimethylbenzene	20.53	1.0	20	0	103	75 - 124				
1,3-Dichlorobenzene	20.31	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	20.5	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	20.02	1.0	20	0	100	79 - 118				
2,2-Dichloropropane	21.27	1.0	20	0	106	60 - 139				
2-Butanone	39.19	2.0	40	0	98.0	56 - 143				
2-Chlorotoluene	19.65	1.0	20	0	98.2	79 - 122				
2-Hexanone	42.69	2.0	40	0	107	57 - 139				
4-Chlorotoluene	19.86	1.0	20	0	99.3	78 - 122				
4-Isopropyltoluene	20.39	1.0	20	0	102	77 - 127				
4-Methyl-2-pentanone	42.17	2.0	40	0	105	67 - 130				
Acetone	40.16	2.0	40	0	100	39 - 160				
Benzene	21.03	1.0	20	0	105	79 - 120				
Bromobenzene	19.77	1.0	20	0	98.8	80 - 120				
Bromochloromethane	20.21	1.0	20	0	101	78 - 123				
Bromodichloromethane	21.15	1.0	20	0	106	79 - 125				
Bromoform	21.28	1.0	20	0	106	66 - 130				
Bromomethane	22.53	1.0	20	0	113	53 - 141				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 18:51**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629691** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	41.99	2.0	40	0	105	64 - 133				
Carbon tetrachloride	19.8	1.0	20	0	99.0	72 - 136				
Chlorobenzene	20.62	1.0	20	0	103	82 - 118				
Chloroethane	20.12	1.0	20	0	101	60 - 138				
Chloroform	20.83	1.0	20	0	104	79 - 124				
Chloromethane	20.88	1.0	20	0	104	50 - 139				
cis-1,2-Dichloroethene	20.87	1.0	20	0	104	78 - 123				
cis-1,3-Dichloropropene	21.16	1.0	20	0	106	75 - 124				
Dibromochloromethane	21.22	1.0	20	0	106	74 - 126				
Dibromomethane	20.86	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	19.59	1.0	20	0	98.0	32 - 152				
Ethylbenzene	20.42	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	25.04	1.0	20	0	125	66 - 134				
Isopropylbenzene	20.79	1.0	20	0	104	72 - 131				
m,p-Xylene	42.02	2.0	40	0	105	80 - 121				
Methylene chloride	20	2.0	20	0	100	74 - 124				
Naphthalene	25.37	1.0	20	0	127	61 - 128				
n-Butylbenzene	20.17	1.0	20	0	101	75 - 128				
n-Propylbenzene	20.28	1.0	20	0	101	76 - 126				
o-Xylene	20.98	1.0	20	0	105	78 - 122				
sec-Butylbenzene	20.04	1.0	20	0	100	77 - 126				
Styrene	21.28	1.0	20	0	106	78 - 123				
tert-Butylbenzene	20.3	1.0	20	0	102	78 - 124				
Tetrachloroethene	20.66	1.0	20	0	103	74 - 129				
Toluene	21.12	1.0	20	0	106	80 - 121				
trans-1,2-Dichloroethene	21.45	1.0	20	0	107	75 - 124				
trans-1,3-Dichloropropene	21.13	1.0	20	0	106	73 - 127				
Trichloroethene	20.88	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	21.23	1.0	20	0	106	65 - 141				
Vinyl chloride	20.33	1.0	20	0	102	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.72*	*1.0*	*50*	*0*	*107*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.13*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*51.5*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*51.85*	*1.0*	*50*	*0*	*104*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060547-08MS** Units: **UG/L** Analysis Date: **19-Jun-2020 22:50**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629699** 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	19.8	1.0	20	0	99.0	78 - 124				
1,1,1-Trichloroethane	20.75	1.0	20	0	104	74 - 131				
1,1,2,2-Tetrachloroethane	19.32	1.0	20	0	96.6	71 - 121				
1,1,2-Trichloroethane	19.93	1.0	20	0	99.6	80 - 119				
1,1-Dichloroethane	19.39	1.0	20	0	97.0	77 - 125				
1,1-Dichloroethene	21.06	1.0	20	0	105	71 - 131				
1,1-Dichloropropene	20.16	1.0	20	0	101	78 - 125				
1,2,3-Trichlorobenzene	10.03	1.0	20	0	50.1	69 - 129				S
1,2,3-Trichloropropane	18.64	1.0	20	0	93.2	73 - 122				
1,2,4-Trichlorobenzene	11.59	1.0	20	0	58.0	69 - 130				S
1,2,4-Trimethylbenzene	20.7	1.0	20	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	14.75	1.0	20	0	73.8	62 - 128				
1,2-Dibromoethane	19.39	1.0	20	0	96.9	77 - 121				
1,2-Dichlorobenzene	19.6	1.0	20	0	98.0	80 - 119				
1,2-Dichloroethane	19.68	1.0	20	0	98.4	73 - 128				
1,2-Dichloropropane	19.8	1.0	20	0	99.0	78 - 122				
1,3,5-Trimethylbenzene	21.62	1.0	20	0	108	75 - 124				
1,3-Dichlorobenzene	20.04	1.0	20	0	100	80 - 119				
1,3-Dichloropropane	19.74	1.0	20	0	98.7	80 - 119				
1,4-Dichlorobenzene	19.68	1.0	20	0	98.4	79 - 118				
2,2-Dichloropropane	19.01	1.0	20	0	95.1	60 - 139				
2-Butanone	32.03	2.0	40	0	80.1	56 - 143				
2-Chlorotoluene	20.75	1.0	20	0	104	79 - 122				
2-Hexanone	38.48	2.0	40	0	96.2	57 - 139				
4-Chlorotoluene	20.66	1.0	20	0	103	78 - 122				
4-Isopropyltoluene	21.28	1.0	20	0	106	77 - 127				
4-Methyl-2-pentanone	38.7	2.0	40	0	96.7	67 - 130				
Acetone	32.2	2.0	40	0	80.5	39 - 160				
Benzene	20.05	1.0	20	0	100	79 - 120				
Bromobenzene	20.29	1.0	20	0	101	80 - 120				
Bromochloromethane	18.89	1.0	20	0	94.5	78 - 123				
Bromodichloromethane	20.12	1.0	20	0	101	79 - 125				
Bromoform	18.47	1.0	20	0	92.3	66 - 130				
Bromomethane	14.28	1.0	20	0	71.4	53 - 141				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060547-08MS** Units: **UG/L** Analysis Date: **19-Jun-2020 22:50**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629699** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.93	2.0	40	0	99.8	64 - 133				
Carbon tetrachloride	19.97	1.0	20	0	99.8	72 - 136				
Chlorobenzene	20.11	1.0	20	0	101	82 - 118				
Chloroethane	19.07	1.0	20	0	95.3	60 - 138				
Chloroform	19.84	1.0	20	0	99.2	79 - 124				
Chloromethane	24.95	1.0	20	0	125	50 - 139				
cis-1,2-Dichloroethene	26.78	1.0	20	0.8624	130	78 - 123				S
cis-1,3-Dichloropropene	19.6	1.0	20	0	98.0	75 - 124				
Dibromochloromethane	19.64	1.0	20	0	98.2	74 - 126				
Dibromomethane	18.75	1.0	20	0	93.7	79 - 123				
Dichlorodifluoromethane	14.8	1.0	20	0	74.0	32 - 152				
Ethylbenzene	20.46	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	12.91	1.0	20	0	64.5	66 - 134				S
Isopropylbenzene	21.05	1.0	20	0	105	72 - 131				
m,p-Xylene	41.25	2.0	40	0	103	80 - 121				
Methylene chloride	38.53	2.0	20	0	193	74 - 124				S
Naphthalene	11.17	1.0	20	0	55.9	61 - 128				S
n-Butylbenzene	20.91	1.0	20	0	105	75 - 128				
n-Propylbenzene	21.71	1.0	20	0	109	76 - 126				
o-Xylene	20.62	1.0	20	0	103	78 - 122				
sec-Butylbenzene	21.79	1.0	20	0	109	77 - 126				
Styrene	20.5	1.0	20	0	103	78 - 123				
tert-Butylbenzene	22.01	1.0	20	0	110	78 - 124				
Tetrachloroethene	21.13	1.0	20	0	106	74 - 129				
Toluene	20.5	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	20.76	1.0	20	0	104	75 - 124				
trans-1,3-Dichloropropene	19.31	1.0	20	0	96.5	73 - 127				
Trichloroethene	36.65	1.0	20	15.13	108	79 - 123				
Trichlorofluoromethane	20.8	1.0	20	0	104	65 - 141				
Vinyl chloride	18.49	1.0	20	0	92.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.2*	*1.0*	*50*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.95*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*51.94*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*54.01*	*1.0*	*50*	*0*	*108*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060547-08MSD** Units: **UG/L** Analysis Date: **19-Jun-2020 23:14**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629700** 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	19.76	1.0	20	0	98.8	78 - 124	19.8	0.194	20	
1,1,1-Trichloroethane	20.08	1.0	20	0	100	74 - 131	20.75	3.3	20	
1,1,2,2-Tetrachloroethane	19.3	1.0	20	0	96.5	71 - 121	19.32	0.104	20	
1,1,2-Trichloroethane	19.4	1.0	20	0	97.0	80 - 119	19.93	2.66	20	
1,1-Dichloroethane	18.24	1.0	20	0	91.2	77 - 125	19.39	6.12	20	
1,1-Dichloroethene	20	1.0	20	0	100.0	71 - 131	21.06	5.19	20	
1,1-Dichloropropene	20.78	1.0	20	0	104	78 - 125	20.16	3.04	20	
1,2,3-Trichlorobenzene	14.44	1.0	20	0	72.2	69 - 129	10.03	36.1	20	R
1,2,3-Trichloropropane	18.48	1.0	20	0	92.4	73 - 122	18.64	0.867	20	
1,2,4-Trichlorobenzene	14.2	1.0	20	0	71.0	69 - 130	11.59	20.2	20	R
1,2,4-Trimethylbenzene	21.75	1.0	20	0	109	76 - 124	20.7	4.95	20	
1,2-Dibromo-3-chloropropane	14.69	1.0	20	0	73.5	62 - 128	14.75	0.423	20	
1,2-Dibromoethane	19.67	1.0	20	0	98.3	77 - 121	19.39	1.43	20	
1,2-Dichlorobenzene	19.54	1.0	20	0	97.7	80 - 119	19.6	0.336	20	
1,2-Dichloroethane	19.23	1.0	20	0	96.2	73 - 128	19.68	2.31	20	
1,2-Dichloropropane	20.19	1.0	20	0	101	78 - 122	19.8	1.93	20	
1,3,5-Trimethylbenzene	22.55	1.0	20	0	113	75 - 124	21.62	4.2	20	
1,3-Dichlorobenzene	20.43	1.0	20	0	102	80 - 119	20.04	1.94	20	
1,3-Dichloropropane	19.52	1.0	20	0	97.6	80 - 119	19.74	1.12	20	
1,4-Dichlorobenzene	19.78	1.0	20	0	98.9	79 - 118	19.68	0.528	20	
2,2-Dichloropropane	17.5	1.0	20	0	87.5	60 - 139	19.01	8.27	20	
2-Butanone	30.39	2.0	40	0	76.0	56 - 143	32.03	5.25	20	
2-Chlorotoluene	21.24	1.0	20	0	106	79 - 122	20.75	2.34	20	
2-Hexanone	38.78	2.0	40	0	97.0	57 - 139	38.48	0.774	20	
4-Chlorotoluene	21.25	1.0	20	0	106	78 - 122	20.66	2.82	20	
4-Isopropyltoluene	22.96	1.0	20	0	115	77 - 127	21.28	7.59	20	
4-Methyl-2-pentanone	39.14	2.0	40	0	97.8	67 - 130	38.7	1.14	20	
Acetone	29.74	2.0	40	0	74.4	39 - 160	32.2	7.93	20	
Benzene	20.1	1.0	20	0	100	79 - 120	20.05	0.214	20	
Bromobenzene	20.31	1.0	20	0	102	80 - 120	20.29	0.0503	20	
Bromochloromethane	16.94	1.0	20	0	84.7	78 - 123	18.89	10.9	20	
Bromodichloromethane	19.65	1.0	20	0	98.3	79 - 125	20.12	2.34	20	
Bromoform	18.91	1.0	20	0	94.6	66 - 130	18.47	2.4	20	
Bromomethane	15.54	1.0	20	0	77.7	53 - 141	14.28	8.43	20	

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060547-08MSD** Units: **UG/L** Analysis Date: **19-Jun-2020 23:14**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629700** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.93	2.0	40	0	97.3	64 - 133	39.93	2.53	20	
Carbon tetrachloride	21.4	1.0	20	0	107	72 - 136	19.97	6.94	20	
Chlorobenzene	20.14	1.0	20	0	101	82 - 118	20.11	0.15	20	
Chloroethane	18.28	1.0	20	0	91.4	60 - 138	19.07	4.24	20	
Chloroform	18.48	1.0	20	0	92.4	79 - 124	19.84	7.1	20	
Chloromethane	20.37	1.0	20	0	102	50 - 139	24.95	20.2	20	R
cis-1,2-Dichloroethene	21.08	1.0	20	0.8624	101	78 - 123	26.78	23.8	20	R
cis-1,3-Dichloropropene	19.39	1.0	20	0	96.9	75 - 124	19.6	1.11	20	
Dibromochloromethane	19.59	1.0	20	0	98.0	74 - 126	19.64	0.233	20	
Dibromomethane	18.75	1.0	20	0	93.8	79 - 123	18.75	0.0384	20	
Dichlorodifluoromethane	15.03	1.0	20	0	75.2	32 - 152	14.8	1.54	20	
Ethylbenzene	20.89	1.0	20	0	104	79 - 121	20.46	2.07	20	
Hexachlorobutadiene	17.41	1.0	20	0	87.1	66 - 134	12.91	29.7	20	R
Isopropylbenzene	22.36	1.0	20	0	112	72 - 131	21.05	6.04	20	
m,p-Xylene	42.98	2.0	40	0	107	80 - 121	41.25	4.11	20	
Methylene chloride	21.7	2.0	20	0	109	74 - 124	38.53	55.9	20	R
Naphthalene	15.61	1.0	20	0	78.0	61 - 128	11.17	33.1	20	R
n-Butylbenzene	22.93	1.0	20	0	115	75 - 128	20.91	9.2	20	
n-Propylbenzene	22.9	1.0	20	0	115	76 - 126	21.71	5.35	20	
o-Xylene	20.71	1.0	20	0	104	78 - 122	20.62	0.44	20	
sec-Butylbenzene	23.24	1.0	20	0	116	77 - 126	21.79	6.42	20	
Styrene	20.79	1.0	20	0	104	78 - 123	20.5	1.42	20	
tert-Butylbenzene	23.09	1.0	20	0	115	78 - 124	22.01	4.78	20	
Tetrachloroethene	22.33	1.0	20	0	112	74 - 129	21.13	5.53	20	
Toluene	21.11	1.0	20	0	106	80 - 121	20.5	2.95	20	
trans-1,2-Dichloroethene	19.6	1.0	20	0	98.0	75 - 124	20.76	5.74	20	
trans-1,3-Dichloropropene	18.69	1.0	20	0	93.5	73 - 127	19.31	3.24	20	
Trichloroethene	37.34	1.0	20	15.13	111	79 - 123	36.65	1.85	20	
Trichlorofluoromethane	20.24	1.0	20	0	101	65 - 141	20.8	2.72	20	
Vinyl chloride	17.89	1.0	20	0	89.5	58 - 137	18.49	3.27	20	
Surr: 1,2-Dichloroethane-d4	*48.28*	*1.0*	*50*	*0*	*96.6*	*81 - 118*	*51.2*	*5.86*	*20*	
Surr: 4-Bromofluorobenzene	*51.27*	*1.0*	*50*	*0*	*103*	*85 - 114*	*50.95*	*0.641*	*20*	
Surr: Dibromofluoromethane	*48.1*	*1.0*	*50*	*0*	*96.2*	*80 - 119*	*51.94*	*7.69*	*20*	
Surr: Toluene-d8	*54.98*	*1.0*	*50*	*0*	*110*	*89 - 112*	*54.01*	*1.78*	*20*	

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363681 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:				
	HS20060545-01	HS20060545-02	HS20060545-03	HS20060545-05
	HS20060545-06	HS20060545-07		

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 13:02**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629824** 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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 13:02**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629824** 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	*47.97*	*1.0*	*50*	*0*	*95.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.44*	*1.0*	*50*	*0*	*96.9*	*85 - 114*				
Surr: Dibromofluoromethane	*48.46*	*1.0*	*50*	*0*	*96.9*	*80 - 119*				
Surr: Toluene-d8	*52.49*	*1.0*	*50*	*0*	*105*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 12:14**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629823** 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	20.55	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	20.11	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	20.31	1.0	20	0	102	71 - 121				
1,1,2-Trichloroethane	20.55	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	19.29	1.0	20	0	96.5	77 - 125				
1,1-Dichloroethene	19.03	1.0	20	0	95.2	71 - 131				
1,1-Dichloropropene	19.24	1.0	20	0	96.2	78 - 125				
1,2,3-Trichlorobenzene	23.75	1.0	20	0	119	69 - 129				
1,2,3-Trichloropropane	19.77	1.0	20	0	98.8	73 - 122				
1,2,4-Trichlorobenzene	23.95	1.0	20	0	120	69 - 130				
1,2,4-Trimethylbenzene	19.9	1.0	20	0	99.5	76 - 124				
1,2-Dibromo-3-chloropropane	19.75	1.0	20	0	98.7	62 - 128				
1,2-Dibromoethane	20.98	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.5	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	20.54	1.0	20	0	103	73 - 128				
1,2-Dichloropropane	21.2	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	20.5	1.0	20	0	102	75 - 124				
1,3-Dichlorobenzene	20.11	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	20.73	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.05	1.0	20	0	100	79 - 118				
2,2-Dichloropropane	19.69	1.0	20	0	98.5	60 - 139				
2-Butanone	37.08	2.0	40	0	92.7	56 - 143				
2-Chlorotoluene	19.84	1.0	20	0	99.2	79 - 122				
2-Hexanone	42.02	2.0	40	0	105	57 - 139				
4-Chlorotoluene	19.99	1.0	20	0	99.9	78 - 122				
4-Isopropyltoluene	20.75	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	41.69	2.0	40	0	104	67 - 130				
Acetone	42.99	2.0	40	0	107	39 - 160				
Benzene	20.42	1.0	20	0	102	79 - 120				
Bromobenzene	20.02	1.0	20	0	100	80 - 120				
Bromochloromethane	19.28	1.0	20	0	96.4	78 - 123				
Bromodichloromethane	20.73	1.0	20	0	104	79 - 125				
Bromoform	20.31	1.0	20	0	102	66 - 130				
Bromomethane	19.86	1.0	20	0	99.3	53 - 141				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 12:14**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629823** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.61	2.0	40	0	99.0	64 - 133				
Carbon tetrachloride	18.94	1.0	20	0	94.7	72 - 136				
Chlorobenzene	20.37	1.0	20	0	102	82 - 118				
Chloroethane	19.63	1.0	20	0	98.1	60 - 138				
Chloroform	19.93	1.0	20	0	99.6	79 - 124				
Chloromethane	19.99	1.0	20	0	100.0	50 - 139				
cis-1,2-Dichloroethene	19.8	1.0	20	0	99.0	78 - 123				
cis-1,3-Dichloropropene	20.89	1.0	20	0	104	75 - 124				
Dibromochloromethane	20.46	1.0	20	0	102	74 - 126				
Dibromomethane	20.4	1.0	20	0	102	79 - 123				
Dichlorodifluoromethane	18.98	1.0	20	0	94.9	32 - 152				
Ethylbenzene	19.53	1.0	20	0	97.6	79 - 121				
Hexachlorobutadiene	26.94	1.0	20	0	135	66 - 134				S
Isopropylbenzene	20.46	1.0	20	0	102	72 - 131				
m,p-Xylene	41.36	2.0	40	0	103	80 - 121				
Methylene chloride	18.85	2.0	20	0	94.2	74 - 124				
Naphthalene	22.08	1.0	20	0	110	61 - 128				
n-Butylbenzene	20.98	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.13	1.0	20	0	101	76 - 126				
o-Xylene	20.43	1.0	20	0	102	78 - 122				
sec-Butylbenzene	20.51	1.0	20	0	103	77 - 126				
Styrene	20.54	1.0	20	0	103	78 - 123				
tert-Butylbenzene	20.33	1.0	20	0	102	78 - 124				
Tetrachloroethene	20.54	1.0	20	0	103	74 - 129				
Toluene	20.63	1.0	20	0	103	80 - 121				
trans-1,2-Dichloroethene	20.67	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.42	1.0	20	0	102	73 - 127				
Trichloroethene	20.29	1.0	20	0	101	79 - 123				
Trichlorofluoromethane	20.06	1.0	20	0	100	65 - 141				
Vinyl chloride	18.98	1.0	20	0	94.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.52*	*1.0*	*50*	*0*	*99.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.3*	*1.0*	*50*	*0*	*98.6*	*85 - 114*				
Surr: Dibromofluoromethane	*49.47*	*1.0*	*50*	*0*	*98.9*	*80 - 119*				
Surr: Toluene-d8	*50.6*	*1.0*	*50*	*0*	*101*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060659-05MS** Units: **UG/L** Analysis Date: **20-Jun-2020 15:49**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629831** 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	20.27	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	21.09	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	19.63	1.0	20	0	98.1	71 - 121				
1,1,2-Trichloroethane	20.54	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	21.24	1.0	20	1.886	96.8	77 - 125				
1,1-Dichloroethene	22.03	1.0	20	0	110	71 - 131				
1,1-Dichloropropene	20.81	1.0	20	0	104	78 - 125				
1,2,3-Trichlorobenzene	10.23	1.0	20	0	51.2	69 - 129				S
1,2,3-Trichloropropane	19.19	1.0	20	0	95.9	73 - 122				
1,2,4-Trichlorobenzene	12.37	1.0	20	0	61.8	69 - 130				S
1,2,4-Trimethylbenzene	21.8	1.0	20	0	109	76 - 124				
1,2-Dibromo-3-chloropropane	14.89	1.0	20	0	74.5	62 - 128				
1,2-Dibromoethane	20.45	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.31	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.4	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	21.22	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	22.64	1.0	20	0	113	75 - 124				
1,3-Dichlorobenzene	21.58	1.0	20	0.7075	104	80 - 119				
1,3-Dichloropropane	20.34	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	20.66	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	19.75	1.0	20	0	98.8	60 - 139				
2-Butanone	32.16	2.0	40	0	80.4	56 - 143				
2-Chlorotoluene	21.51	1.0	20	0	108	79 - 122				
2-Hexanone	38.57	2.0	40	0	96.4	57 - 139				
4-Chlorotoluene	21.75	1.0	20	0	109	78 - 122				
4-Isopropyltoluene	22.59	1.0	20	0	113	77 - 127				
4-Methyl-2-pentanone	38.59	2.0	40	0	96.5	67 - 130				
Acetone	31.63	2.0	40	0	79.1	39 - 160				
Benzene	21.07	1.0	20	0	105	79 - 120				
Bromobenzene	21.11	1.0	20	0	106	80 - 120				
Bromochloromethane	18.64	1.0	20	0	93.2	78 - 123				
Bromodichloromethane	20.98	1.0	20	0	105	79 - 125				
Bromoform	20.12	1.0	20	0	101	66 - 130				
Bromomethane	19.28	1.0	20	0	96.4	53 - 141				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060659-05MS** Units: **UG/L** Analysis Date: **20-Jun-2020 15:49**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629831** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	40.81	2.0	40	0	102	64 - 133				
Carbon tetrachloride	21.37	1.0	20	0	107	72 - 136				
Chlorobenzene	20.4	1.0	20	0	102	82 - 118				
Chloroethane	19.67	1.0	20	0	98.3	60 - 138				
Chloroform	19.7	1.0	20	0	98.5	79 - 124				
Chloromethane	19.24	1.0	20	0	96.2	50 - 139				
cis-1,2-Dichloroethene	26.42	1.0	20	6.401	100	78 - 123				
cis-1,3-Dichloropropene	20.73	1.0	20	0	104	75 - 124				
Dibromochloromethane	20.33	1.0	20	0	102	74 - 126				
Dibromomethane	19.82	1.0	20	0	99.1	79 - 123				
Dichlorodifluoromethane	17.66	1.0	20	0	88.3	32 - 152				
Ethylbenzene	21.36	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	14.71	1.0	20	0	73.6	66 - 134				
Isopropylbenzene	22.54	1.0	20	0	113	72 - 131				
m,p-Xylene	43.39	2.0	40	0	108	80 - 121				
Methylene chloride	17.59	2.0	20	0	88.0	74 - 124				
Naphthalene	11.9	1.0	20	0	59.5	61 - 128				S
n-Butylbenzene	22.76	1.0	20	0	114	75 - 128				
n-Propylbenzene	22.91	1.0	20	0	115	76 - 126				
o-Xylene	21.12	1.0	20	0	106	78 - 122				
sec-Butylbenzene	23.05	1.0	20	0	115	77 - 126				
Styrene	20.61	1.0	20	0	103	78 - 123				
tert-Butylbenzene	23.02	1.0	20	0	115	78 - 124				
Tetrachloroethene	22.33	1.0	20	0	112	74 - 129				
Toluene	21.56	1.0	20	0	108	80 - 121				
trans-1,2-Dichloroethene	20.64	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.16	1.0	20	0	101	73 - 127				
Trichloroethene	41.46	1.0	20	19.02	112	79 - 123				
Trichlorofluoromethane	21.86	1.0	20	0	109	65 - 141				
Vinyl chloride	20.61	1.0	20	0.9419	98.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.26*	*1.0*	*50*	*0*	*98.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.77*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*49.92*	*1.0*	*50*	*0*	*99.8*	*80 - 119*				
Surr: Toluene-d8	*54.02*	*1.0*	*50*	*0*	*108*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060659-05MSD** Units: **UG/L** Analysis Date: **20-Jun-2020 16:13**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629832** 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	21.11	1.0	20	0	106	78 - 124	20.27	4.04	20	
1,1,1-Trichloroethane	20.83	1.0	20	0	104	74 - 131	21.09	1.22	20	
1,1,2,2-Tetrachloroethane	19.9	1.0	20	0	99.5	71 - 121	19.63	1.39	20	
1,1,2-Trichloroethane	20.45	1.0	20	0	102	80 - 119	20.54	0.412	20	
1,1-Dichloroethane	20.04	1.0	20	1.886	90.8	77 - 125	21.24	5.83	20	
1,1-Dichloroethene	20.99	1.0	20	0	105	71 - 131	22.03	4.87	20	
1,1-Dichloropropene	21.58	1.0	20	0	108	78 - 125	20.81	3.62	20	
1,2,3-Trichlorobenzene	15.19	1.0	20	0	76.0	69 - 129	10.23	39	20	R
1,2,3-Trichloropropane	19.07	1.0	20	0	95.3	73 - 122	19.19	0.614	20	
1,2,4-Trichlorobenzene	15.22	1.0	20	0	76.1	69 - 130	12.37	20.7	20	R
1,2,4-Trimethylbenzene	22.39	1.0	20	0	112	76 - 124	21.8	2.65	20	
1,2-Dibromo-3-chloropropane	15.62	1.0	20	0	78.1	62 - 128	14.89	4.8	20	
1,2-Dibromoethane	19.9	1.0	20	0	99.5	77 - 121	20.45	2.69	20	
1,2-Dichlorobenzene	20.43	1.0	20	0	102	80 - 119	20.31	0.591	20	
1,2-Dichloroethane	19.66	1.0	20	0	98.3	73 - 128	20.4	3.72	20	
1,2-Dichloropropane	20.75	1.0	20	0	104	78 - 122	21.22	2.23	20	
1,3,5-Trimethylbenzene	23.62	1.0	20	0	118	75 - 124	22.64	4.26	20	
1,3-Dichlorobenzene	22.28	1.0	20	0.7075	108	80 - 119	21.58	3.22	20	
1,3-Dichloropropane	19.76	1.0	20	0	98.8	80 - 119	20.34	2.89	20	
1,4-Dichlorobenzene	20.7	1.0	20	0	104	79 - 118	20.66	0.201	20	
2,2-Dichloropropane	19.09	1.0	20	0	95.4	60 - 139	19.75	3.43	20	
2-Butanone	29.98	2.0	40	0	75.0	56 - 143	32.16	7	20	
2-Chlorotoluene	22.15	1.0	20	0	111	79 - 122	21.51	2.93	20	
2-Hexanone	38.46	2.0	40	0	96.2	57 - 139	38.57	0.273	20	
4-Chlorotoluene	22.18	1.0	20	0	111	78 - 122	21.75	1.96	20	
4-Isopropyltoluene	24.23	1.0	20	0	121	77 - 127	22.59	7	20	
4-Methyl-2-pentanone	38.26	2.0	40	0	95.6	67 - 130	38.59	0.862	20	
Acetone	29.46	2.0	40	0	73.6	39 - 160	31.63	7.13	20	
Benzene	21.11	1.0	20	0	106	79 - 120	21.07	0.188	20	
Bromobenzene	20.57	1.0	20	0	103	80 - 120	21.11	2.58	20	
Bromochloromethane	17.37	1.0	20	0	86.8	78 - 123	18.64	7.05	20	
Bromodichloromethane	20.4	1.0	20	0	102	79 - 125	20.98	2.79	20	
Bromoform	19.64	1.0	20	0	98.2	66 - 130	20.12	2.41	20	
Bromomethane	18.82	1.0	20	0	94.1	53 - 141	19.28	2.4	20	

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060545

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060659-05MSD** Units: **UG/L** Analysis Date: **20-Jun-2020 16:13**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629832** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	40.43	2.0	40	0	101	64 - 133	40.81	0.944	20	
Carbon tetrachloride	21.98	1.0	20	0	110	72 - 136	21.37	2.83	20	
Chlorobenzene	20.97	1.0	20	0	105	82 - 118	20.4	2.77	20	
Chloroethane	18.56	1.0	20	0	92.8	60 - 138	19.67	5.83	20	
Chloroform	18.74	1.0	20	0	93.7	79 - 124	19.7	4.98	20	
Chloromethane	18.08	1.0	20	0	90.4	50 - 139	19.24	6.18	20	
cis-1,2-Dichloroethene	24.73	1.0	20	6.401	91.6	78 - 123	26.42	6.62	20	
cis-1,3-Dichloropropene	20.35	1.0	20	0	102	75 - 124	20.73	1.81	20	
Dibromochloromethane	20.11	1.0	20	0	101	74 - 126	20.33	1.09	20	
Dibromomethane	19.31	1.0	20	0	96.5	79 - 123	19.82	2.62	20	
Dichlorodifluoromethane	17.85	1.0	20	0	89.3	32 - 152	17.66	1.08	20	
Ethylbenzene	21.6	1.0	20	0	108	79 - 121	21.36	1.13	20	
Hexachlorobutadiene	18.44	1.0	20	0	92.2	66 - 134	14.71	22.5	20	R
Isopropylbenzene	23.14	1.0	20	0	116	72 - 131	22.54	2.61	20	
m,p-Xylene	44.95	2.0	40	0	112	80 - 121	43.39	3.54	20	
Methylene chloride	16.63	2.0	20	0	83.2	74 - 124	17.59	5.61	20	
Naphthalene	15.95	1.0	20	0	79.8	61 - 128	11.9	29.1	20	R
n-Butylbenzene	24.13	1.0	20	0	121	75 - 128	22.76	5.82	20	
n-Propylbenzene	24.11	1.0	20	0	121	76 - 126	22.91	5.07	20	
o-Xylene	21.18	1.0	20	0	106	78 - 122	21.12	0.302	20	
sec-Butylbenzene	24.66	1.0	20	0	123	77 - 126	23.05	6.77	20	
Styrene	20.55	1.0	20	0	103	78 - 123	20.61	0.273	20	
tert-Butylbenzene	24.03	1.0	20	0	120	78 - 124	23.02	4.29	20	
Tetrachloroethene	23.84	1.0	20	0	119	74 - 129	22.33	6.52	20	
Toluene	21.95	1.0	20	0	110	80 - 121	21.56	1.8	20	
trans-1,2-Dichloroethene	20.19	1.0	20	0	101	75 - 124	20.64	2.23	20	
trans-1,3-Dichloropropene	19.48	1.0	20	0	97.4	73 - 127	20.16	3.45	20	
Trichloroethene	41.43	1.0	20	19.02	112	79 - 123	41.46	0.0705	20	
Trichlorofluoromethane	21.89	1.0	20	0	109	65 - 141	21.86	0.16	20	
Vinyl chloride	20.28	1.0	20	0.9419	96.7	58 - 137	20.61	1.65	20	
Surr: 1,2-Dichloroethane-d4	*45.57*	*1.0*	*50*	*0*	*91.1*	*81 - 118*	*49.26*	*7.77*	*20*	
Surr: 4-Bromofluorobenzene	*51.02*	*1.0*	*50*	*0*	*102*	*85 - 114*	*50.77*	*0.486*	*20*	
Surr: Dibromofluoromethane	*47.5*	*1.0*	*50*	*0*	*95.0*	*80 - 119*	*49.92*	*4.97*	*20*	
Surr: Toluene-d8	*54.63*	*1.0*	*50*	*0*	*109*	*89 - 112*	*54.02*	*1.13*	*20*	

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ALS Houston, US Date: 30-Jun-20

Client:	Bhate Environmental Associates, Inc.
Project:	LHAAP 18 24
WorkOrder:	HS20060545

QC BATCH REPORT

Batch ID:	**R363690 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20060545-01 HS20060545-02 HS20060545-04

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Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060545**

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

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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
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: 30-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060545

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060545-01	MW2_061020	Login	6/11/2020 3:10:45 PM	RPM	MET018
HS20060545-01	MW2_061020	Login	6/11/2020 3:10:45 PM	RPM	Sub
HS20060545-01	MW2_061020	Login	6/11/2020 3:10:45 PM	RPM	EXT005
HS20060545-01	MW2_061020	Login	6/11/2020 3:10:45 PM	RPM	VOA187
HS20060545-02	MW2_061020_a	Login	6/11/2020 3:10:45 PM	RPM	EXT005
HS20060545-03	18CPTMW01DW_061020	Login	6/11/2020 3:10:45 PM	RPM	MET018
HS20060545-03	18CPTMW01DW_061020	Login	6/11/2020 3:10:45 PM	RPM	Sub
HS20060545-03	18CPTMW01DW_061020	Login	6/11/2020 3:10:45 PM	RPM	EXT005
HS20060545-03	18CPTMW01DW_061020	Login	6/11/2020 3:10:45 PM	RPM	VOA187
HS20060545-04	18CPTMW01SW_061020	Login	6/11/2020 3:10:45 PM	RPM	Sub
HS20060545-04	18CPTMW01SW_061020	Login	6/11/2020 3:10:45 PM	RPM	EXT154
HS20060545-04	18CPTMW01SW_061020	Login	6/11/2020 3:10:45 PM	RPM	VOA187
HS20060545-07	Trip Blank	Login	6/11/2020 3:10:45 PM	RPM	VOA187

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ALS Houston, US Date: 30-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060545 **Date/Time Received:** 11-Jun-2020 09:35

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

Completed By: /S/ RJ Modashia (eSignature) 11-Jun-2020 03:30 (Date/Time) **Reviewed by:** /S/ Corey Grandits (eSignature) 12-Jun-2020 13:25 (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):	2.2°C/2.2°C UC/C	IR25	
Cooler(s)/Kit(s):	46038		
Date/Time sample(s) sent to storage:	06/11/2020 10AM		
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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bhate

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

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

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) | Quality Assurance Samples (6)

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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Coder ID
MW2_061020	10Jun2020	0740	-	N		WG	5	X	X		X				
MW2_061020_a	10Jun2020	0740	-	FD		WG	5	X	X		X				
18CPTMW01DW_061020	10Jun2020	0905	-	N		WG	6	X	X	X	X				
18CPTMW01SW_061020	10Jun2020	1015		N		WG	6	X	X	X	X				
MW22_061020	10Jun2020	1135		N		WG	5	X	X	X					
18CPTMW06_061020	10Jun2020	1240	-	N		WG	6	X	X	X	X				
Trip blank	10Jun2020		-	TB		WG	2	X							
			-												
			-												
			-												
			-												

HS20060545
Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS: _____

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. [signature]	6/10/20	1430	1. J. [signature]	6/11/20	09:35
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

Method of Shipment: _____

Fed Ex Airbill Number:

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

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

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

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

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

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

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

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

Coder 46038 1425
Temp 1.1°C CFO.0

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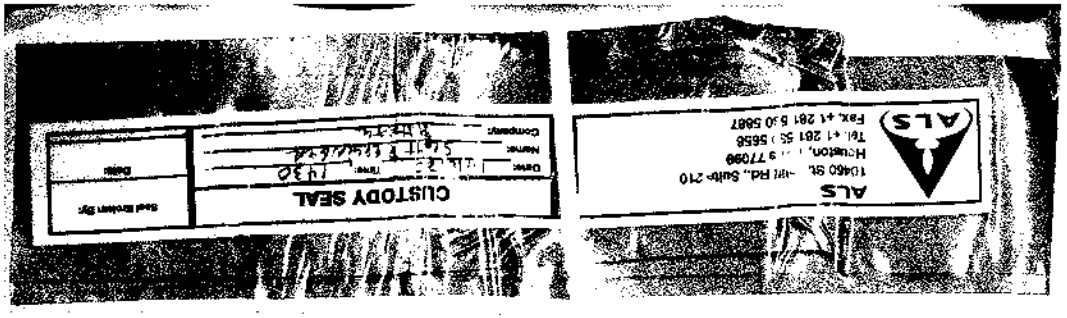

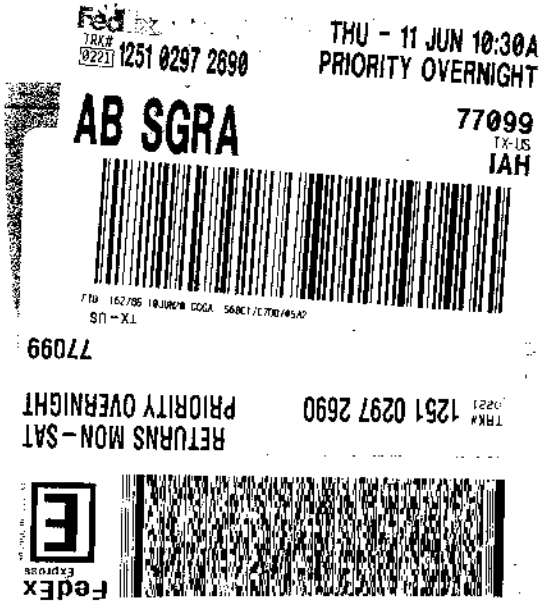

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June 29, 2020 Service Request No:E2000540

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

Laboratory Results for: HS20060545

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 12, 2020
For your reference, these analyses have been assigned our service request number **E2000540.**

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

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ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E2000540
Project:	HS20060545	**Date Received:**	06/12/20
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

Six samples were received for analysis at ALS Environmental in Houston on 06/12/20.

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:

EQ2000244: 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; the MS/MSD was 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.

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Client: ALS Environmental - US **Service Request:**E2000540
Project: HS20060545

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000540-001	MW2_061020	6/10/2020	0740
E2000540-002	MW2_061020_a	6/10/2020	0740
E2000540-003	18CPTMW01DW_061020	6/10/2020	0905
E2000540-004	18CPTMW01SW_061020	6/10/2020	1015
E2000540-005	MW22_061020	6/10/2020	1135
E2000540-006	18CPTMW06_061020	6/10/2020	1240

Service Request Summary

Folder #: **E2000540**
Client Name: ALS Environmental - US
Project Name: HS20060545
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: 06/12/20
Internal Due Date: 6/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060545
EDD: No EDD Specified

6 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000540-001	MW2_061020	Ground Water	06/10/20 0740	**IV**
E2000540-002	MW2_061020_a	Ground Water	06/10/20 0740	**IV**
E2000540-003	18CPTMW01DW_061020	Ground Water	06/10/20 0905	**IV**
E2000540-004	18CPTMW01SW_061020	Ground Water	06/10/20 1015	**IV**
E2000540-005	MW22_061020	Ground Water	06/10/20 1135	**IV**
E2000540-006	18CPTMW06_061020	Ground Water	06/10/20 1240	**IV**

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Service Request Summary

Folder #: **E2000540**
Client Name: ALS Environmental - US
Project Name: HS20060545
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: 06/12/20
Internal Due Date: 6/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060545
EDD: No EDD Specified

6 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	6	Level IV due 7/2,level II 6/25

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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
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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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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www.alsglobal.com

E2000540 5
ALS Laboratory Group
HS20060545

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 14088

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:	HS20060545
TSR:	Danielle Winnings

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS20060545-01**	**MW2_061020**	**Groundwater**	**10 Jun 2020 07:40**
	SUB_Perch-6850			25 Jun 2020
2.	**HS20060545-02**	**MW2_061020_a**	**Groundwater**	**10 Jun 2020 07:40**
	SUB_Perch-6850			25 Jun 2020
3.	**HS20060545-03**	**18CPTMW01DW_061020**	**Groundwater**	**10 Jun 2020 09:05**
	SUB_Perch-6850			25 Jun 2020
4.	**HS20060545-04**	**18CPTMW01SW_061020**	**Groundwater**	**10 Jun 2020 10:15**
	SUB_Perch-6850			25 Jun 2020
5.	**HS20060545-05**	**MW22_061020**	**Groundwater**	**10 Jun 2020 11:35**
	SUB_Perch-6850			25 Jun 2020
6.	**HS20060545-06**	**18CPTMW06_061020**	**Groundwater**	**10 Jun 2020 12:40**
	SUB_Perch-6850			25 Jun 2020

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

QC Level: DOD IV (DoD Data Package)

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 14088

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 6/12/20 1400

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-HI

Thermometer ID IR24

Date/Time Received: 6/12/20 Initials: CH Date/Time Logged in: 6/12/20 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 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?
-		6/12/20	1400	CH	2.4	✓
						☐
						☐
						☐

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:

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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#: 360258 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/18/20 09:11

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000537-001	18CPTMW04SW_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000537-002	18CPTMW04_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000537-003	18CPTMW04_061020_a	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000537-004	MW3_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000537-005	109_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000537-006	MW10_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000537-007	MW17_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000537-008	MW18_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000537-009	130_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000540-001	MW2_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000540-002	MW2_061020_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000540-003	18CPTMW01DW_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000540-004	18CPTMW01SW_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000540-005	MW22_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000540-006	18CPTMW06_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	EQ2000244-01	MB		6850/ClO4 DOD			Liquid	10mL	
17	EQ2000244-02	LCS		6850/ClO4 DOD			Liquid	10mL	
18	EQ2000244-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000244-04	MW18_061020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
20	EQ2000244-05	MW18_061020 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

EQ2000244-01 100.00µL EQ2000244-02 100.00µL EQ2000244-03 100.00µL EQ2000244-04 100.00µL EQ2000244-05 100.00µL

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

EQ2000244-02 1.00µL EQ2000244-03 1.00µL EQ2000244-04 1.00µL EQ2000244-05 1.00µL

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Preparation Information Benchsheet

Prep Run#: 360258
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/18/20 09:11

Preparation Steps

Step: Preparation
Started: 6/18/20 09:11
Finished: 6/18/20 17:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

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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:**	E2000540
Project:	HS20060545	**Date Collected:**	6/10/20 0740
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW2_061020	**Units:**	µg/L
Lab Code:	E2000540-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 21:27	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	6/10/20 0740
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW2_061020_a	**Units:**	µg/L
Lab Code:	E2000540-002	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 21:34	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	6/10/20 0905
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW01DW_061020	**Units:**	µg/L
Lab Code:	E2000540-003	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 21:42	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	6/10/20 1015
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW01SW_061020	**Units:**	µg/L
Lab Code:	E2000540-004	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 21:50	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	6/10/20 1135
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW22_061020	**Units:**	µg/L
Lab Code:	E2000540-005	**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	**493**		2.00	1.00	0.500	20	6/18/20	6/26/20 14:40	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	6/10/20 1240
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW06_061020	**Units:**	µg/L
Lab Code:	E2000540-006	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 22:06	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000244-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:28	360258	685181	

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:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/25/20
Sample Matrix:	Ground Water		

Lab Control Sample Summary

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	360258

	Lab Control Sample EQ2000244-02			Duplicate Lab Control Sample EQ2000244-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.107	0.100	107	0.0957	0.100	96	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:**	E2000540
Project:	HS20060545	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000244-02	**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	**0.107**		0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:36	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000244-03	**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	**0.0957**	J	0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:44	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	6/25/20

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:	E2000537-008	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS **Matrix Spike** EQ2000244-04				Batch QCDMS **Duplicate Matrix Spike** EQ2000244-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.0996	0.100	100	0.104	0.100	104	84 - 119	5	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.

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000244-04	**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	**0.0996**	J	0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:52	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000244-05	**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	**0.104**		0.100	0.0500	0.0250	1	6/18/20	6/25/20 20:00	360258	685181	

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

20200625

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
	null		20200625_001	Perchlorate6850b.lcm	1x	☒	
	null		20200625_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_005	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE1		20200625_006	Perchlorate6850b.lcm	1x	☒	3100806-05
	PERCHLORATE2		20200625_007	Perchlorate6850b.lcm	1x	☒	3100806-06
	PERCHLORATE3		20200625_008	Perchlorate6850b.lcm	1x	☒	3100806-07
	PERCHLORATE4		20200625_009	Perchlorate6850b.lcm	1x	☒	3100807-01
	PERCHLORATE5		20200625_011	Perchlorate6850b.lcm	1x	☒	3100807-03
	PERCHLORATE6		20200625_012	Perchlorate6850b.lcm	1x	☒	3100807-04
	PERCHLORATE7		20200625_013	Perchlorate6850b.lcm	1x	☒	3100807-05
	PERCHLORATE8		20200625_014	Perchlorate6850b.lcm	1x	☒	3100807-06
	PERCHLORATE9		20200625_015	Perchlorate6850b.lcm	1x	☒	3100807-07
	PERCHLORATEICV		20200625_016	Perchlorate6850b.lcm	1x	☒	**3100807-08**
	IB		20200625_017	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_018	Perchlorate6850b.lcm	1x	☒	
	LODV		20200625_019	Perchlorate6850b.lcm	1x	☒	
	ICS		20200625_020	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200625_021	Perchlorate6850b.lcm	1x	☒	3100807-05
	EQ2000244-01		20200625_022	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-02		20200625_023	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-03		20200625_024	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-04		20200625_025	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-05		20200625_026	Perchlorate6850b.lcm	1x	☒	
	E2000537-001		20200625_027	Perchlorate6850b.lcm	1x	☒	
	E2000537-002		20200625_028	Perchlorate6850b.lcm	1x	☒	
	E2000537-003		20200625_029	Perchlorate6850b.lcm	1x	☒	
	E2000537-004		20200625_030	Perchlorate6850b.lcm	1x	☒	
	E2000537-005		20200625_031	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200625_032	Perchlorate6850b.lcm	1x	☒	3100807-05
	E2000537-006		20200625_033	Perchlorate6850b.lcm	1x	☒	
	E2000537-007		20200625_034	Perchlorate6850b.lcm	1x	☒	
	E2000537-008		20200625_035	Perchlorate6850b.lcm	1x	☒	
	E2000537-009		20200625_036	Perchlorate6850b.lcm	1x	☒	
	E2000540-001		20200625_037	Perchlorate6850b.lcm	1x	☒	
	E2000540-002		20200625_038	Perchlorate6850b.lcm	1x	☒	
	E2000540-003		20200625_039	Perchlorate6850b.lcm	1x	☒	
	E2000540-004		20200625_040	Perchlorate6850b.lcm	1x	☒	
	E2000537-001		20200625_041	Perchlorate6850b.lcm	1x	☒	
	E2000537-002		20200625_042	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200625_043	Perchlorate6850b.lcm	1x	☒	3100807-05
	EQ2000243-01		20200625_044	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-02		20200625_045	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-03		20200625_046	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-04		20200625_047	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-05		20200625_048	Perchlorate6850b.lcm	1x	☒	
	E2000541-001		20200625_049	Perchlorate6850b.lcm	1x	☒	
	E2000541-002		20200625_050	Perchlorate6850b.lcm	1x	☒	
	E2000541-003		20200625_051	Perchlorate6850b.lcm	1x	☒	
	E2000541-004		20200625_052	Perchlorate6850b.lcm	1x	☒	
	E2000541-005		20200625_053	Perchlorate6850b.lcm	1x	☒	

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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

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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

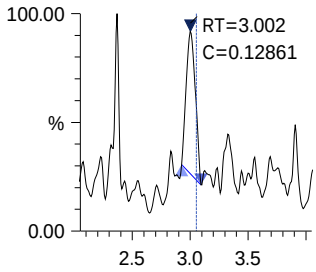
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE1	6/25/2020 5:21:49 PM	6704	0.12861	20200625_006	3.002	25.0000	1.0000	5
Sodium Perchlorate-18O4_IS	PERCHLORATE1	6/25/2020 5:21:49 PM	387624	1.00000	20200625_006	3.002	25.0000	1.0000	5

Perchlorate

Conc 0.12861

Area 6704

Q 99.00>83.00 (-) 1.79e3

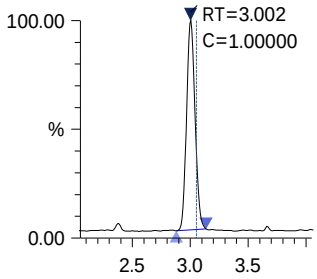


Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 387624

ISTD 107.00>89.00 (-) 7.66e4



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ALS Group Houston

PERCHLORATE2

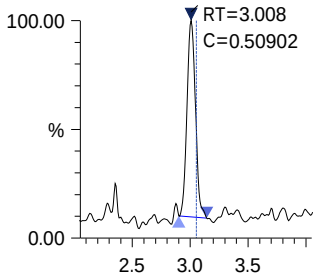
Date acquired: 6/25/2020 5:29:41 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_007.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

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

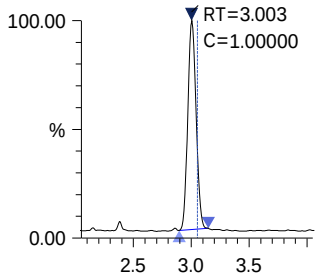
Q 99.00>83.00 (-) 5.58e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 386905

ISTD 107.00>89.00 (-) 7.79e4



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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

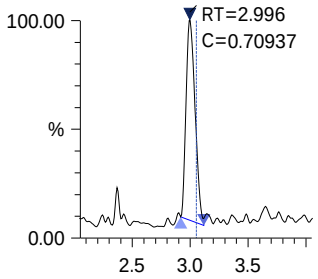
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE3	6/25/2020 5:37:36 PM	36977	0.70937	20200625_008	2.996	25.0000	1.0000	7
Sodium Perchlorate-18O4_IS	PERCHLORATE3	6/25/2020 5:37:36 PM	387606	1.00000	20200625_008	2.998	25.0000	1.0000	7

Perchlorate

Conc 0.70937

Area 36977

Q 99.00>83.00 (-) 7.15e3

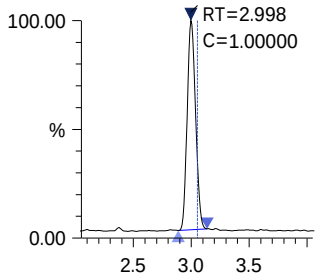


Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 387606

ISTD 107.00>89.00 (-) 7.76e4



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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

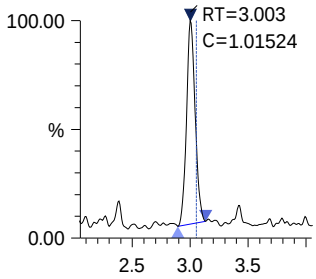
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE4	6/25/2020 5:45:31 PM	49004	1.01524	20200625_009	3.003	25.0000	1.0000	8
Sodium Perchlorate-18O4_IS	PERCHLORATE4	6/25/2020 5:45:31 PM	358914	1.00000	20200625_009	3.001	25.0000	1.0000	8

Perchlorate

Conc 1.01524

Area 49004

Q 99.00>83.00 (-) 9.81e3

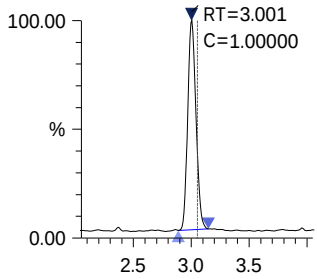


Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 358914

ISTD 107.00>89.00 (-) 7.26e4



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ALS Group Houston

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

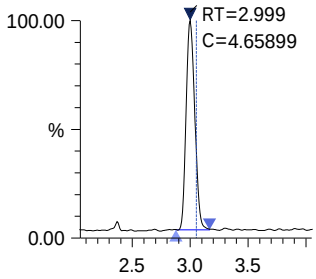
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE5	6/25/2020 6:01:22 PM	232008	4.65899	20200625_011	2.999	25.0000	1.0000	10
Sodium Perchlorate-18O4_IS	PERCHLORATE5	6/25/2020 6:01:22 PM	370291	1.00000	20200625_011	2.996	25.0000	1.0000	10

Perchlorate

Conc 4.65899

Area 232008

Q 99.00>83.00 (-) 4.49e4

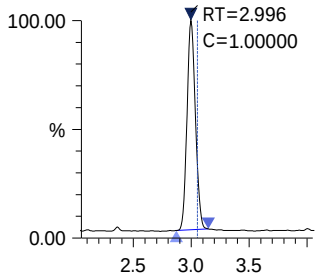


Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 370291

ISTD 107.00>89.00 (-) 7.40e4



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ALS Group Houston

PERCHLORATE6

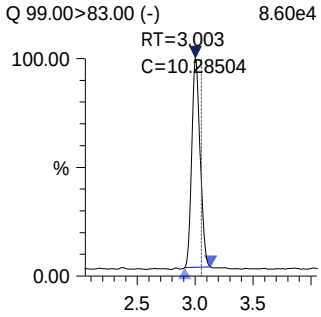
Date acquired: 6/25/2020 6:09:15 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_012.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

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

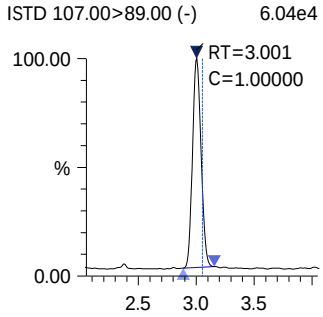
Area 427451



Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 309038



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ALS Group Houston

PERCHLORATE7

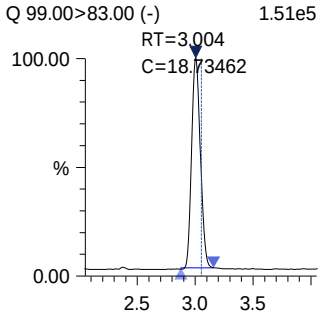
Date acquired: 6/25/2020 6:17:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_013.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

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

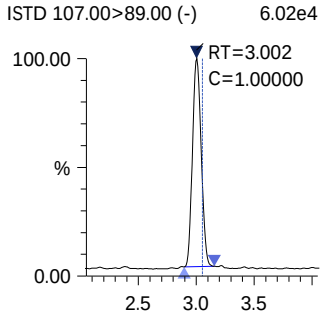
Area 786893



Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 312322



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PERCHLORATE8

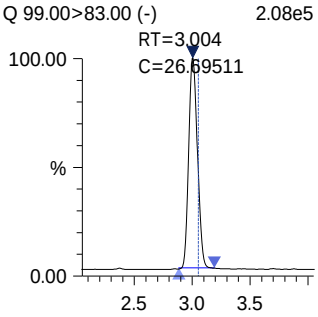
Date acquired: 6/25/2020 6:25:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_014.lcd
Vial: 12 | Inj. Volume: 25.0000uL | Tray: 1

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

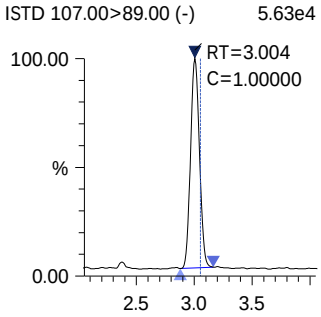
Area 1075993



Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 299716



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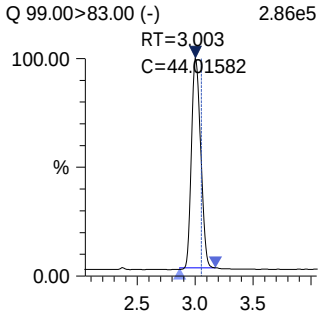
PERCHLORATE9

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

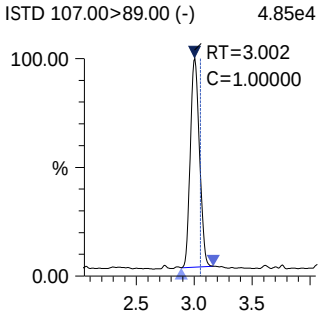
Perchlorate

Conc 44.01582
Area 1567374



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 264786



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PERCHLORATEICV

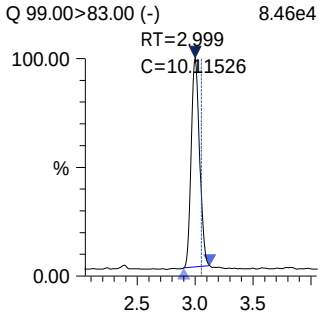
Date acquired: 6/25/2020 6:40:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_016.lcd
Vial: 14 | Inj. Volume: 25.0000uL | Tray: 1

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

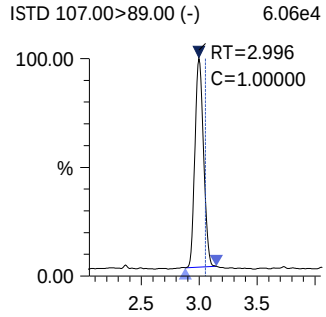
Area 420958



Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 309452



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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

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20200625

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
	null		20200625_001	Perchlorate6850b.lcm	1x	☒	
	null		20200625_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_003	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_004	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_005	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE1		20200625_006	Perchlorate6850b.lcm	1x	☒	3100806-05
	PERCHLORATE2		20200625_007	Perchlorate6850b.lcm	1x	☒	3100806-06
	PERCHLORATE3		20200625_008	Perchlorate6850b.lcm	1x	☒	3100806-07
	PERCHLORATE4		20200625_009	Perchlorate6850b.lcm	1x	☒	3100807-01
	PERCHLORATE5		20200625_011	Perchlorate6850b.lcm	1x	☒	3100807-03
	PERCHLORATE6		20200625_012	Perchlorate6850b.lcm	1x	☒	3100807-04
	PERCHLORATE7		20200625_013	Perchlorate6850b.lcm	1x	☒	3100807-05
	PERCHLORATE8		20200625_014	Perchlorate6850b.lcm	1x	☒	3100807-06
	PERCHLORATE9		20200625_015	Perchlorate6850b.lcm	1x	☒	3100807-07
	PERCHLORATEICV		20200625_016	Perchlorate6850b.lcm	1x	☒	**3100807-08**
	IB		20200625_017	Perchlorate6850b.lcm	1x	☒	
	IB		20200625_018	Perchlorate6850b.lcm	1x	☒	
	LODV		20200625_019	Perchlorate6850b.lcm	1x	☒	
	ICS		20200625_020	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200625_021	Perchlorate6850b.lcm	1x	☒	3100807-05
	EQ2000244-01		20200625_022	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-02		20200625_023	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-03		20200625_024	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-04		20200625_025	Perchlorate6850b.lcm	1x	☒	
	EQ2000244-05		20200625_026	Perchlorate6850b.lcm	1x	☒	
	E2000537-001		20200625_027	Perchlorate6850b.lcm	1x	☒	
	E2000537-002		20200625_028	Perchlorate6850b.lcm	1x	☒	
	E2000537-003		20200625_029	Perchlorate6850b.lcm	1x	☒	
	E2000537-004		20200625_030	Perchlorate6850b.lcm	1x	☒	
	E2000537-005		20200625_031	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200625_032	Perchlorate6850b.lcm	1x	☒	3100807-05
	E2000537-006		20200625_033	Perchlorate6850b.lcm	1x	☒	
	E2000537-007		20200625_034	Perchlorate6850b.lcm	1x	☒	
	E2000537-008		20200625_035	Perchlorate6850b.lcm	1x	☒	
	E2000537-009		20200625_036	Perchlorate6850b.lcm	1x	☒	
	E2000540-001		20200625_037	Perchlorate6850b.lcm	1x	☒	
	E2000540-002		20200625_038	Perchlorate6850b.lcm	1x	☒	
	E2000540-003		20200625_039	Perchlorate6850b.lcm	1x	☒	
	E2000540-004		20200625_040	Perchlorate6850b.lcm	1x	☒	
	E2000537-001		20200625_041	Perchlorate6850b.lcm	1x	☒	
	E2000537-002		20200625_042	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200625_043	Perchlorate6850b.lcm	1x	☒	3100807-05
	EQ2000243-01		20200625_044	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-02		20200625_045	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-03		20200625_046	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-04		20200625_047	Perchlorate6850b.lcm	1x	☒	
	EQ2000243-05		20200625_048	Perchlorate6850b.lcm	1x	☒	
	E2000541-001		20200625_049	Perchlorate6850b.lcm	1x	☒	
	E2000541-002		20200625_050	Perchlorate6850b.lcm	1x	☒	
	E2000541-003		20200625_051	Perchlorate6850b.lcm	1x	☒	
	E2000541-004		20200625_052	Perchlorate6850b.lcm	1x	☒	
	E2000541-005		20200625_053	Perchlorate6850b.lcm	1x	☒	

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20200626

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
	IB		20200626_001	Perchlorate6850b.lcm	1x	☒	
	IB		20200626_002	Perchlorate6850b.lcm	1x	☒	
	IB		20200626_003	Perchlorate6850b.lcm	1x	☒	
	LODV		20200626_004	Perchlorate6850b.lcm	1x	☒	
	ICS		20200626_005	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200626_006	Perchlorate6850b.lcm	1x	☒	3100807-05
	PERCHLORATE7		20200626_007	Perchlorate6850b.lcm	1x	☒	3100807-05
	E2000541-016		20200626_008	Perchlorate6850b.lcm	1x	☒	
	E2000541-017		20200626_009	Perchlorate6850b.lcm	1x	☒	
	E2000541-018		20200626_010	Perchlorate6850b.lcm	1x	☒	
	E2000541-019		20200626_011	Perchlorate6850b.lcm	1x	☒	
	E2000541-020		20200626_012	Perchlorate6850b.lcm	1x	☒	
	E2000521-001		20200626_013	Perchlorate6850b.lcm	1x	☒	
	IB		20200626_014	Perchlorate6850b.lcm	1x	☒	
	IB		20200626_015	Perchlorate6850b.lcm	1x	☒	
	IB		20200626_016	Perchlorate6850b.lcm	1x	☒	
	IB		20200626_017	Perchlorate6850b.lcm	1x	☒	
	PERCHLORATE7		20200626_018	Perchlorate6850b.lcm	1x	☒	3100807-05
	E2000521-001		20200626_019	Perchlorate6850b.lcm	1x	☒	
	E2000539-002		20200626_020	Perchlorate6850b.lcm	1x	☒	
	E2000539-006		20200626_021	Perchlorate6850b.lcm	1x	☒	
	E2000520-001X1000		20200626_022	Perchlorate6850b.lcm	1000	☒	
	E2000536-003X100		20200626_023	Perchlorate6850b.lcm	100	☒	
	E2000536-004X100		20200626_024	Perchlorate6850b.lcm	100	☒	
	E2000539-001X5000		20200626_025	Perchlorate6850b.lcm	5000	☒	
	E2000539-003X5000		20200626_026	Perchlorate6850b.lcm	5000	☒	
	E2000539-004X10000		20200626_027	Perchlorate6850b.lcm	10000	☒	
	E2000539-005X10000		20200626_028	Perchlorate6850b.lcm	10000	☒	
	PERCHLORATE7		20200626_029	Perchlorate6850b.lcm	1x	☒	3100807-05
	E2000539-007		20200626_030	Perchlorate6850b.lcm	1x	☒	
	E2000543-001		20200626_031	Perchlorate6850b.lcm	1x	☒	
	E2000540-005X20		20200626_032	Perchlorate6850b.lcm	20	☒	
	E2000541-004X20		20200626_033	Perchlorate6850b.lcm	20	☒	
	E2000541-007X1000		20200626_034	Perchlorate6850b.lcm	1000	☒	
	E2000541-008X200		20200626_035	Perchlorate6850b.lcm	200	☒	
	E2000541-009X200		20200626_036	Perchlorate6850b.lcm	200	☒	
	E2000541-012X500		20200626_037	Perchlorate6850b.lcm	500	☒	
	E2000541-015X10		20200626_038	Perchlorate6850b.lcm	10	☒	
	PERCHLORATE7		20200626_039	Perchlorate6850b.lcm	1x	☒	3100807-05
	E2000543-001		20200626_040	Perchlorate6850b.lcm	1x	☒	
	E2000539-004X50000		20200626_041	Perchlorate6850b.lcm	50000	☒	
	E2000539-005X100000		20200626_042	Perchlorate6850b.lcm	10000	☒	
	E2000541-016X100		20200626_043	Perchlorate6850b.lcm	100	☒	
	E2000541-017X1000		20200626_044	Perchlorate6850b.lcm	1000	☒	
	E2000541-018X1000		20200626_045	Perchlorate6850b.lcm	1000	☒	
	E2000541-019X1000		20200626_046	Perchlorate6850b.lcm	1000	☒	
	E2000541-020X500		20200626_047	Perchlorate6850b.lcm	500	☒	
	PERCHLORATE7		20200626_048	Perchlorate6850b.lcm	1x	☒	3100807-05

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/25/20

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\20200625A\20200625_021	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1345	0.1363	1.3	NA	± 15 %	Average RF

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/25/20

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\20200625A\20200625_032	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.3	0.1345	0.1385	3.0	NA	± 15 %	Average RF

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/25/20

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\20200625A\20200625_043	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.0	0.1345	0.1350	0.4	NA	± 15 %	Average RF

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/26/20

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\20200626\20200626_029	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.92	0.1345	0.1346	0.1	NA	± 15 %	Average RF

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/26/20

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\20200626\20200626_039	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.90	0.1345	0.1344	0.0	NA	± 15 %	Average RF

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/25/20 19:20

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200625A\20200625_021	**Lab Code:**	EQ2000270-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-01	307,194	2.99
Method Blank	EQ2000244-01	350,361	2.99
Lab Control Sample	EQ2000244-02	368,292	2.99
Duplicate Lab Control Sample	EQ2000244-03	375,177	2.99
Batch QCMS	EQ2000244-04	171,728	2.94
Batch QCDMS	EQ2000244-05	178,361	2.94

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

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/25/20 20:47

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200625A\20200625_032	**Lab Code:**	EQ2000270-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-02	305,916	2.99
Batch QC	E2000537-008	177,639	2.93
MW2_061020	E2000540-001	220,932	2.95
MW2_061020_a	E2000540-002	224,007	2.96
18CPTMW01DW_061020	E2000540-003	264,751	2.96
18CPTMW01SW_061020	E2000540-004	244,830	2.98
18CPTMW06_061020	E2000540-006	234,104	2.97

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

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/25/20 22:14

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200625A\20200625_043	**Lab Code:**	EQ2000270-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-03	313,792	2.99

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

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/26/20 14:17

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200626\20200626_029	**Lab Code:**	EQ2000270-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-04	321,439	2.99
MW22_061020	E2000540-005	276,294	2.99

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000540
Project:	HS20060545	**Date Analyzed:**	6/26/20 15:36

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200626\20200626_039	**Lab Code:**	EQ2000270-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-05	322,196	2.99

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

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ALS Group Houston

PERCHLORATE7

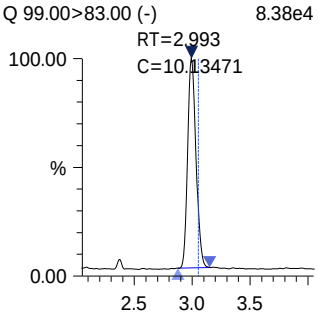
Date acquired: 6/25/2020 7:20:34 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_021.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/25/2020 7:20:34 PM	418690	10.13471	20200625_021	2.993	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/25/2020 7:20:34 PM	307194	1.00000	20200625_021	2.991	25.0000	1.0000	4

Perchlorate

Conc 10.13471

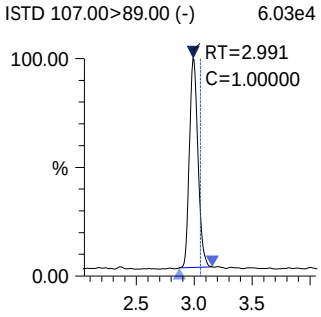
Area 418690



Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 307194



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ALS Group Houston

EQ2000244-01

Date acquired: 6/25/2020 7:28:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_022.lcd
Vial: 33 | Inj. Volume: 25.0000uL | Tray: 3

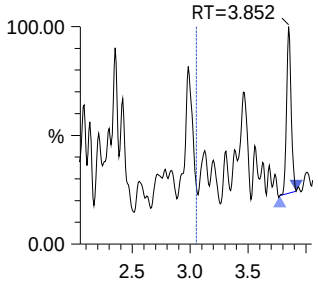
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-01	6/25/2020 7:28:30 PM	----	----	20200625_022	----	25.0000	1.0000	33
Sodium Perchlorate-18O4_IS	EQ2000244-01	6/25/2020 7:28:30 PM	350361	1.00000	20200625_022	2.989	25.0000	1.0000	33

Perchlorate

Conc ----

Area ----

Q 99.00>83.00 (-) 1.20e3

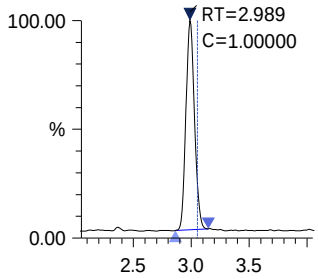


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 350361

ISTD 107.00>89.00 (-) 6.91e4



RIGHT SOLUTIONS | RIGHT PARTNER

ALS Group Houston

EQ2000244-02

Date acquired: 6/25/2020 7:36:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_023.lcd
Vial: 34 | Inj. Volume: 25.0000uL | Tray: 3

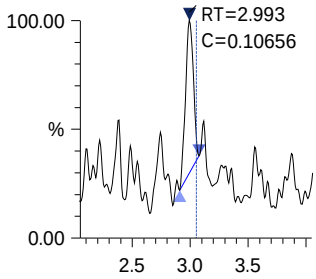
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-02	6/25/2020 7:36:25 PM	5278	0.10656	20200625_023	2.993	25.0000	1.0000	34
Sodium Perchlorate-18O4_IS	EQ2000244-02	6/25/2020 7:36:25 PM	368292	1.00000	20200625_023	2.993	25.0000	1.0000	34

Perchlorate

Conc 0.10656

Area 5278

Q 99.00>83.00 (-) 1.54e3

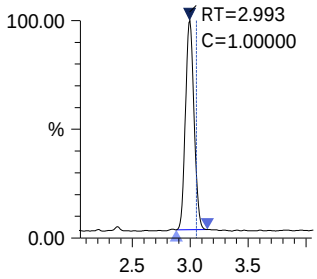


Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 368292

ISTD 107.00>89.00 (-) 7.21e4



RIGHT SOLUTIONS | RIGHT PARTNER

ALS Group Houston

EQ2000244-03

Date acquired: 6/25/2020 7:44:17 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_024.lcd
Vial: 35 | Inj. Volume: 25.0000uL | Tray: 3

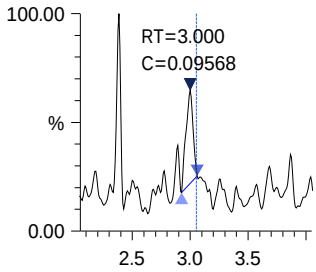
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-03	6/25/2020 7:44:17 PM	4828	0.09568	20200625_024	3.000	25.0000	1.0000	35
Sodium Perchlorate-18O4_IS	EQ2000244-03	6/25/2020 7:44:17 PM	375177	1.00000	20200625_024	2.994	25.0000	1.0000	35

Perchlorate

Conc 0.09568

Area 4828

Q 99.00>83.00 (-) 2.56e3

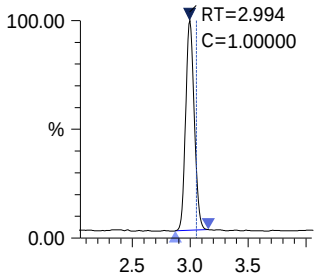


Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 375177

ISTD 107.00>89.00 (-) 7.30e4



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ALS Group Houston

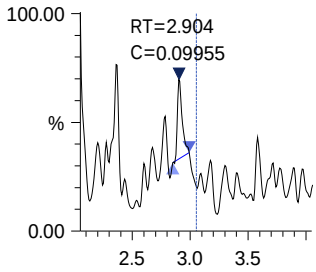
EQ2000244-04

Date acquired: 6/25/2020 7:52:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_025.lcd
Vial: 36 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-04	6/25/2020 7:52:10 PM	2299	0.09955	20200625_025	2.904	25.0000	1.0000	36
Sodium Perchlorate-18O4_IS	EQ2000244-04	6/25/2020 7:52:10 PM	171728	1.00000	20200625_025	2.942	25.0000	1.0000	36

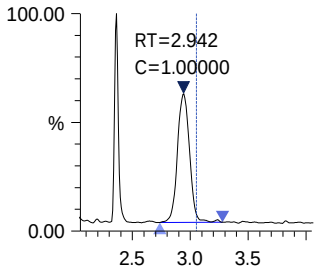
Perchlorate

Conc 0.09955
Area 2299
Q 99.00>83.00 (-) 2.11e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 171728
ISTD 107.00>89.00 (-) 3.89e4



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ALS Group Houston

EQ2000244-05

Date acquired: 6/25/2020 8:00:05 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_026.lcd
Vial: 37 | Inj. Volume: 25.0000uL | Tray: 3

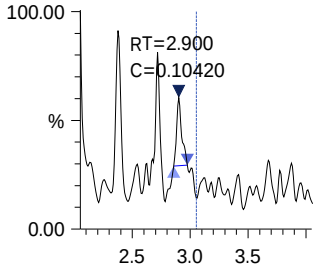
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-05	6/25/2020 8:00:05 PM	2500	0.10420	20200625_026	2.900	25.0000	1.0000	37
Sodium Perchlorate-18O4_IS	EQ2000244-05	6/25/2020 8:00:05 PM	178361	1.00000	20200625_026	2.939	25.0000	1.0000	37

Perchlorate

Conc 0.10420

Area 2500

Q 99.00>83.00 (-) 2.53e3

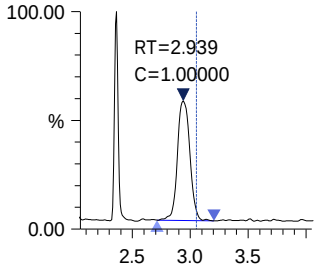


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 178361

ISTD 107.00>89.00 (-) 4.24e4



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ALS Group Houston

PERCHLORATE7

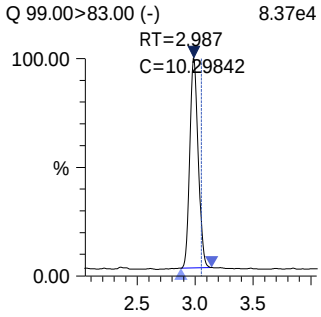
Date acquired: 6/25/2020 8:47:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_032.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	PERCHLORATE7	6/25/2020 8:47:31 PM	423682	10.29842	20200625_032	2.987	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/25/2020 8:47:31 PM	305916	1.00000	20200625_032	2.985	25.0000	1.0000	4

Perchlorate

Conc 10.29842

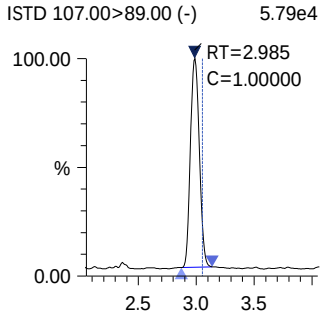
Area 423682



Sodium Perchlorate-18O4 _IS

Conc 1.00000

Area 305916



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

June 29, 2020

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

Work Order: **HS20060547**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 10 sample(s) on Jun 11, 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060547

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060547-01	18CPTMW04SW_061020	Groundwater		10-Jun-2020 07:10	11-Jun-2020 09:35	
HS20060547-02	18CPTMW04_061020	Groundwater		10-Jun-2020 07:55	11-Jun-2020 09:35	
HS20060547-03	18CPTMW04_061020_a	Groundwater		10-Jun-2020 07:55	11-Jun-2020 09:35	
HS20060547-04	MW3_061020	Groundwater		10-Jun-2020 08:50	11-Jun-2020 09:35	
HS20060547-05	109_061020	Groundwater		10-Jun-2020 09:40	11-Jun-2020 09:35	
HS20060547-06	MW10_061020	Groundwater		10-Jun-2020 10:35	11-Jun-2020 09:35	
HS20060547-07	MW17_061020	Groundwater		10-Jun-2020 11:25	11-Jun-2020 09:35	
HS20060547-08	MW18_061020	Groundwater		10-Jun-2020 12:15	11-Jun-2020 09:35	
HS20060547-09	130_061020	Groundwater		10-Jun-2020 13:10	11-Jun-2020 09:35	
HS20060547-10	Trip Blank	Water		10-Jun-2020 00:00	11-Jun-2020 09:35	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060547

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: 154567

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

GCMS Volatiles by Method SW8260

Batch ID: R363681

Sample ID: VLCSW-200619

• 1,2,3-Trichlorobenzene exceeded QC limits for LCS. Samples are ND for this compound.

Sample ID: MW18_061020 (HS20060547-08MS)

• 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 recovery of the MS may be due to sample matrix interference.

Sample ID: MW18_061020 (HS20060547-08MSD)

• The RPD between the MS and MSD was outside of the control limit.

Batch ID: R363724

Sample ID: HS20060846-02MS

• MS and MSD are for an unrelated sample

Batch ID: R363690

Sample ID: VLCSW-200620

• Hexachlorobutadiene exceeded QC limits for LCS. Samples are ND for this compound.

Sample ID: HS20060659-05MS

• MS and MSD are for an unrelated sample

Metals by Method SW7470

Batch ID: 154667

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

Metals by Method SW6020

Batch ID: 154643

Sample ID: HS20060498-08MS

• MS and MSD are for an unrelated sample

Sample ID: HS20060498-08PDS

• PDS is for an unrelated sample

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04SW_061020
Collection Date: 10-Jun-2020 07:10

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-01
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	20-Jun-2020 00:50
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 00:50
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 00:50
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 00:50
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 00:50
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 00:50
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04SW_061020
Collection Date: 10-Jun-2020 07:10

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-01
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	20-Jun-2020 00:50
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 00:50
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 00:50
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 00:50
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 00:50
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 00:50
Surr: 1,2-Dichloroethane-d4	*96.3*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 00:50*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 00:50*
Surr: Dibromofluoromethane	*97.9*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 00:50*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 00:50*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.25**		**0.010**	**0.010**	**0.010**	**ug/L**	1	29-Jun-2020 13:52
Surr: 2-Fluorobiphenyl	*80.9*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 13:52*
Surr: 4-Terphenyl-d14	*86.1*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 13:52*
Surr: Nitrobenzene-d5	*77.8*			**0**	*40-140*	*%REC*	*1*	*29-Jun-2020 13:52*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04SW_061020
Collection Date: 10-Jun-2020 07:10

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0272**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:04
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:04
Arsenic	**0.00132**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:04
Barium	**0.396**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:04
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:04
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:04
Calcium	**19.1**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:04
Chromium	**0.0197**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:04
Cobalt	**0.00182**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:04
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 16:04
Iron	**2.03**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:04
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:04
Magnesium	**15.4**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:04
Manganese	**0.117**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:04
Nickel	**0.00110**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:04
Potassium	**137**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:04
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:04
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:04
Sodium	**137**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:04
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:04
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:04
Zinc	**0.00536**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:04
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:03
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04_061020
Collection Date: 10-Jun-2020 07:55

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,2-Dichloroethane	**0.71**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 02:26
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 02:26
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 02:26
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 02:26
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 02:26
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 02:26
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04_061020
Collection Date: 10-Jun-2020 07:55

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-02
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	20-Jun-2020 02:26
cis-1,2-Dichloroethene	**11**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 02:26
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 02:26
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 02:26
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 02:26
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:26
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
Trichloroethene	**300**		**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 17:25
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:26
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:26
Surr: 1,2-Dichloroethane-d4	*96.9*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 02:26*
Surr: 1,2-Dichloroethane-d4	*105*			**0**	*81-118*	*%REC*	*5*	*20-Jun-2020 17:25*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 02:26*
Surr: 4-Bromofluorobenzene	*95.9*			**0**	*85-114*	*%REC*	*5*	*20-Jun-2020 17:25*
Surr: Dibromofluoromethane	*98.5*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 02:26*
Surr: Dibromofluoromethane	*105*			**0**	*80-119*	*%REC*	*5*	*20-Jun-2020 17:25*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 02:26*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*20-Jun-2020 17:25*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**1.9**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 17:45
Surr: 2-Fluorobiphenyl	*69.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 17:45*
Surr: 4-Terphenyl-d14	*70.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 17:45*
Surr: Nitrobenzene-d5	*60.3*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 17:45*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04_061020
Collection Date: 10-Jun-2020 07:55

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060547

Sample ID: 18CPTMW04_061020_a Lab ID:HS20060547-03

Collection Date: 10-Jun-2020 07:55 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	20-Jun-2020 02:50
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,2-Dichloroethane	**0.72**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 02:50
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 02:50
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 02:50
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 02:50
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 02:50
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 02:50
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04_061020_a
Collection Date: 10-Jun-2020 07:55

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-03
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	20-Jun-2020 02:50
cis-1,2-Dichloroethene	**11**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 02:50
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 02:50
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 02:50
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 02:50
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 02:50
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
Trichloroethene	**310**		**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 17:49
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 02:50
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 02:50
Surr: 1,2-Dichloroethane-d4	*99.2*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 02:50*
Surr: 1,2-Dichloroethane-d4	*114*			**0**	*81-118*	*%REC*	*5*	*20-Jun-2020 17:49*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 02:50*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*5*	*20-Jun-2020 17:49*
Surr: Dibromofluoromethane	*100*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 02:50*
Surr: Dibromofluoromethane	*112*			**0**	*80-119*	*%REC*	*5*	*20-Jun-2020 17:49*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 02:50*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*5*	*20-Jun-2020 17:49*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**2.9**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 18:05
Surr: 2-Fluorobiphenyl	*81.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:05*
Surr: 4-Terphenyl-d14	*80.1*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:05*
Surr: Nitrobenzene-d5	*83.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:05*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04_061020_a
Collection Date: 10-Jun-2020 07:55

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW3_061020
Collection Date: 10-Jun-2020 08:50

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-04
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	20-Jun-2020 03:14
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,1-Dichloroethane	**3.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:14
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 03:14
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 03:14
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 03:14
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 03:14
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 03:14
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Chloroform	**1.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:14

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW3_061020
Collection Date: 10-Jun-2020 08:50

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-04
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	20-Jun-2020 03:14
cis-1,2-Dichloroethene	**57**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:14
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 03:14
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 03:14
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 03:14
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:14
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Tetrachloroethene	**1.0**		**0.30**	**1.0**	**1.0**	**UG/L**	1	20-Jun-2020 03:14
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
trans-1,2-Dichloroethene	**2.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:14
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:14
Trichloroethene	**360**		**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 18:13
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:14
Vinyl chloride	**3.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:14
Surr: 1,2-Dichloroethane-d4	*99.2*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 03:14*
Surr: 1,2-Dichloroethane-d4	*111*			**0**	*81-118*	*%REC*	*5*	*20-Jun-2020 18:13*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 03:14*
Surr: 4-Bromofluorobenzene	*99.3*			**0**	*85-114*	*%REC*	*5*	*20-Jun-2020 18:13*
Surr: Dibromofluoromethane	*99.6*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 03:14*
Surr: Dibromofluoromethane	*108*			**0**	*80-119*	*%REC*	*5*	*20-Jun-2020 18:13*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 03:14*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*5*	*20-Jun-2020 18:13*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW3_061020
Collection Date: 10-Jun-2020 08:50

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.00738**	J	**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:07
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:07
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:07
Barium	**0.376**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:07
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:07
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:07
Calcium	**26.8**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:07
Chromium	**0.0118**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:07
Cobalt	**0.000529**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:07
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 16:07
Iron	**0.328**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:07
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:07
Magnesium	**16.4**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:07
Manganese	**0.343**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:07
Nickel	**0.00252**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:07
Potassium	**1.57**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:07
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:07
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:07
Sodium	**251**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:28
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:07
Vanadium	**0.00117**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:07
Zinc	**0.00219**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:07
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:05
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 109_061020
Collection Date: 10-Jun-2020 09:40

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,1-Dichloroethane	**0.64**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:38
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 03:38
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 03:38
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 03:38
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 03:38
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 03:38
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Chloroform	**0.93**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:38

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 109_061020
Collection Date: 10-Jun-2020 09:40

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-05
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	20-Jun-2020 03:38
cis-1,2-Dichloroethene	**81**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:38
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 03:38
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 03:38
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 03:38
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 03:38
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
trans-1,2-Dichloroethene	**0.84**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 03:38
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
Trichloroethene	**310**		**1.0**	**2.5**	**5.0**	**UG/L**	5	20-Jun-2020 18:37
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 03:38
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 03:38
Surr: 1,2-Dichloroethane-d4	*98.0*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 03:38*
Surr: 1,2-Dichloroethane-d4	*106*			**0**	*81-118*	*%REC*	*5*	*20-Jun-2020 18:37*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 03:38*
Surr: 4-Bromofluorobenzene	*96.0*			**0**	*85-114*	*%REC*	*5*	*20-Jun-2020 18:37*
Surr: Dibromofluoromethane	*98.6*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 03:38*
Surr: Dibromofluoromethane	*105*			**0**	*80-119*	*%REC*	*5*	*20-Jun-2020 18:37*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 03:38*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*5*	*20-Jun-2020 18:37*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.87**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 18:24
Surr: 2-Fluorobiphenyl	*68.9*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:24*
Surr: 4-Terphenyl-d14	*74.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:24*
Surr: Nitrobenzene-d5	*60.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:24*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 109_061020
Collection Date: 10-Jun-2020 09:40

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW10_061020
Collection Date: 10-Jun-2020 10:35

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-06
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 01:14
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 01:14
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 01:14
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 01:14
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 01:14
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW10_061020
Collection Date: 10-Jun-2020 10:35

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-06
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	20-Jun-2020 01:14
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 01:14
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 01:14
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 01:14
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 01:14
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
Trichloroethene	**2.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 01:14
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 01:14
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 01:14
Surr: 1,2-Dichloroethane-d4	*102*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 01:14*
Surr: 4-Bromofluorobenzene	*106*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 01:14*
Surr: Dibromofluoromethane	*104*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 01:14*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 01:14*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.21**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 18:44
Surr: 2-Fluorobiphenyl	*67.1*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:44*
Surr: 4-Terphenyl-d14	*79.4*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:44*
Surr: Nitrobenzene-d5	*53.1*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 18:44*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW17_061020
Collection Date: 10-Jun-2020 11:25

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.28**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 19:04
Surr: 2-Fluorobiphenyl	*68.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:04*
Surr: 4-Terphenyl-d14	*60.8*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:04*
Surr: Nitrobenzene-d5	*46.3*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:04*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW18_061020
Collection Date: 10-Jun-2020 12:15

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-08
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	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 21:39
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	19-Jun-2020 21:39
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	19-Jun-2020 21:39
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 21:39
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	19-Jun-2020 21:39
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW18_061020
Collection Date: 10-Jun-2020 12:15

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-08
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	19-Jun-2020 21:39
cis-1,2-Dichloroethene	**0.86**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	19-Jun-2020 21:39
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	19-Jun-2020 21:39
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	19-Jun-2020 21:39
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	19-Jun-2020 21:39
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	19-Jun-2020 21:39
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
Trichloroethene	**15**		**0.20**	**0.50**	**1.0**	**UG/L**	1	19-Jun-2020 21:39
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	19-Jun-2020 21:39
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	19-Jun-2020 21:39
Surr: 1,2-Dichloroethane-d4	*96.7*			**0**	*81-118*	*%REC*	*1*	*19-Jun-2020 21:39*
Surr: 4-Bromofluorobenzene	*100*			**0**	*85-114*	*%REC*	*1*	*19-Jun-2020 21:39*
Surr: Dibromofluoromethane	*97.1*			**0**	*80-119*	*%REC*	*1*	*19-Jun-2020 21:39*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*19-Jun-2020 21:39*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060547

Sample ID: 130_061020 Lab ID:HS20060547-09

Collection Date: 10-Jun-2020 13:10 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	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	22-Jun-2020 15:04
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	22-Jun-2020 15:04
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	22-Jun-2020 15:04
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	22-Jun-2020 15:04
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	22-Jun-2020 15:04
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 130_061020
Collection Date: 10-Jun-2020 13:10

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-09
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	22-Jun-2020 15:04
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	22-Jun-2020 15:04
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	22-Jun-2020 15:04
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	22-Jun-2020 15:04
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	22-Jun-2020 15:04
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
Trichloroethene	**0.73**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	22-Jun-2020 15:04
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	22-Jun-2020 15:04
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	22-Jun-2020 15:04
Surr: 1,2-Dichloroethane-d4	*90.3*			**0**	*81-118*	*%REC*	*1*	*22-Jun-2020 15:04*
Surr: 4-Bromofluorobenzene	*93.5*			**0**	*85-114*	*%REC*	*1*	*22-Jun-2020 15:04*
Surr: Dibromofluoromethane	*93.0*			**0**	*80-119*	*%REC*	*1*	*22-Jun-2020 15:04*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*22-Jun-2020 15:04*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 130_061020
Collection Date: 10-Jun-2020 13:10

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**1.11**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:14
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:14
Arsenic	**0.00319**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Barium	**0.163**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:14
Cadmium	**0.000248**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	23-Jun-2020 16:14
Calcium	**31.2**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:14
Chromium	**0.00231**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Cobalt	**0.0161**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Copper	**0.00183**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Iron	**3.27**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:14
Lead	**0.00143**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Magnesium	**20.9**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:14
Manganese	**1.14**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Nickel	**0.00693**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Potassium	**1.03**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:14
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:14
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:14
Sodium	**402**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:30
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:14
Vanadium	**0.00300**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
Zinc	**0.00870**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:14
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:07
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 10:16

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 10-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-10
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	20-Jun-2020 13:26
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 13:26
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 13:26
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 13:26
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 13:26
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 13:26
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 10-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060547
Lab ID:HS20060547-10
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	20-Jun-2020 13:26
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 13:26
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 13:26
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:26
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:26
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:26
Surr: 1,2-Dichloroethane-d4	*97.0*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 13:26*
Surr: 4-Bromofluorobenzene	*99.3*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 13:26*
Surr: Dibromofluoromethane	*97.7*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 13:26*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 13:26*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

Batch ID: 154567 **Start Date:** 17 Jun 2020 10:00 **End Date:** 17 Jun 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
HS20060547-01	1	1000 (mL)	1 (mL)	0.001
HS20060547-02	1	1000 (mL)	1 (mL)	0.001
HS20060547-03	1	1000 (mL)	1 (mL)	0.001
HS20060547-05	1	1000 (mL)	1 (mL)	0.001
HS20060547-06	1	1000 (mL)	1 (mL)	0.001
HS20060547-07	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154643 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060547-01		10 (mL)	10 (mL)	1
HS20060547-04		10 (mL)	10 (mL)	1
HS20060547-09		10 (mL)	10 (mL)	1

Batch ID: 154667 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060547-01		10 (mL)	10 (mL)	1
HS20060547-04		10 (mL)	10 (mL)	1
HS20060547-09		10 (mL)	10 (mL)	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154567 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060547-01	18CPTMW04SW_061020	10 Jun 2020 07:10		17 Jun 2020 13:37	29 Jun 2020 13:52	1
HS20060547-02	18CPTMW04_061020	10 Jun 2020 07:55		17 Jun 2020 13:37	27 Jun 2020 17:45	10
HS20060547-03	18CPTMW04_061020_a	10 Jun 2020 07:55		17 Jun 2020 13:37	27 Jun 2020 18:05	10
HS20060547-05	109_061020	10 Jun 2020 09:40		17 Jun 2020 13:37	27 Jun 2020 18:24	10
HS20060547-06	MW10_061020	10 Jun 2020 10:35		17 Jun 2020 13:37	27 Jun 2020 18:44	10
HS20060547-07	MW17_061020	10 Jun 2020 11:25		17 Jun 2020 13:37	27 Jun 2020 19:04	10
Batch ID: 154643 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060547-01	18CPTMW04SW_061020	10 Jun 2020 07:10		19 Jun 2020 14:00	23 Jun 2020 16:04	1
HS20060547-04	MW3_061020	10 Jun 2020 08:50		19 Jun 2020 14:00	23 Jun 2020 17:28	20
HS20060547-04	MW3_061020	10 Jun 2020 08:50		19 Jun 2020 14:00	23 Jun 2020 16:07	1
HS20060547-09	130_061020	10 Jun 2020 13:10		19 Jun 2020 14:00	23 Jun 2020 17:30	20
HS20060547-09	130_061020	10 Jun 2020 13:10		19 Jun 2020 14:00	23 Jun 2020 16:14	1
Batch ID: 154667 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060547-01	18CPTMW04SW_061020	10 Jun 2020 07:10		19 Jun 2020 10:00	19 Jun 2020 16:03	1
HS20060547-04	MW3_061020	10 Jun 2020 08:50		19 Jun 2020 10:00	19 Jun 2020 16:05	1
HS20060547-09	130_061020	10 Jun 2020 13:10		19 Jun 2020 10:00	19 Jun 2020 16:07	1
Batch ID: R363681 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060547-01	18CPTMW04SW_061020	10 Jun 2020 07:10			20 Jun 2020 00:50	1
HS20060547-02	18CPTMW04_061020	10 Jun 2020 07:55			20 Jun 2020 02:26	1
HS20060547-03	18CPTMW04_061020_a	10 Jun 2020 07:55			20 Jun 2020 02:50	1
HS20060547-04	MW3_061020	10 Jun 2020 08:50			20 Jun 2020 03:14	1
HS20060547-05	109_061020	10 Jun 2020 09:40			20 Jun 2020 03:38	1
HS20060547-06	MW10_061020	10 Jun 2020 10:35			20 Jun 2020 01:14	1
HS20060547-08	MW18_061020	10 Jun 2020 12:15			19 Jun 2020 21:39	1
Batch ID: R363690 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060547-10	Trip Blank	10 Jun 2020 00:00			20 Jun 2020 13:26	1
Batch ID: R363690 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060547-02	18CPTMW04_061020	10 Jun 2020 07:55			20 Jun 2020 17:25	5
HS20060547-03	18CPTMW04_061020_a	10 Jun 2020 07:55			20 Jun 2020 17:49	5
HS20060547-04	MW3_061020	10 Jun 2020 08:50			20 Jun 2020 18:13	5
HS20060547-05	109_061020	10 Jun 2020 09:40			20 Jun 2020 18:37	5
Batch ID: R363724 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060547-09	130_061020	10 Jun 2020 13:10			22 Jun 2020 15:04	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R364087 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060547-01	18CPTMW04SW_061020	10 Jun 2020 07:10			29 Jun 2020 10:16	1
HS20060547-02	18CPTMW04_061020	10 Jun 2020 07:55			29 Jun 2020 10:16	1
HS20060547-03	18CPTMW04_061020_a	10 Jun 2020 07:55			29 Jun 2020 10:16	1
HS20060547-04	MW3_061020	10 Jun 2020 08:50			29 Jun 2020 10:16	1
HS20060547-05	109_061020	10 Jun 2020 09:40			29 Jun 2020 10:16	1
HS20060547-06	MW10_061020	10 Jun 2020 10:35			29 Jun 2020 10:16	1
HS20060547-07	MW17_061020	10 Jun 2020 11:25			29 Jun 2020 10:16	1
HS20060547-08	MW18_061020	10 Jun 2020 12:15			29 Jun 2020 10:16	1
HS20060547-09	130_061020	10 Jun 2020 13:10			29 Jun 2020 10:16	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:17**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631768** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.01444	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:11**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631766** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1015	0.0100	0.1	0	102	84 - 117				
Antimony	0.04728	0.00500	0.05	0	94.6	85 - 117				
Arsenic	0.04981	0.00500	0.05	0	99.6	84 - 116				
Barium	0.04994	0.00500	0.05	0	99.9	86 - 114				
Beryllium	0.04585	0.00200	0.05	0	91.7	83 - 121				
Cadmium	0.05017	0.00200	0.05	0	100	87 - 115				
Calcium	4.661	0.500	5	0	93.2	87 - 118				
Chromium	0.04826	0.00500	0.05	0	96.5	85 - 116				
Cobalt	0.04736	0.00500	0.05	0	94.7	86 - 115				
Copper	0.04996	0.00500	0.05	0	99.9	85 - 118				
Iron	4.755	0.200	5	0	95.1	87 - 118				
Lead	0.04742	0.00500	0.05	0	94.8	88 - 115				
Magnesium	4.798	0.200	5	0	96.0	83 - 118				
Manganese	0.04969	0.00500	0.05	0	99.4	87 - 115				
Nickel	0.04892	0.00500	0.05	0	97.8	85 - 117				
Potassium	4.943	0.200	5	0	98.9	87 - 115				
Selenium	0.05066	0.00500	0.05	0	101	80 - 120				
Silver	0.05015	0.00500	0.05	0	100	85 - 116				
Sodium	4.799	0.200	5	0	96.0	85 - 117				
Thallium	0.04521	0.00200	0.05	0	90.4	82 - 116				
Vanadium	0.04764	0.00500	0.05	0	95.3	86 - 115				
Zinc	0.05144	0.00500	0.05	0	103	83 - 119				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:25**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631771** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1005	0.0100	0.1	0.01494	85.6	84 - 117				
Antimony	0.04623	0.00500	0.05	0.000146	92.2	85 - 117				
Arsenic	0.04858	0.00500	0.05	0.001705	93.7	84 - 116				
Barium	1.182	0.00500	0.05	1.246	-128	86 - 114				SO
Beryllium	0.04288	0.00200	0.05	0.000021	85.7	83 - 121				
Cadmium	0.04562	0.00200	0.05	0.000129	91.0	87 - 115				
Calcium	45.9	0.500	5	44.32	31.8	87 - 118				SO
Chromium	0.04607	0.00500	0.05	0.000391	91.4	85 - 116				
Cobalt	0.04474	0.00500	0.05	0.000124	89.2	86 - 115				
Copper	0.04601	0.00500	0.05	0.000742	90.5	85 - 118				
Iron	68.61	0.200	5	68.38	4.67	87 - 118				SO
Lead	0.04545	0.00500	0.05	0.000052	90.8	88 - 115				
Magnesium	27.58	0.200	5	24.18	67.9	83 - 118				SO
Manganese	1.197	0.00500	0.05	1.223	-51.8	87 - 115				SO
Nickel	0.04623	0.00500	0.05	0.000426	91.6	85 - 117				
Selenium	0.04772	0.00500	0.05	-0.00002	95.5	80 - 120				
Silver	0.04538	0.00500	0.05	0.000008	90.7	85 - 116				
Sodium	142.4	0.200	5	143.5	-22.6	85 - 117				SO
Thallium	0.0425	0.00200	0.05	-0.000005	85.0	82 - 116				
Vanadium	0.04535	0.00500	0.05	-0.001238	93.2	86 - 115				
Zinc	0.05116	0.00500	0.05	0.006271	89.8	83 - 119				

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 14:49**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631885** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Potassium	7.851	0.200	5	3.206	92.9	87 - 115				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060498-08MSD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:27**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631772** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1026	0.0100	0.1	0.01494	87.6	84 - 117	0.1005	2	20	
Antimony	0.04773	0.00500	0.05	0.000146	95.2	85 - 117	0.04623	3.2	20	
Arsenic	0.05012	0.00500	0.05	0.001705	96.8	84 - 116	0.04858	3.13	20	
Barium	1.21	0.00500	0.05	1.246	-70.5	86 - 114	1.182	2.4	20	SO
Beryllium	0.04311	0.00200	0.05	0.000021	86.2	83 - 121	0.04288	0.551	20	
Cadmium	0.04831	0.00200	0.05	0.000129	96.4	87 - 115	0.04562	5.74	20	
Calcium	47.19	0.500	5	44.32	57.5	87 - 118	45.9	2.76	20	SO
Chromium	0.04751	0.00500	0.05	0.000391	94.2	85 - 116	0.04607	3.09	20	
Cobalt	0.0458	0.00500	0.05	0.000124	91.4	86 - 115	0.04474	2.34	20	
Copper	0.04698	0.00500	0.05	0.000742	92.5	85 - 118	0.04601	2.09	20	
Iron	70.93	0.200	5	68.38	51.1	87 - 118	68.61	3.33	20	SO
Lead	0.04948	0.00500	0.05	0.000052	98.8	88 - 115	0.04545	8.48	20	
Magnesium	28.33	0.200	5	24.18	83.0	83 - 118	27.58	2.69	20	SO
Manganese	1.223	0.00500	0.05	1.223	0.370	87 - 115	1.197	2.16	20	SO
Nickel	0.04705	0.00500	0.05	0.000426	93.3	85 - 117	0.04623	1.76	20	
Potassium	7.723	0.200	5	3.206	90.3	87 - 115	7.551	2.25	20	
Selenium	0.0485	0.00500	0.05	-0.00002	97.0	80 - 120	0.04772	1.6	20	
Silver	0.04658	0.00500	0.05	0.000008	93.1	85 - 116	0.04538	2.61	20	
Sodium	146.4	0.200	5	143.5	57.2	85 - 117	142.4	2.76	20	SO
Thallium	0.04759	0.00200	0.05	-0.000005	95.2	82 - 116	0.0425	11.3	20	
Vanadium	0.04655	0.00500	0.05	-0.001238	95.6	86 - 115	0.04535	2.63	20	
Zinc	0.0528	0.00500	0.05	0.006271	93.1	83 - 119	0.05116	3.15	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060498-08PDS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:30**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631773** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1148	0.0100	0.1	0.01494	99.8	80 - 120				
Antimony	0.09919	0.00500	0.1	0.000146	99.0	80 - 120				
Arsenic	0.113	0.00500	0.1	0.001705	111	80 - 120				
Barium	1.204	0.00500	0.1	1.246	-41.6	80 - 120				SO
Beryllium	0.0962	0.00200	0.1	0.000021	96.2	80 - 120				
Cadmium	0.106	0.00200	0.1	0.000129	106	80 - 120				
Calcium	51.24	0.500	10	44.32	69.3	80 - 120				SO
Chromium	0.1086	0.00500	0.1	0.000391	108	80 - 120				
Cobalt	0.106	0.00500	0.1	0.000124	106	80 - 120				
Copper	0.1089	0.00500	0.1	0.000742	108	80 - 120				
Iron	73.82	0.200	10	68.38	54.4	80 - 120				SO
Lead	0.1057	0.00500	0.1	0.000052	106	80 - 120				
Magnesium	32.8	0.200	10	24.18	86.2	80 - 120				
Manganese	1.229	0.00500	0.1	1.223	5.63	80 - 120				SO
Nickel	0.109	0.00500	0.1	0.000426	109	80 - 120				
Potassium	13.74	0.200	10	3.206	105	80 - 120				
Selenium	0.1125	0.00500	0.1	-0.00002	113	80 - 120				
Silver	0.1003	0.00500	0.1	0.000008	100	80 - 120				
Sodium	144.2	0.200	10	143.5	7.08	80 - 120				SO
Thallium	0.1096	0.00200	0.1	-0.000005	110	80 - 120				
Vanadium	0.11	0.00500	0.1	-0.001238	111	80 - 120				
Zinc	0.1178	0.00500	0.1	0.006271	111	80 - 120				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060498-08SD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:22**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631770** PrepDate: **19-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.02193	0.0500					0.01494	0	10	J
Antimony	0.00250	0.0250					0.000146	0	10	U
Arsenic	0.00250	0.0250					0.001705	0	10	U
Barium	1.206	0.0250					1.246	3.18	10	
Beryllium	0.00250	0.0100					0.000021	0	10	U
Cadmium	0.00250	0.0100					0.000129	0	10	U
Calcium	43.81	2.50					44.32	1.14	10	
Chromium	0.00250	0.0250					0.000391	0	10	U
Cobalt	0.00250	0.0250					0.000124	0	10	U
Copper	0.0125	0.0250					0.000742	0	10	U
Iron	70.45	1.00					68.38	3.04	10	
Lead	0.00500	0.0250					0.000052	0	10	U
Magnesium	24.9	1.00					24.18	2.98	10	
Manganese	1.246	0.0250					1.223	1.88	10	
Nickel	0.00500	0.0250					0.000426	0	10	U
Potassium	3.055	1.00					3.206	4.72	10	
Selenium	0.0125	0.0250					-0.00002	0	10	U
Silver	0.00250	0.0250					0.000008	0	10	U
Sodium	146.1	1.00					143.5	1.83	10	
Thallium	0.00250	0.0100					-0.000005	0	10	U
Vanadium	0.00500	0.0250					-0.001238	0	10	U
Zinc	0.0125	0.0250					0.006271	0	10	U

The following samples were analyzed in this batch: HS20060547-01 HS20060547-04 HS20060547-09

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154667 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:43**
Client ID: Run ID: **HG03_363622** SeqNo: **5627969** PrepDate: **19-Jun-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-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:45**
Client ID: Run ID: **HG03_363622** SeqNo: **5627970** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00496	0.000200	0.005	0	99.2	82 - 119				

MS Sample ID: **HS20060498-07MS** Units: **mg/L** Analysis Date: **19-Jun-2020 15:48**
Client ID: Run ID: **HG03_363622** SeqNo: **5627972** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00516	0.000200	0.005	0.00001600	103	82 - 119				

MSD Sample ID: **HS20060498-07MSD** Units: **mg/L** Analysis Date: **19-Jun-2020 15:50**
Client ID: Run ID: **HG03_363622** SeqNo: **5627973** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	0.00001600	102	82 - 119	0.005160	0.778	20	

The following samples were analyzed in this batch: HS20060547-01 HS20060547-04 HS20060547-09

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: 154567 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 11:33**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640909** PrepDate: **17-Jun-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	*0.07389*	*0*	*0.08*	*0*	*92.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0807*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07132*	*0*	*0.08*	*0*	*89.2*	*40 - 140*				

LCS Sample ID: **LCS-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 11:53**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640910** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08076	0.010	0.08	0	101	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08048*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08046*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08358*	*0*	*0.08*	*0*	*104*	*40 - 140*				

LCSD Sample ID: **LCSD-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 12:12**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640911** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08746	0.010	0.08	0	109	40 - 140	0.08076	7.96	20	
Surr: 2-Fluorobiphenyl	*0.08039*	*0*	*0.08*	*0*	*100*	*40 - 140*	*0.08048*	*0.109*	*20*	
Surr: 4-Terphenyl-d14	*0.07969*	*0*	*0.08*	*0*	*99.6*	*40 - 140*	*0.08046*	*0.957*	*20*	
Surr: Nitrobenzene-d5	*0.07613*	*0*	*0.08*	*0*	*95.2*	*40 - 140*	*0.08358*	*9.33*	*20*	

The following samples were analyzed in this batch: HS20060547-01 HS20060547-02 HS20060547-03 HS20060547-05 HS20060547-06 HS20060547-07

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 20:03**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629692** 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 20:03**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629692** 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	*48.42*	*1.0*	*50*	*0*	*96.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.5*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*48.03*	*1.0*	*50*	*0*	*96.1*	*80 - 119*				
Surr: Toluene-d8	*54.19*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 18:51**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629691** 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	20.91	1.0	20	0	105	78 - 124				
1,1,1-Trichloroethane	20.99	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	20.63	1.0	20	0	103	71 - 121				
1,1,2-Trichloroethane	21.14	1.0	20	0	106	80 - 119				
1,1-Dichloroethane	20.36	1.0	20	0	102	77 - 125				
1,1-Dichloroethene	20.98	1.0	20	0	105	71 - 131				
1,1-Dichloropropene	20.52	1.0	20	0	103	78 - 125				
1,2,3-Trichlorobenzene	27.99	1.0	20	0	140	69 - 129				S
1,2,3-Trichloropropane	19.8	1.0	20	0	99.0	73 - 122				
1,2,4-Trichlorobenzene	24.94	1.0	20	0	125	69 - 130				
1,2,4-Trimethylbenzene	20.23	1.0	20	0	101	76 - 124				
1,2-Dibromo-3-chloropropane	21.34	1.0	20	0	107	62 - 128				
1,2-Dibromoethane	21.2	1.0	20	0	106	77 - 121				
1,2-Dichlorobenzene	21.15	1.0	20	0	106	80 - 119				
1,2-Dichloroethane	21.37	1.0	20	0	107	73 - 128				
1,2-Dichloropropane	21.49	1.0	20	0	107	78 - 122				
1,3,5-Trimethylbenzene	20.53	1.0	20	0	103	75 - 124				
1,3-Dichlorobenzene	20.31	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	20.5	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	20.02	1.0	20	0	100	79 - 118				
2,2-Dichloropropane	21.27	1.0	20	0	106	60 - 139				
2-Butanone	39.19	2.0	40	0	98.0	56 - 143				
2-Chlorotoluene	19.65	1.0	20	0	98.2	79 - 122				
2-Hexanone	42.69	2.0	40	0	107	57 - 139				
4-Chlorotoluene	19.86	1.0	20	0	99.3	78 - 122				
4-Isopropyltoluene	20.39	1.0	20	0	102	77 - 127				
4-Methyl-2-pentanone	42.17	2.0	40	0	105	67 - 130				
Acetone	40.16	2.0	40	0	100	39 - 160				
Benzene	21.03	1.0	20	0	105	79 - 120				
Bromobenzene	19.77	1.0	20	0	98.8	80 - 120				
Bromochloromethane	20.21	1.0	20	0	101	78 - 123				
Bromodichloromethane	21.15	1.0	20	0	106	79 - 125				
Bromoform	21.28	1.0	20	0	106	66 - 130				
Bromomethane	22.53	1.0	20	0	113	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200619** Units: **UG/L** Analysis Date: **19-Jun-2020 18:51**
Client ID: Run ID: **VOA6_363681** SeqNo: **5629691** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	41.99	2.0	40	0	105	64 - 133				
Carbon tetrachloride	19.8	1.0	20	0	99.0	72 - 136				
Chlorobenzene	20.62	1.0	20	0	103	82 - 118				
Chloroethane	20.12	1.0	20	0	101	60 - 138				
Chloroform	20.83	1.0	20	0	104	79 - 124				
Chloromethane	20.88	1.0	20	0	104	50 - 139				
cis-1,2-Dichloroethene	20.87	1.0	20	0	104	78 - 123				
cis-1,3-Dichloropropene	21.16	1.0	20	0	106	75 - 124				
Dibromochloromethane	21.22	1.0	20	0	106	74 - 126				
Dibromomethane	20.86	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	19.59	1.0	20	0	98.0	32 - 152				
Ethylbenzene	20.42	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	25.04	1.0	20	0	125	66 - 134				
Isopropylbenzene	20.79	1.0	20	0	104	72 - 131				
m,p-Xylene	42.02	2.0	40	0	105	80 - 121				
Methylene chloride	20	2.0	20	0	100	74 - 124				
Naphthalene	25.37	1.0	20	0	127	61 - 128				
n-Butylbenzene	20.17	1.0	20	0	101	75 - 128				
n-Propylbenzene	20.28	1.0	20	0	101	76 - 126				
o-Xylene	20.98	1.0	20	0	105	78 - 122				
sec-Butylbenzene	20.04	1.0	20	0	100	77 - 126				
Styrene	21.28	1.0	20	0	106	78 - 123				
tert-Butylbenzene	20.3	1.0	20	0	102	78 - 124				
Tetrachloroethene	20.66	1.0	20	0	103	74 - 129				
Toluene	21.12	1.0	20	0	106	80 - 121				
trans-1,2-Dichloroethene	21.45	1.0	20	0	107	75 - 124				
trans-1,3-Dichloropropene	21.13	1.0	20	0	106	73 - 127				
Trichloroethene	20.88	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	21.23	1.0	20	0	106	65 - 141				
Vinyl chloride	20.33	1.0	20	0	102	58 - 137				
Surr: 1,2-Dichloroethane-d4	*53.72*	*1.0*	*50*	*0*	*107*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.13*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*51.5*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*51.85*	*1.0*	*50*	*0*	*104*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060547-08MS** Units: **UG/L** Analysis Date: **19-Jun-2020 22:50**
Client ID: **MW18_061020** Run ID: **VOA6_363681** SeqNo: **5629699** 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	19.8	1.0	20	0	99.0	78 - 124				
1,1,1-Trichloroethane	20.75	1.0	20	0	104	74 - 131				
1,1,2,2-Tetrachloroethane	19.32	1.0	20	0	96.6	71 - 121				
1,1,2-Trichloroethane	19.93	1.0	20	0	99.6	80 - 119				
1,1-Dichloroethane	19.39	1.0	20	0	97.0	77 - 125				
1,1-Dichloroethene	21.06	1.0	20	0	105	71 - 131				
1,1-Dichloropropene	20.16	1.0	20	0	101	78 - 125				
1,2,3-Trichlorobenzene	10.03	1.0	20	0	50.1	69 - 129				S
1,2,3-Trichloropropane	18.64	1.0	20	0	93.2	73 - 122				
1,2,4-Trichlorobenzene	11.59	1.0	20	0	58.0	69 - 130				S
1,2,4-Trimethylbenzene	20.7	1.0	20	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	14.75	1.0	20	0	73.8	62 - 128				
1,2-Dibromoethane	19.39	1.0	20	0	96.9	77 - 121				
1,2-Dichlorobenzene	19.6	1.0	20	0	98.0	80 - 119				
1,2-Dichloroethane	19.68	1.0	20	0	98.4	73 - 128				
1,2-Dichloropropane	19.8	1.0	20	0	99.0	78 - 122				
1,3,5-Trimethylbenzene	21.62	1.0	20	0	108	75 - 124				
1,3-Dichlorobenzene	20.04	1.0	20	0	100	80 - 119				
1,3-Dichloropropane	19.74	1.0	20	0	98.7	80 - 119				
1,4-Dichlorobenzene	19.68	1.0	20	0	98.4	79 - 118				
2,2-Dichloropropane	19.01	1.0	20	0	95.1	60 - 139				
2-Butanone	32.03	2.0	40	0	80.1	56 - 143				
2-Chlorotoluene	20.75	1.0	20	0	104	79 - 122				
2-Hexanone	38.48	2.0	40	0	96.2	57 - 139				
4-Chlorotoluene	20.66	1.0	20	0	103	78 - 122				
4-Isopropyltoluene	21.28	1.0	20	0	106	77 - 127				
4-Methyl-2-pentanone	38.7	2.0	40	0	96.7	67 - 130				
Acetone	32.2	2.0	40	0	80.5	39 - 160				
Benzene	20.05	1.0	20	0	100	79 - 120				
Bromobenzene	20.29	1.0	20	0	101	80 - 120				
Bromochloromethane	18.89	1.0	20	0	94.5	78 - 123				
Bromodichloromethane	20.12	1.0	20	0	101	79 - 125				
Bromoform	18.47	1.0	20	0	92.3	66 - 130				
Bromomethane	14.28	1.0	20	0	71.4	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060547-08MS** Units: **UG/L** Analysis Date: **19-Jun-2020 22:50**
Client ID: **MW18_061020** Run ID: **VOA6_363681** SeqNo: **5629699** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	39.93	2.0	40	0	99.8	64 - 133				
Carbon tetrachloride	19.97	1.0	20	0	99.8	72 - 136				
Chlorobenzene	20.11	1.0	20	0	101	82 - 118				
Chloroethane	19.07	1.0	20	0	95.3	60 - 138				
Chloroform	19.84	1.0	20	0	99.2	79 - 124				
Chloromethane	24.95	1.0	20	0	125	50 - 139				
cis-1,2-Dichloroethene	26.78	1.0	20	0.8624	130	78 - 123				S
cis-1,3-Dichloropropene	19.6	1.0	20	0	98.0	75 - 124				
Dibromochloromethane	19.64	1.0	20	0	98.2	74 - 126				
Dibromomethane	18.75	1.0	20	0	93.7	79 - 123				
Dichlorodifluoromethane	14.8	1.0	20	0	74.0	32 - 152				
Ethylbenzene	20.46	1.0	20	0	102	79 - 121				
Hexachlorobutadiene	12.91	1.0	20	0	64.5	66 - 134				S
Isopropylbenzene	21.05	1.0	20	0	105	72 - 131				
m,p-Xylene	41.25	2.0	40	0	103	80 - 121				
Methylene chloride	38.53	2.0	20	0	193	74 - 124				S
Naphthalene	11.17	1.0	20	0	55.9	61 - 128				S
n-Butylbenzene	20.91	1.0	20	0	105	75 - 128				
n-Propylbenzene	21.71	1.0	20	0	109	76 - 126				
o-Xylene	20.62	1.0	20	0	103	78 - 122				
sec-Butylbenzene	21.79	1.0	20	0	109	77 - 126				
Styrene	20.5	1.0	20	0	103	78 - 123				
tert-Butylbenzene	22.01	1.0	20	0	110	78 - 124				
Tetrachloroethene	21.13	1.0	20	0	106	74 - 129				
Toluene	20.5	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	20.76	1.0	20	0	104	75 - 124				
trans-1,3-Dichloropropene	19.31	1.0	20	0	96.5	73 - 127				
Trichloroethene	36.65	1.0	20	15.13	108	79 - 123				
Trichlorofluoromethane	20.8	1.0	20	0	104	65 - 141				
Vinyl chloride	18.49	1.0	20	0	92.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*51.2*	*1.0*	*50*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.95*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*51.94*	*1.0*	*50*	*0*	*104*	*80 - 119*				
Surr: Toluene-d8	*54.01*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060547-08MSD** Units: **UG/L** Analysis Date: **19-Jun-2020 23:14**
Client ID: **MW18_061020** Run ID: **VOA6_363681** SeqNo: **5629700** 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	19.76	1.0	20	0	98.8	78 - 124	19.8	0.194	20	
1,1,1-Trichloroethane	20.08	1.0	20	0	100	74 - 131	20.75	3.3	20	
1,1,2,2-Tetrachloroethane	19.3	1.0	20	0	96.5	71 - 121	19.32	0.104	20	
1,1,2-Trichloroethane	19.4	1.0	20	0	97.0	80 - 119	19.93	2.66	20	
1,1-Dichloroethane	18.24	1.0	20	0	91.2	77 - 125	19.39	6.12	20	
1,1-Dichloroethene	20	1.0	20	0	100.0	71 - 131	21.06	5.19	20	
1,1-Dichloropropene	20.78	1.0	20	0	104	78 - 125	20.16	3.04	20	
1,2,3-Trichlorobenzene	14.44	1.0	20	0	72.2	69 - 129	10.03	36.1	20	R
1,2,3-Trichloropropane	18.48	1.0	20	0	92.4	73 - 122	18.64	0.867	20	
1,2,4-Trichlorobenzene	14.2	1.0	20	0	71.0	69 - 130	11.59	20.2	20	R
1,2,4-Trimethylbenzene	21.75	1.0	20	0	109	76 - 124	20.7	4.95	20	
1,2-Dibromo-3-chloropropane	14.69	1.0	20	0	73.5	62 - 128	14.75	0.423	20	
1,2-Dibromoethane	19.67	1.0	20	0	98.3	77 - 121	19.39	1.43	20	
1,2-Dichlorobenzene	19.54	1.0	20	0	97.7	80 - 119	19.6	0.336	20	
1,2-Dichloroethane	19.23	1.0	20	0	96.2	73 - 128	19.68	2.31	20	
1,2-Dichloropropane	20.19	1.0	20	0	101	78 - 122	19.8	1.93	20	
1,3,5-Trimethylbenzene	22.55	1.0	20	0	113	75 - 124	21.62	4.2	20	
1,3-Dichlorobenzene	20.43	1.0	20	0	102	80 - 119	20.04	1.94	20	
1,3-Dichloropropane	19.52	1.0	20	0	97.6	80 - 119	19.74	1.12	20	
1,4-Dichlorobenzene	19.78	1.0	20	0	98.9	79 - 118	19.68	0.528	20	
2,2-Dichloropropane	17.5	1.0	20	0	87.5	60 - 139	19.01	8.27	20	
2-Butanone	30.39	2.0	40	0	76.0	56 - 143	32.03	5.25	20	
2-Chlorotoluene	21.24	1.0	20	0	106	79 - 122	20.75	2.34	20	
2-Hexanone	38.78	2.0	40	0	97.0	57 - 139	38.48	0.774	20	
4-Chlorotoluene	21.25	1.0	20	0	106	78 - 122	20.66	2.82	20	
4-Isopropyltoluene	22.96	1.0	20	0	115	77 - 127	21.28	7.59	20	
4-Methyl-2-pentanone	39.14	2.0	40	0	97.8	67 - 130	38.7	1.14	20	
Acetone	29.74	2.0	40	0	74.4	39 - 160	32.2	7.93	20	
Benzene	20.1	1.0	20	0	100	79 - 120	20.05	0.214	20	
Bromobenzene	20.31	1.0	20	0	102	80 - 120	20.29	0.0503	20	
Bromochloromethane	16.94	1.0	20	0	84.7	78 - 123	18.89	10.9	20	
Bromodichloromethane	19.65	1.0	20	0	98.3	79 - 125	20.12	2.34	20	
Bromoform	18.91	1.0	20	0	94.6	66 - 130	18.47	2.4	20	
Bromomethane	15.54	1.0	20	0	77.7	53 - 141	14.28	8.43	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060547-08MSD** Units: **UG/L** Analysis Date: **19-Jun-2020 23:14**
Client ID: **MW18_061020** Run ID: **VOA6_363681** SeqNo: **5629700** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	38.93	2.0	40	0	97.3	64 - 133	39.93	2.53	20	
Carbon tetrachloride	21.4	1.0	20	0	107	72 - 136	19.97	6.94	20	
Chlorobenzene	20.14	1.0	20	0	101	82 - 118	20.11	0.15	20	
Chloroethane	18.28	1.0	20	0	91.4	60 - 138	19.07	4.24	20	
Chloroform	18.48	1.0	20	0	92.4	79 - 124	19.84	7.1	20	
Chloromethane	20.37	1.0	20	0	102	50 - 139	24.95	20.2	20	R
cis-1,2-Dichloroethene	21.08	1.0	20	0.8624	101	78 - 123	26.78	23.8	20	R
cis-1,3-Dichloropropene	19.39	1.0	20	0	96.9	75 - 124	19.6	1.11	20	
Dibromochloromethane	19.59	1.0	20	0	98.0	74 - 126	19.64	0.233	20	
Dibromomethane	18.75	1.0	20	0	93.8	79 - 123	18.75	0.0384	20	
Dichlorodifluoromethane	15.03	1.0	20	0	75.2	32 - 152	14.8	1.54	20	
Ethylbenzene	20.89	1.0	20	0	104	79 - 121	20.46	2.07	20	
Hexachlorobutadiene	17.41	1.0	20	0	87.1	66 - 134	12.91	29.7	20	R
Isopropylbenzene	22.36	1.0	20	0	112	72 - 131	21.05	6.04	20	
m,p-Xylene	42.98	2.0	40	0	107	80 - 121	41.25	4.11	20	
Methylene chloride	21.7	2.0	20	0	109	74 - 124	38.53	55.9	20	R
Naphthalene	15.61	1.0	20	0	78.0	61 - 128	11.17	33.1	20	R
n-Butylbenzene	22.93	1.0	20	0	115	75 - 128	20.91	9.2	20	
n-Propylbenzene	22.9	1.0	20	0	115	76 - 126	21.71	5.35	20	
o-Xylene	20.71	1.0	20	0	104	78 - 122	20.62	0.44	20	
sec-Butylbenzene	23.24	1.0	20	0	116	77 - 126	21.79	6.42	20	
Styrene	20.79	1.0	20	0	104	78 - 123	20.5	1.42	20	
tert-Butylbenzene	23.09	1.0	20	0	115	78 - 124	22.01	4.78	20	
Tetrachloroethene	22.33	1.0	20	0	112	74 - 129	21.13	5.53	20	
Toluene	21.11	1.0	20	0	106	80 - 121	20.5	2.95	20	
trans-1,2-Dichloroethene	19.6	1.0	20	0	98.0	75 - 124	20.76	5.74	20	
trans-1,3-Dichloropropene	18.69	1.0	20	0	93.5	73 - 127	19.31	3.24	20	
Trichloroethene	37.34	1.0	20	15.13	111	79 - 123	36.65	1.85	20	
Trichlorofluoromethane	20.24	1.0	20	0	101	65 - 141	20.8	2.72	20	
Vinyl chloride	17.89	1.0	20	0	89.5	58 - 137	18.49	3.27	20	
Surr: 1,2-Dichloroethane-d4	*48.28*	*1.0*	*50*	*0*	*96.6*	*81 - 118*	*51.2*	*5.86*	*20*	
Surr: 4-Bromofluorobenzene	*51.27*	*1.0*	*50*	*0*	*103*	*85 - 114*	*50.95*	*0.641*	*20*	
Surr: Dibromofluoromethane	*48.1*	*1.0*	*50*	*0*	*96.2*	*80 - 119*	*51.94*	*7.69*	*20*	
Surr: Toluene-d8	*54.98*	*1.0*	*50*	*0*	*110*	*89 - 112*	*54.01*	*1.78*	*20*	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363681 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20060547-01	HS20060547-02	HS20060547-03	HS20060547-04
HS20060547-05	HS20060547-06	HS20060547-08	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 13:02**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629824** 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 13:02**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629824** 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	*47.97*	*1.0*	*50*	*0*	*95.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.44*	*1.0*	*50*	*0*	*96.9*	*85 - 114*				
Surr: Dibromofluoromethane	*48.46*	*1.0*	*50*	*0*	*96.9*	*80 - 119*				
Surr: Toluene-d8	*52.49*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 12:14**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629823** 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	20.55	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	20.11	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	20.31	1.0	20	0	102	71 - 121				
1,1,2-Trichloroethane	20.55	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	19.29	1.0	20	0	96.5	77 - 125				
1,1-Dichloroethene	19.03	1.0	20	0	95.2	71 - 131				
1,1-Dichloropropene	19.24	1.0	20	0	96.2	78 - 125				
1,2,3-Trichlorobenzene	23.75	1.0	20	0	119	69 - 129				
1,2,3-Trichloropropane	19.77	1.0	20	0	98.8	73 - 122				
1,2,4-Trichlorobenzene	23.95	1.0	20	0	120	69 - 130				
1,2,4-Trimethylbenzene	19.9	1.0	20	0	99.5	76 - 124				
1,2-Dibromo-3-chloropropane	19.75	1.0	20	0	98.7	62 - 128				
1,2-Dibromoethane	20.98	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.5	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	20.54	1.0	20	0	103	73 - 128				
1,2-Dichloropropane	21.2	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	20.5	1.0	20	0	102	75 - 124				
1,3-Dichlorobenzene	20.11	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	20.73	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.05	1.0	20	0	100	79 - 118				
2,2-Dichloropropane	19.69	1.0	20	0	98.5	60 - 139				
2-Butanone	37.08	2.0	40	0	92.7	56 - 143				
2-Chlorotoluene	19.84	1.0	20	0	99.2	79 - 122				
2-Hexanone	42.02	2.0	40	0	105	57 - 139				
4-Chlorotoluene	19.99	1.0	20	0	99.9	78 - 122				
4-Isopropyltoluene	20.75	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	41.69	2.0	40	0	104	67 - 130				
Acetone	42.99	2.0	40	0	107	39 - 160				
Benzene	20.42	1.0	20	0	102	79 - 120				
Bromobenzene	20.02	1.0	20	0	100	80 - 120				
Bromochloromethane	19.28	1.0	20	0	96.4	78 - 123				
Bromodichloromethane	20.73	1.0	20	0	104	79 - 125				
Bromoform	20.31	1.0	20	0	102	66 - 130				
Bromomethane	19.86	1.0	20	0	99.3	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 12:14**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629823** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	39.61	2.0	40	0	99.0	64 - 133				
Carbon tetrachloride	18.94	1.0	20	0	94.7	72 - 136				
Chlorobenzene	20.37	1.0	20	0	102	82 - 118				
Chloroethane	19.63	1.0	20	0	98.1	60 - 138				
Chloroform	19.93	1.0	20	0	99.6	79 - 124				
Chloromethane	19.99	1.0	20	0	100.0	50 - 139				
cis-1,2-Dichloroethene	19.8	1.0	20	0	99.0	78 - 123				
cis-1,3-Dichloropropene	20.89	1.0	20	0	104	75 - 124				
Dibromochloromethane	20.46	1.0	20	0	102	74 - 126				
Dibromomethane	20.4	1.0	20	0	102	79 - 123				
Dichlorodifluoromethane	18.98	1.0	20	0	94.9	32 - 152				
Ethylbenzene	19.53	1.0	20	0	97.6	79 - 121				
Hexachlorobutadiene	26.94	1.0	20	0	135	66 - 134				S
Isopropylbenzene	20.46	1.0	20	0	102	72 - 131				
m,p-Xylene	41.36	2.0	40	0	103	80 - 121				
Methylene chloride	18.85	2.0	20	0	94.2	74 - 124				
Naphthalene	22.08	1.0	20	0	110	61 - 128				
n-Butylbenzene	20.98	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.13	1.0	20	0	101	76 - 126				
o-Xylene	20.43	1.0	20	0	102	78 - 122				
sec-Butylbenzene	20.51	1.0	20	0	103	77 - 126				
Styrene	20.54	1.0	20	0	103	78 - 123				
tert-Butylbenzene	20.33	1.0	20	0	102	78 - 124				
Tetrachloroethene	20.54	1.0	20	0	103	74 - 129				
Toluene	20.63	1.0	20	0	103	80 - 121				
trans-1,2-Dichloroethene	20.67	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.42	1.0	20	0	102	73 - 127				
Trichloroethene	20.29	1.0	20	0	101	79 - 123				
Trichlorofluoromethane	20.06	1.0	20	0	100	65 - 141				
Vinyl chloride	18.98	1.0	20	0	94.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.52*	*1.0*	*50*	*0*	*99.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.3*	*1.0*	*50*	*0*	*98.6*	*85 - 114*				
Surr: Dibromofluoromethane	*49.47*	*1.0*	*50*	*0*	*98.9*	*80 - 119*				
Surr: Toluene-d8	*50.6*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060659-05MS** Units: **UG/L** Analysis Date: **20-Jun-2020 15:49**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629831** 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	20.27	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	21.09	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	19.63	1.0	20	0	98.1	71 - 121				
1,1,2-Trichloroethane	20.54	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	21.24	1.0	20	1.886	96.8	77 - 125				
1,1-Dichloroethene	22.03	1.0	20	0	110	71 - 131				
1,1-Dichloropropene	20.81	1.0	20	0	104	78 - 125				
1,2,3-Trichlorobenzene	10.23	1.0	20	0	51.2	69 - 129				S
1,2,3-Trichloropropane	19.19	1.0	20	0	95.9	73 - 122				
1,2,4-Trichlorobenzene	12.37	1.0	20	0	61.8	69 - 130				S
1,2,4-Trimethylbenzene	21.8	1.0	20	0	109	76 - 124				
1,2-Dibromo-3-chloropropane	14.89	1.0	20	0	74.5	62 - 128				
1,2-Dibromoethane	20.45	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.31	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.4	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	21.22	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	22.64	1.0	20	0	113	75 - 124				
1,3-Dichlorobenzene	21.58	1.0	20	0.7075	104	80 - 119				
1,3-Dichloropropane	20.34	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	20.66	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	19.75	1.0	20	0	98.8	60 - 139				
2-Butanone	32.16	2.0	40	0	80.4	56 - 143				
2-Chlorotoluene	21.51	1.0	20	0	108	79 - 122				
2-Hexanone	38.57	2.0	40	0	96.4	57 - 139				
4-Chlorotoluene	21.75	1.0	20	0	109	78 - 122				
4-Isopropyltoluene	22.59	1.0	20	0	113	77 - 127				
4-Methyl-2-pentanone	38.59	2.0	40	0	96.5	67 - 130				
Acetone	31.63	2.0	40	0	79.1	39 - 160				
Benzene	21.07	1.0	20	0	105	79 - 120				
Bromobenzene	21.11	1.0	20	0	106	80 - 120				
Bromochloromethane	18.64	1.0	20	0	93.2	78 - 123				
Bromodichloromethane	20.98	1.0	20	0	105	79 - 125				
Bromoform	20.12	1.0	20	0	101	66 - 130				
Bromomethane	19.28	1.0	20	0	96.4	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060659-05MS** Units: **UG/L** Analysis Date: **20-Jun-2020 15:49**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629831** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	40.81	2.0	40	0	102	64 - 133				
Carbon tetrachloride	21.37	1.0	20	0	107	72 - 136				
Chlorobenzene	20.4	1.0	20	0	102	82 - 118				
Chloroethane	19.67	1.0	20	0	98.3	60 - 138				
Chloroform	19.7	1.0	20	0	98.5	79 - 124				
Chloromethane	19.24	1.0	20	0	96.2	50 - 139				
cis-1,2-Dichloroethene	26.42	1.0	20	6.401	100	78 - 123				
cis-1,3-Dichloropropene	20.73	1.0	20	0	104	75 - 124				
Dibromochloromethane	20.33	1.0	20	0	102	74 - 126				
Dibromomethane	19.82	1.0	20	0	99.1	79 - 123				
Dichlorodifluoromethane	17.66	1.0	20	0	88.3	32 - 152				
Ethylbenzene	21.36	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	14.71	1.0	20	0	73.6	66 - 134				
Isopropylbenzene	22.54	1.0	20	0	113	72 - 131				
m,p-Xylene	43.39	2.0	40	0	108	80 - 121				
Methylene chloride	17.59	2.0	20	0	88.0	74 - 124				
Naphthalene	11.9	1.0	20	0	59.5	61 - 128				S
n-Butylbenzene	22.76	1.0	20	0	114	75 - 128				
n-Propylbenzene	22.91	1.0	20	0	115	76 - 126				
o-Xylene	21.12	1.0	20	0	106	78 - 122				
sec-Butylbenzene	23.05	1.0	20	0	115	77 - 126				
Styrene	20.61	1.0	20	0	103	78 - 123				
tert-Butylbenzene	23.02	1.0	20	0	115	78 - 124				
Tetrachloroethene	22.33	1.0	20	0	112	74 - 129				
Toluene	21.56	1.0	20	0	108	80 - 121				
trans-1,2-Dichloroethene	20.64	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.16	1.0	20	0	101	73 - 127				
Trichloroethene	41.46	1.0	20	19.02	112	79 - 123				
Trichlorofluoromethane	21.86	1.0	20	0	109	65 - 141				
Vinyl chloride	20.61	1.0	20	0.9419	98.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.26*	*1.0*	*50*	*0*	*98.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.77*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*49.92*	*1.0*	*50*	*0*	*99.8*	*80 - 119*				
Surr: Toluene-d8	*54.02*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060659-05MSD** Units: **UG/L** Analysis Date: **20-Jun-2020 16:13**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629832** 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	21.11	1.0	20	0	106	78 - 124	20.27	4.04	20	
1,1,1-Trichloroethane	20.83	1.0	20	0	104	74 - 131	21.09	1.22	20	
1,1,2,2-Tetrachloroethane	19.9	1.0	20	0	99.5	71 - 121	19.63	1.39	20	
1,1,2-Trichloroethane	20.45	1.0	20	0	102	80 - 119	20.54	0.412	20	
1,1-Dichloroethane	20.04	1.0	20	1.886	90.8	77 - 125	21.24	5.83	20	
1,1-Dichloroethene	20.99	1.0	20	0	105	71 - 131	22.03	4.87	20	
1,1-Dichloropropene	21.58	1.0	20	0	108	78 - 125	20.81	3.62	20	
1,2,3-Trichlorobenzene	15.19	1.0	20	0	76.0	69 - 129	10.23	39	20	R
1,2,3-Trichloropropane	19.07	1.0	20	0	95.3	73 - 122	19.19	0.614	20	
1,2,4-Trichlorobenzene	15.22	1.0	20	0	76.1	69 - 130	12.37	20.7	20	R
1,2,4-Trimethylbenzene	22.39	1.0	20	0	112	76 - 124	21.8	2.65	20	
1,2-Dibromo-3-chloropropane	15.62	1.0	20	0	78.1	62 - 128	14.89	4.8	20	
1,2-Dibromoethane	19.9	1.0	20	0	99.5	77 - 121	20.45	2.69	20	
1,2-Dichlorobenzene	20.43	1.0	20	0	102	80 - 119	20.31	0.591	20	
1,2-Dichloroethane	19.66	1.0	20	0	98.3	73 - 128	20.4	3.72	20	
1,2-Dichloropropane	20.75	1.0	20	0	104	78 - 122	21.22	2.23	20	
1,3,5-Trimethylbenzene	23.62	1.0	20	0	118	75 - 124	22.64	4.26	20	
1,3-Dichlorobenzene	22.28	1.0	20	0.7075	108	80 - 119	21.58	3.22	20	
1,3-Dichloropropane	19.76	1.0	20	0	98.8	80 - 119	20.34	2.89	20	
1,4-Dichlorobenzene	20.7	1.0	20	0	104	79 - 118	20.66	0.201	20	
2,2-Dichloropropane	19.09	1.0	20	0	95.4	60 - 139	19.75	3.43	20	
2-Butanone	29.98	2.0	40	0	75.0	56 - 143	32.16	7	20	
2-Chlorotoluene	22.15	1.0	20	0	111	79 - 122	21.51	2.93	20	
2-Hexanone	38.46	2.0	40	0	96.2	57 - 139	38.57	0.273	20	
4-Chlorotoluene	22.18	1.0	20	0	111	78 - 122	21.75	1.96	20	
4-Isopropyltoluene	24.23	1.0	20	0	121	77 - 127	22.59	7	20	
4-Methyl-2-pentanone	38.26	2.0	40	0	95.6	67 - 130	38.59	0.862	20	
Acetone	29.46	2.0	40	0	73.6	39 - 160	31.63	7.13	20	
Benzene	21.11	1.0	20	0	106	79 - 120	21.07	0.188	20	
Bromobenzene	20.57	1.0	20	0	103	80 - 120	21.11	2.58	20	
Bromochloromethane	17.37	1.0	20	0	86.8	78 - 123	18.64	7.05	20	
Bromodichloromethane	20.4	1.0	20	0	102	79 - 125	20.98	2.79	20	
Bromoform	19.64	1.0	20	0	98.2	66 - 130	20.12	2.41	20	
Bromomethane	18.82	1.0	20	0	94.1	53 - 141	19.28	2.4	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060659-05MSD** Units: **UG/L** Analysis Date: **20-Jun-2020 16:13**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629832** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	40.43	2.0	40	0	101	64 - 133	40.81	0.944	20	
Carbon tetrachloride	21.98	1.0	20	0	110	72 - 136	21.37	2.83	20	
Chlorobenzene	20.97	1.0	20	0	105	82 - 118	20.4	2.77	20	
Chloroethane	18.56	1.0	20	0	92.8	60 - 138	19.67	5.83	20	
Chloroform	18.74	1.0	20	0	93.7	79 - 124	19.7	4.98	20	
Chloromethane	18.08	1.0	20	0	90.4	50 - 139	19.24	6.18	20	
cis-1,2-Dichloroethene	24.73	1.0	20	6.401	91.6	78 - 123	26.42	6.62	20	
cis-1,3-Dichloropropene	20.35	1.0	20	0	102	75 - 124	20.73	1.81	20	
Dibromochloromethane	20.11	1.0	20	0	101	74 - 126	20.33	1.09	20	
Dibromomethane	19.31	1.0	20	0	96.5	79 - 123	19.82	2.62	20	
Dichlorodifluoromethane	17.85	1.0	20	0	89.3	32 - 152	17.66	1.08	20	
Ethylbenzene	21.6	1.0	20	0	108	79 - 121	21.36	1.13	20	
Hexachlorobutadiene	18.44	1.0	20	0	92.2	66 - 134	14.71	22.5	20	R
Isopropylbenzene	23.14	1.0	20	0	116	72 - 131	22.54	2.61	20	
m,p-Xylene	44.95	2.0	40	0	112	80 - 121	43.39	3.54	20	
Methylene chloride	16.63	2.0	20	0	83.2	74 - 124	17.59	5.61	20	
Naphthalene	15.95	1.0	20	0	79.8	61 - 128	11.9	29.1	20	R
n-Butylbenzene	24.13	1.0	20	0	121	75 - 128	22.76	5.82	20	
n-Propylbenzene	24.11	1.0	20	0	121	76 - 126	22.91	5.07	20	
o-Xylene	21.18	1.0	20	0	106	78 - 122	21.12	0.302	20	
sec-Butylbenzene	24.66	1.0	20	0	123	77 - 126	23.05	6.77	20	
Styrene	20.55	1.0	20	0	103	78 - 123	20.61	0.273	20	
tert-Butylbenzene	24.03	1.0	20	0	120	78 - 124	23.02	4.29	20	
Tetrachloroethene	23.84	1.0	20	0	119	74 - 129	22.33	6.52	20	
Toluene	21.95	1.0	20	0	110	80 - 121	21.56	1.8	20	
trans-1,2-Dichloroethene	20.19	1.0	20	0	101	75 - 124	20.64	2.23	20	
trans-1,3-Dichloropropene	19.48	1.0	20	0	97.4	73 - 127	20.16	3.45	20	
Trichloroethene	41.43	1.0	20	19.02	112	79 - 123	41.46	0.0705	20	
Trichlorofluoromethane	21.89	1.0	20	0	109	65 - 141	21.86	0.16	20	
Vinyl chloride	20.28	1.0	20	0.9419	96.7	58 - 137	20.61	1.65	20	
Surr: 1,2-Dichloroethane-d4	*45.57*	*1.0*	*50*	*0*	*91.1*	*81 - 118*	*49.26*	*7.77*	*20*	
Surr: 4-Bromofluorobenzene	*51.02*	*1.0*	*50*	*0*	*102*	*85 - 114*	*50.77*	*0.486*	*20*	
Surr: Dibromofluoromethane	*47.5*	*1.0*	*50*	*0*	*95.0*	*80 - 119*	*49.92*	*4.97*	*20*	
Surr: Toluene-d8	*54.63*	*1.0*	*50*	*0*	*109*	*89 - 112*	*54.02*	*1.13*	*20*	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363690 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:				
HS20060547-02	HS20060547-03	HS20060547-04	HS20060547-05	
HS20060547-10				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200622** Units: **UG/L** Analysis Date: **22-Jun-2020 12:40**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630807** 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-200622** Units: **UG/L** Analysis Date: **22-Jun-2020 12:40**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630807** 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	*43.17*	*1.0*	*50*	*0*	*86.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*43.03*	*1.0*	*50*	*0*	*86.1*	*85 - 114*				
Surr: Dibromofluoromethane	*43.29*	*1.0*	*50*	*0*	*86.6*	*80 - 119*				
Surr: Toluene-d8	*47.24*	*1.0*	*50*	*0*	*94.5*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200622** Units: **UG/L** Analysis Date: **22-Jun-2020 11:52**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630806** 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				
1,1,1-Trichloroethane	21.28	1.0	20	0	106	74 - 131				
1,1,2,2-Tetrachloroethane	20.13	1.0	20	0	101	71 - 121				
1,1,2-Trichloroethane	20.52	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	20.62	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	20.57	1.0	20	0	103	71 - 131				
1,1-Dichloropropene	20.24	1.0	20	0	101	78 - 125				
1,2,3-Trichlorobenzene	19.2	1.0	20	0	96.0	69 - 129				
1,2,3-Trichloropropane	19.31	1.0	20	0	96.5	73 - 122				
1,2,4-Trichlorobenzene	19.05	1.0	20	0	95.2	69 - 130				
1,2,4-Trimethylbenzene	21.03	1.0	20	0	105	76 - 124				
1,2-Dibromo-3-chloropropane	16.76	1.0	20	0	83.8	62 - 128				
1,2-Dibromoethane	20.47	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.18	1.0	20	0	101	80 - 119				
1,2-Dichloroethane	21.07	1.0	20	0	105	73 - 128				
1,2-Dichloropropane	21.68	1.0	20	0	108	78 - 122				
1,3,5-Trimethylbenzene	21.49	1.0	20	0	107	75 - 124				
1,3-Dichlorobenzene	20.66	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	20.49	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	20.2	1.0	20	0	101	79 - 118				
2,2-Dichloropropane	21.34	1.0	20	0	107	60 - 139				
2-Butanone	34.86	2.0	40	0	87.2	56 - 143				
2-Chlorotoluene	21.04	1.0	20	0	105	79 - 122				
2-Hexanone	38.32	2.0	40	0	95.8	57 - 139				
4-Chlorotoluene	20.88	1.0	20	0	104	78 - 122				
4-Isopropyltoluene	21.24	1.0	20	0	106	77 - 127				
4-Methyl-2-pentanone	38.33	2.0	40	0	95.8	67 - 130				
Acetone	39.42	2.0	40	0	98.5	39 - 160				
Benzene	21.17	1.0	20	0	106	79 - 120				
Bromobenzene	20.52	1.0	20	0	103	80 - 120				
Bromochloromethane	20.68	1.0	20	0	103	78 - 123				
Bromodichloromethane	21.59	1.0	20	0	108	79 - 125				
Bromoform	20.09	1.0	20	0	100	66 - 130				
Bromomethane	21.35	1.0	20	0	107	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200622** Units: **UG/L** Analysis Date: **22-Jun-2020 11:52**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630806** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.11	2.0	40	0	105	64 - 133				
Carbon tetrachloride	20.09	1.0	20	0	100	72 - 136				
Chlorobenzene	20.83	1.0	20	0	104	82 - 118				
Chloroethane	21.05	1.0	20	0	105	60 - 138				
Chloroform	21.3	1.0	20	0	106	79 - 124				
Chloromethane	21.54	1.0	20	0	108	50 - 139				
cis-1,2-Dichloroethene	21.05	1.0	20	0	105	78 - 123				
cis-1,3-Dichloropropene	21.88	1.0	20	0	109	75 - 124				
Dibromochloromethane	21.08	1.0	20	0	105	74 - 126				
Dibromomethane	20.78	1.0	20	0	104	79 - 123				
Dichlorodifluoromethane	19.3	1.0	20	0	96.5	32 - 152				
Ethylbenzene	20.58	1.0	20	0	103	79 - 121				
Hexachlorobutadiene	23.91	1.0	20	0	120	66 - 134				
Isopropylbenzene	20.99	1.0	20	0	105	72 - 131				
m,p-Xylene	42.49	2.0	40	0	106	80 - 121				
Methylene chloride	20.7	2.0	20	0	103	74 - 124				
Naphthalene	17.28	1.0	20	0	86.4	61 - 128				
n-Butylbenzene	21.21	1.0	20	0	106	75 - 128				
n-Propylbenzene	21.37	1.0	20	0	107	76 - 126				
o-Xylene	21.42	1.0	20	0	107	78 - 122				
sec-Butylbenzene	21.08	1.0	20	0	105	77 - 126				
Styrene	20.73	1.0	20	0	104	78 - 123				
tert-Butylbenzene	21.21	1.0	20	0	106	78 - 124				
Tetrachloroethene	20.84	1.0	20	0	104	74 - 129				
Toluene	20.99	1.0	20	0	105	80 - 121				
trans-1,2-Dichloroethene	21.58	1.0	20	0	108	75 - 124				
trans-1,3-Dichloropropene	21.36	1.0	20	0	107	73 - 127				
Trichloroethene	21.53	1.0	20	0	108	79 - 123				
Trichlorofluoromethane	21.5	1.0	20	0	108	65 - 141				
Vinyl chloride	20.07	1.0	20	0	100	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.75*	*1.0*	*50*	*0*	*99.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.53*	*1.0*	*50*	*0*	*95.1*	*85 - 114*				
Surr: Dibromofluoromethane	*50.72*	*1.0*	*50*	*0*	*101*	*80 - 119*				
Surr: Toluene-d8	*49.39*	*1.0*	*50*	*0*	*98.8*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060846-02MS** Units: **UG/L** Analysis Date: **22-Jun-2020 16:16**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630809** 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	21.37	1.0	20	0	107	78 - 124				
1,1,1-Trichloroethane	19.02	1.0	20	0	95.1	74 - 131				
1,1,2,2-Tetrachloroethane	19.97	1.0	20	0	99.9	71 - 121				
1,1,2-Trichloroethane	20.06	1.0	20	0	100	80 - 119				
1,1-Dichloroethane	17.39	1.0	20	0	86.9	77 - 125				
1,1-Dichloroethene	19.95	1.0	20	1.416	92.7	71 - 131				
1,1-Dichloropropene	20.47	1.0	20	0	102	78 - 125				
1,2,3-Trichlorobenzene	9.95	1.0	20	0	49.8	69 - 129				S
1,2,3-Trichloropropane	18.59	1.0	20	0	92.9	73 - 122				
1,2,4-Trichlorobenzene	10.51	1.0	20	0	52.6	69 - 130				S
1,2,4-Trimethylbenzene	22.93	1.0	20	0	115	76 - 124				
1,2-Dibromo-3-chloropropane	13.08	1.0	20	0	65.4	62 - 128				
1,2-Dibromoethane	19.29	1.0	20	0	96.5	77 - 121				
1,2-Dichlorobenzene	20.34	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	19.46	1.0	20	0	97.3	73 - 128				
1,2-Dichloropropane	20.22	1.0	20	0	101	78 - 122				
1,3,5-Trimethylbenzene	23.89	1.0	20	0	119	75 - 124				
1,3-Dichlorobenzene	21.63	1.0	20	0	108	80 - 119				
1,3-Dichloropropane	20.17	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	21.14	1.0	20	0	106	79 - 118				
2,2-Dichloropropane	18.68	1.0	20	0	93.4	60 - 139				
2-Butanone	25.26	2.0	40	0	63.1	56 - 143				
2-Chlorotoluene	23.1	1.0	20	0	115	79 - 122				
2-Hexanone	33.85	2.0	40	0	84.6	57 - 139				
4-Chlorotoluene	23.16	1.0	20	0	116	78 - 122				
4-Isopropyltoluene	23.73	1.0	20	0	119	77 - 127				
4-Methyl-2-pentanone	34.75	2.0	40	0	86.9	67 - 130				
Acetone	24.9	2.0	40	0	62.3	39 - 160				
Benzene	20.66	1.0	20	0	103	79 - 120				
Bromobenzene	22.01	1.0	20	0	110	80 - 120				
Bromochloromethane	16.23	1.0	20	0	81.1	78 - 123				
Bromodichloromethane	19.91	1.0	20	0	99.6	79 - 125				
Bromoform	18.76	1.0	20	0	93.8	66 - 130				
Bromomethane	18.22	1.0	20	0	91.1	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060846-02MS** Units: **UG/L** Analysis Date: **22-Jun-2020 16:16**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630809** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	36.15	2.0	40	0	90.4	64 - 133				
Carbon tetrachloride	20.71	1.0	20	0	104	72 - 136				
Chlorobenzene	20.93	1.0	20	0	105	82 - 118				
Chloroethane	17	1.0	20	0	85.0	60 - 138				
Chloroform	17.86	1.0	20	0	89.3	79 - 124				
Chloromethane	15.8	1.0	20	0	79.0	50 - 139				
cis-1,2-Dichloroethene	17.74	1.0	20	0	88.7	78 - 123				
cis-1,3-Dichloropropene	19.82	1.0	20	0	99.1	75 - 124				
Dibromochloromethane	19.64	1.0	20	0	98.2	74 - 126				
Dibromomethane	18.85	1.0	20	0	94.3	79 - 123				
Dichlorodifluoromethane	14.16	1.0	20	0	70.8	32 - 152				
Ethylbenzene	21.57	1.0	20	0	108	79 - 121				
Hexachlorobutadiene	12.48	1.0	20	0	62.4	66 - 134				S
Isopropylbenzene	22.66	1.0	20	0	113	72 - 131				
m,p-Xylene	44.16	2.0	40	0	110	80 - 121				
Methylene chloride	15.72	2.0	20	0	78.6	74 - 124				
Naphthalene	16.56	1.0	20	0	82.8	61 - 128				
n-Butylbenzene	23.15	1.0	20	0	116	75 - 128				
n-Propylbenzene	24.36	1.0	20	0	122	76 - 126				
o-Xylene	21.96	1.0	20	0	110	78 - 122				
sec-Butylbenzene	23.95	1.0	20	0	120	77 - 126				
Styrene	20.94	1.0	20	0	105	78 - 123				
tert-Butylbenzene	24.32	1.0	20	0	122	78 - 124				
Tetrachloroethene	26.37	1.0	20	4.149	111	74 - 129				
Toluene	21.85	1.0	20	0	109	80 - 121				
trans-1,2-Dichloroethene	18.56	1.0	20	0	92.8	75 - 124				
trans-1,3-Dichloropropene	18.93	1.0	20	0	94.7	73 - 127				
Trichloroethene	22.09	1.0	20	1.422	103	79 - 123				
Trichlorofluoromethane	19.28	1.0	20	0	96.4	65 - 141				
Vinyl chloride	16.81	1.0	20	0	84.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*39.89*	*1.0*	*50*	*0*	*79.8*	*81 - 118*				S
Surr: 4-Bromofluorobenzene	*48.04*	*1.0*	*50*	*0*	*96.1*	*85 - 114*				
Surr: Dibromofluoromethane	*43.85*	*1.0*	*50*	*0*	*87.7*	*80 - 119*				
Surr: Toluene-d8	*55*	*1.0*	*50*	*0*	*110*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060846-02MSD** Units: **UG/L** Analysis Date: **22-Jun-2020 16:40**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630810** 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	20.32	1.0	20	0	102	78 - 124	21.37	5.04	20	
1,1,1-Trichloroethane	19.19	1.0	20	0	95.9	74 - 131	19.02	0.894	20	
1,1,2,2-Tetrachloroethane	18.91	1.0	20	0	94.5	71 - 121	19.97	5.49	20	
1,1,2-Trichloroethane	19.27	1.0	20	0	96.3	80 - 119	20.06	4.03	20	
1,1-Dichloroethane	17.25	1.0	20	0	86.2	77 - 125	17.39	0.807	20	
1,1-Dichloroethene	20.77	1.0	20	1.416	96.8	71 - 131	19.95	4.03	20	
1,1-Dichloropropene	20.91	1.0	20	0	105	78 - 125	20.47	2.13	20	
1,2,3-Trichlorobenzene	10.95	1.0	20	0	54.7	69 - 129	9.95	9.55	20	S
1,2,3-Trichloropropane	17.79	1.0	20	0	89.0	73 - 122	18.59	4.35	20	
1,2,4-Trichlorobenzene	12.1	1.0	20	0	60.5	69 - 130	10.51	14	20	S
1,2,4-Trimethylbenzene	22.5	1.0	20	0	112	76 - 124	22.93	1.9	20	
1,2-Dibromo-3-chloropropane	13.31	1.0	20	0	66.6	62 - 128	13.08	1.77	20	
1,2-Dibromoethane	19.25	1.0	20	0	96.3	77 - 121	19.29	0.198	20	
1,2-Dichlorobenzene	19.39	1.0	20	0	97.0	80 - 119	20.34	4.76	20	
1,2-Dichloroethane	18.5	1.0	20	0	92.5	73 - 128	19.46	5.03	20	
1,2-Dichloropropane	19.65	1.0	20	0	98.3	78 - 122	20.22	2.83	20	
1,3,5-Trimethylbenzene	23.64	1.0	20	0	118	75 - 124	23.89	1.09	20	
1,3-Dichlorobenzene	20.77	1.0	20	0	104	80 - 119	21.63	4.08	20	
1,3-Dichloropropane	19.17	1.0	20	0	95.8	80 - 119	20.17	5.06	20	
1,4-Dichlorobenzene	20.17	1.0	20	0	101	79 - 118	21.14	4.7	20	
2,2-Dichloropropane	18.68	1.0	20	0	93.4	60 - 139	18.68	0.0306	20	
2-Butanone	24.47	2.0	40	0	61.2	56 - 143	25.26	3.15	20	
2-Chlorotoluene	22.21	1.0	20	0	111	79 - 122	23.1	3.93	20	
2-Hexanone	33.26	2.0	40	0	83.1	57 - 139	33.85	1.76	20	
4-Chlorotoluene	22.32	1.0	20	0	112	78 - 122	23.16	3.72	20	
4-Isopropyltoluene	23.76	1.0	20	0	119	77 - 127	23.73	0.125	20	
4-Methyl-2-pentanone	34.67	2.0	40	0	86.7	67 - 130	34.75	0.232	20	
Acetone	23.56	2.0	40	0	58.9	39 - 160	24.9	5.52	20	
Benzene	19.67	1.0	20	0	98.4	79 - 120	20.66	4.88	20	
Bromobenzene	20.93	1.0	20	0	105	80 - 120	22.01	5.03	20	
Bromochloromethane	15.66	1.0	20	0	78.3	78 - 123	16.23	3.52	20	
Bromodichloromethane	19.11	1.0	20	0	95.6	79 - 125	19.91	4.08	20	
Bromoform	18.3	1.0	20	0	91.5	66 - 130	18.76	2.45	20	
Bromomethane	18.13	1.0	20	0	90.7	53 - 141	18.22	0.486	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060547

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060846-02MSD** Units: **UG/L** Analysis Date: **22-Jun-2020 16:40**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630810** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.12	2.0	40	0	92.8	64 - 133	36.15	2.66	20	
Carbon tetrachloride	20.78	1.0	20	0	104	72 - 136	20.71	0.348	20	
Chlorobenzene	20.46	1.0	20	0	102	82 - 118	20.93	2.24	20	
Chloroethane	17.65	1.0	20	0	88.3	60 - 138	17	3.73	20	
Chloroform	17.66	1.0	20	0	88.3	79 - 124	17.86	1.13	20	
Chloromethane	15.71	1.0	20	0	78.6	50 - 139	15.8	0.515	20	
cis-1,2-Dichloroethene	17.66	1.0	20	0	88.3	78 - 123	17.74	0.486	20	
cis-1,3-Dichloropropene	19.06	1.0	20	0	95.3	75 - 124	19.82	3.91	20	
Dibromochloromethane	19.08	1.0	20	0	95.4	74 - 126	19.64	2.89	20	
Dibromomethane	18.05	1.0	20	0	90.2	79 - 123	18.85	4.36	20	
Dichlorodifluoromethane	14.73	1.0	20	0	73.7	32 - 152	14.16	3.94	20	
Ethylbenzene	21.69	1.0	20	0	108	79 - 121	21.57	0.541	20	
Hexachlorobutadiene	15.49	1.0	20	0	77.4	66 - 134	12.48	21.5	20	R
Isopropylbenzene	22.84	1.0	20	0	114	72 - 131	22.66	0.793	20	
m,p-Xylene	43.66	2.0	40	0	109	80 - 121	44.16	1.15	20	
Methylene chloride	15.54	2.0	20	0	77.7	74 - 124	15.72	1.14	20	
Naphthalene	13.34	1.0	20	0	66.7	61 - 128	16.56	21.6	20	R
n-Butylbenzene	23.56	1.0	20	0	118	75 - 128	23.15	1.76	20	
n-Propylbenzene	24.18	1.0	20	0	121	76 - 126	24.36	0.725	20	
o-Xylene	21.24	1.0	20	0	106	78 - 122	21.96	3.34	20	
sec-Butylbenzene	24.36	1.0	20	0	122	77 - 126	23.95	1.73	20	
Styrene	20.65	1.0	20	0	103	78 - 123	20.94	1.41	20	
tert-Butylbenzene	23.96	1.0	20	0	120	78 - 124	24.32	1.51	20	
Tetrachloroethene	26.96	1.0	20	4.149	114	74 - 129	26.37	2.21	20	
Toluene	21.78	1.0	20	0	109	80 - 121	21.85	0.324	20	
trans-1,2-Dichloroethene	19.07	1.0	20	0	95.3	75 - 124	18.56	2.7	20	
trans-1,3-Dichloropropene	18.38	1.0	20	0	91.9	73 - 127	18.93	2.96	20	
Trichloroethene	22.29	1.0	20	1.422	104	79 - 123	22.09	0.883	20	
Trichlorofluoromethane	19.83	1.0	20	0	99.2	65 - 141	19.28	2.83	20	
Vinyl chloride	17.36	1.0	20	0	86.8	58 - 137	16.81	3.2	20	
Surr: 1,2-Dichloroethane-d4	*40.72*	*1.0*	*50*	*0*	*81.4*	*81 - 118*	*39.89*	*2.05*	*20*	
Surr: 4-Bromofluorobenzene	*48.8*	*1.0*	*50*	*0*	*97.6*	*85 - 114*	*48.04*	*1.57*	*20*	
Surr: Dibromofluoromethane	*43.23*	*1.0*	*50*	*0*	*86.5*	*80 - 119*	*43.85*	*1.43*	*20*	
Surr: Toluene-d8	*55.07*	*1.0*	*50*	*0*	*110*	*89 - 112*	*55*	*0.113*	*20*	

ALS Houston, US Date: 29-Jun-20

Client:	Bhate Environmental Associates, Inc.
Project:	LHAAP 18 24
WorkOrder:	HS20060547

QC BATCH REPORT

Batch ID:	**R363724 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch: HS20060547-09

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060547**

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
Illinois	2000322020-4	09-May-2021
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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060547

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060547-01	18CPTMW04SW_061020	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-01	18CPTMW04SW_061020	Login	6/11/2020 3:32:04 PM	RPM	EXT005
HS20060547-01	18CPTMW04SW_061020	Login	6/11/2020 3:32:04 PM	RPM	VOA187
HS20060547-02	18CPTMW04_061020	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-02	18CPTMW04_061020	Login	6/11/2020 3:32:04 PM	RPM	EXT005
HS20060547-03	18CPTMW04_061020_a	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-03	18CPTMW04_061020_a	Login	6/11/2020 3:32:04 PM	RPM	EXT005
HS20060547-03	18CPTMW04_061020_a	Login	6/11/2020 3:32:04 PM	RPM	VOA187
HS20060547-04	MW3_061020	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-04	MW3_061020	Login	6/11/2020 3:32:04 PM	RPM	VOA187
HS20060547-05	109_061020	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-05	109_061020	Login	6/11/2020 3:32:04 PM	RPM	VOA187
HS20060547-06	MW10_061020	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-06	MW10_061020	Login	6/11/2020 3:32:04 PM	RPM	EXT005
HS20060547-06	MW10_061020	Login	6/11/2020 3:32:04 PM	RPM	VOA187
HS20060547-07	MW17_061020	Login	6/11/2020 3:32:04 PM	RPM	MET018
HS20060547-07	MW17_061020	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-07	MW17_061020	Login	6/11/2020 3:32:04 PM	RPM	EXT005
HS20060547-07	MW17_061020	Login	6/11/2020 3:32:04 PM	RPM	VOA187
HS20060547-09	130_061020	Login	6/11/2020 3:32:04 PM	RPM	MET018
HS20060547-09	130_061020	Login	6/11/2020 3:32:04 PM	RPM	Sub
HS20060547-09	130_061020	Login	6/11/2020 3:32:04 PM	RPM	EXT005
HS20060547-09	130_061020	Login	6/11/2020 3:32:04 PM	RPM	VOA187
HS20060547-10	Trip Blank	Login	6/11/2020 3:32:04 PM	RPM	VOA187

ALS Houston, US Date: 29-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060547 **Date/Time Received:** 11-Jun-2020 09:35

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

Completed By: /S/ RJ Modashia 11-Jun-2020 15:53 **Reviewed by:** /S/ Corey Grandits 12-Jun-2020 13:27

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):	3.1°C/3.1°C UC/C	IR25
Cooler(s)/Kit(s):	44901	
Date/Time sample(s) sent to storage:	06/11/2020 11:00AM	

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

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate

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

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) | Quality Assurance Samples (6)

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	1,4 - DIOXANE							Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Cooler ID
18CPTmwHSW_061020	10 Jun 2020	0710	-	N		WG	6	X	X	X	X									
18CPTmw04_061020	10 Jun 2020	0755	-	N		WG	5	X	X		X									
18CPTmw04_061020_a	10 Jun 2020	0755	-	FD		WG	5	X	X		X									
MW3_061020	10 Jun 2020	0850		N		WG	5	X	X	X										
109_061020	10 Jun 2020	0940		N		WG	5	X	X		X									
MW10_061020	10 Jun 2020	1035	-	N		WG	5	X	X		X									
MW17_061020	10 Jun 2020	1125	-	N		WG	2		X		X									
MW18_061020	10 Jun 2020	1215	-	N		WG	4	X	X											
MW18_061020_MS	10 Jun 2020	1215	-	MS		WG	4	X	X											
MW18_061020_MSD	10 Jun 2020	1215	-	SD		WG	4	X	X											
130_061020	10 Jun 2020	1310	-	N		WG	5	X	X	X										

HS20060547

Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS: ____

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/10/20	1430	1. J Mueller	6/11/20	0735
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 Stanelift 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 (-t) Sample, FD = Field Duplicate (-s) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-c)

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

Cooler 44119 1125
Temp 0.7°C CF0.2

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): ____

UMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

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	1, 4 - DIOXANE						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)			
TRIP BLANK	10 JAN 2020		-	TB		W	2	Y												
			-																	
			-																	
			-																	
			-																	
			-																	
			-																	
			-																	
			-																	

COMMENTS: ____

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/10/20	1430	1. J. Newsom	6/11/20	09:35
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 Stanglift 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 (-t) 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 (-c)

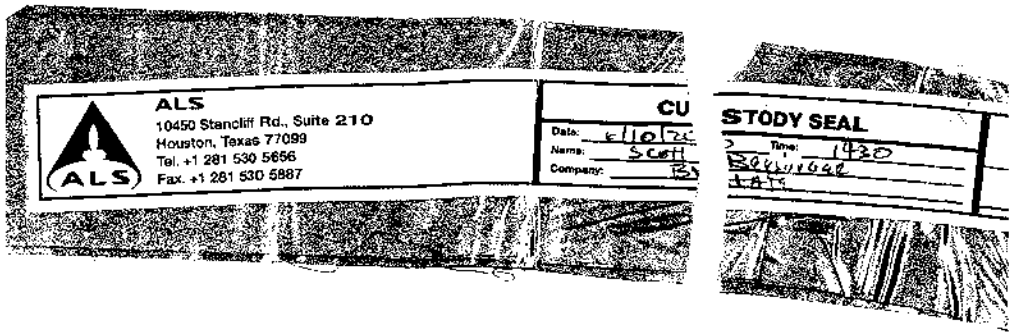
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

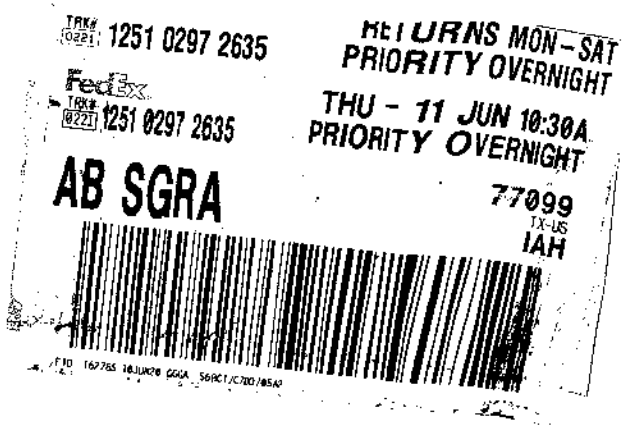
4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

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 101099-01 in the Equipment Blank Lot Control

Cooler 44/19 1.2.3
Temp 0.7°C CF 0.0


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
CU
Date: 6/10/21
Name: SCOTT
Company:
STODY SEAL
Time: 1430


TRK# 0221 1251 0297 2635
RETURNS MON-SAT
PRIORITY OVERNIGHT
FedEx
TRK# 0221 1251 0297 2635
THU - 11 JUN 10:30A
PRIORITY OVERNIGHT
AB SGRA
77099
TX-US
IAH

June 29, 2020 Service Request No:E2000537

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

Laboratory Results for: HS20060547

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 12, 2020
For your reference, these analyses have been assigned our service request number **E2000537.**

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.:**	E2000537
Project:	HS20060547	**Date Received:**	06/12/20
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

Nine samples were received for analysis at ALS Environmental in Houston on 06/12/20.

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:

EQ2000244: 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/DLCS/MS/MSD 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.

Client: ALS Environmental - US **Service Request:**E2000537

Project: HS20060547

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000537-001	18CPTMW04SW_061020	6/10/2020	0710
E2000537-002	18CPTMW04_061020	6/10/2020	0755
E2000537-003	18CPTMW04_061020_a	6/10/2020	0755
E2000537-004	MW3_061020	6/10/2020	0850
E2000537-005	109_061020	6/10/2020	0940
E2000537-006	MW10_061020	6/10/2020	1035
E2000537-007	MW17_061020	6/10/2020	1125
E2000537-008	MW18_061020	6/10/2020	1215
E2000537-009	130_061020	6/10/2020	1310

Service Request Summary

Folder #: **E2000537**
Client Name: ALS Environmental - US
Project Name: HS20060547
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: 06/12/20
Internal Due Date: 6/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060547
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000537-001	18CPTMW04SW_061020	Ground Water	06/10/20 0710	**IV**
E2000537-002	18CPTMW04_061020	Ground Water	06/10/20 0755	**IV**
E2000537-003	18CPTMW04_061020_a	Ground Water	06/10/20 0755	**IV**
E2000537-004	MW3_061020	Ground Water	06/10/20 0850	**IV**
E2000537-005	109_061020	Ground Water	06/10/20 0940	**IV**
E2000537-006	MW10_061020	Ground Water	06/10/20 1035	**IV**
E2000537-007	MW17_061020	Ground Water	06/10/20 1125	**IV**
E2000537-008	MW18_061020	Ground Water	06/10/20 1215	**IV**
E2000537-009	130_061020	Ground Water	06/10/20 1310	**IV**

Service Request Summary

Folder #: **E2000537**
Client Name: ALS Environmental - US
Project Name: HS20060547
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: 06/12/20
Internal Due Date: 6/25/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060547
EDD: No EDD Specified

11 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	8	Level IV due 7/2,level II 6/25
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD Level IV due 7/2,level II 6/25

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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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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www.alsglobal.com

E2000537 5
ALS Laboratory Group
HS20060547

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 14089

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:	HS20060547
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060547-01**	**18CPTMW04SW_061020**	**Groundwater**	**10 Jun 2020 07:10**
	SUB_Perch-6850			25 Jun 2020
2.	**HS20060547-02**	**18CPTMW04_061020**	**Groundwater**	**10 Jun 2020 07:55**
	SUB_Perch-6850			25 Jun 2020
3.	**HS20060547-03**	**18CPTMW04_061020_a**	**Groundwater**	**10 Jun 2020 07:55**
	SUB_Perch-6850			25 Jun 2020
4.	**HS20060547-04**	**MW3_061020**	**Groundwater**	**10 Jun 2020 08:50**
	SUB_Perch-6850			25 Jun 2020
5.	**HS20060547-05**	**109_061020**	**Groundwater**	**10 Jun 2020 09:40**
	SUB_Perch-6850			25 Jun 2020
6.	**HS20060547-06**	**MW10_061020**	**Groundwater**	**10 Jun 2020 10:35**
	SUB_Perch-6850			25 Jun 2020
7.	**HS20060547-07**	**MW17_061020**	**Groundwater**	**10 Jun 2020 11:25**
	SUB_Perch-6850			25 Jun 2020
8.	**HS20060547-08**	**MW18_061020**	**Groundwater**	**10 Jun 2020 12:15**
	SUB_Perch-6850	MS/MSD		25 Jun 2020
9.	**HS20060547-09**	**130_061020**	**Groundwater**	**10 Jun 2020 13:10**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14089**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
SUB_Perch-6850			25 Jun 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: NV Date/Time:

Received By: Date/Time: 6/12/20 1400

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALY-H1

Thermometer ID IR24

Date/Time Received: 6/12/20 Initials: CH

Date/Time Logged in: 6/12/20 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

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?
-		6/12/20	1400	CH	2.4	☒
						☐
						☐
						☐

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:

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Houston, TX 77099
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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
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Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 360258 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/18/20 09:11

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000537-001	18CPTMW04SW_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000537-002	18CPTMW04_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000537-003	18CPTMW04_061020_a	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000537-004	MW3_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000537-005	109_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000537-006	MW10_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000537-007	MW17_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000537-008	MW18_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000537-009	130_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000540-001	MW2_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000540-002	MW2_061020_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000540-003	18CPTMW01DW_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000540-004	18CPTMW01SW_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000540-005	MW22_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000540-006	18CPTMW06_061020	.01	6850/ClO4 DOD			Ground Water	10mL	
16	EQ2000244-01	MB		6850/ClO4 DOD			Liquid	10mL	
17	EQ2000244-02	LCS		6850/ClO4 DOD			Liquid	10mL	
18	EQ2000244-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000244-04	MW18_061020 MS	.01	6850/ClO4 DOD			Liquid	10mL	
20	EQ2000244-05	MW18_061020 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

EQ2000244-01 100.00µL EQ2000244-02 100.00µL EQ2000244-03 100.00µL EQ2000244-04 100.00µL EQ2000244-05 100.00µL

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

EQ2000244-02 1.00µL EQ2000244-03 1.00µL EQ2000244-04 1.00µL EQ2000244-05 1.00µL

Preparation Information Benchsheet

Prep Run#: 360258
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/18/20 09:11

Preparation Steps

Step: Preparation
Started: 6/18/20 09:11
Finished: 6/18/20 17:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 0710
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW04SW_061020	**Units:**	µg/L
Lab Code:	E2000537-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.889**		0.100	0.0500	0.0250	1	6/18/20	6/25/20 20:08	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 0755
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW04_061020	**Units:**	µg/L
Lab Code:	E2000537-002	**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	**261**		1.00	0.500	0.250	10	6/18/20	6/25/20 20:15	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 0755
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18CPTMW04_061020_a	**Units:**	µg/L
Lab Code:	E2000537-003	**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	**235**		1.00	0.500	0.250	10	6/18/20	6/25/20 20:23	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 0850
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW3_061020	**Units:**	µg/L
Lab Code:	E2000537-004	**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	**13100**		100	50.0	25.0	1000	6/18/20	6/25/20 20:31	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 0940
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	109_061020	**Units:**	µg/L
Lab Code:	E2000537-005	**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	**10500**		100	50.0	25.0	1000	6/18/20	6/25/20 20:39	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 1035
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW10_061020	**Units:**	µg/L
Lab Code:	E2000537-006	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.156**		0.100	0.0500	0.0250	1	6/18/20	6/25/20 20:55	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 1125
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW17_061020	**Units:**	µg/L
Lab Code:	E2000537-007	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 21:03	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 1215
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW18_061020	**Units:**	µg/L
Lab Code:	E2000537-008	**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	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 21:11	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 1310
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	130_061020	**Units:**	µg/L
Lab Code:	E2000537-009	**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	**0.517**		0.100	0.0500	0.0250	1	6/18/20	6/25/20 21:19	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000244-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:28	360258	685181	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Analyzed:**	6/25/20
Sample Matrix:	Ground Water		

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	360258

	Lab Control Sample EQ2000244-02			Duplicate Lab Control Sample EQ2000244-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.107	0.100	107	0.0957	0.100	96	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:**	E2000537
Project:	HS20060547	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000244-02	**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	**0.107**		0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:36	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000244-03	**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	**0.0957**	J	0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:44	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
		Date Analyzed:	6/25/20

Matrix Spike Summary

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

Sample Name:	MW18_061020	**Units:**	µg/L
Lab Code:	E2000537-008	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		MW18_061020MS				MW18_061020DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000244-04				EQ2000244-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND	0.0996	0.100	100	0.104	0.100	104	84 - 119	5	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:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 1215
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW18_061020	**Units:**	µg/L
Lab Code:	EQ2000244-04	**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	**0.0996**	J	0.100	0.0500	0.0250	1	6/18/20	6/25/20 19:52	360258	685181	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Collected:**	6/10/20 1215
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW18_061020	**Units:**	µg/L
Lab Code:	EQ2000244-05	**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	**0.104**		0.100	0.0500	0.0250	1	6/18/20	6/25/20 20:00	360258	685181	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
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20200625

1st Review: Kneir
2nd Review: Hvan

ALS Environmental

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		
	null		20200625_001	Perchlorate6850b.lcm	1x	☒			
	null		20200625_002	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_003	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_004	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_005	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE1		20200625_006	Perchlorate6850b.lcm	1x	☒	3100806-05		
	PERCHLORATE2		20200625_007	Perchlorate6850b.lcm	1x	☒	3100806-06		
	PERCHLORATE3		20200625_008	Perchlorate6850b.lcm	1x	☒	3100806-07		
	PERCHLORATE4		20200625_009	Perchlorate6850b.lcm	1x	☒	3100807-01		
	PERCHLORATE5		20200625_011	Perchlorate6850b.lcm	1x	☒	3100807-03		
	PERCHLORATE6		20200625_012	Perchlorate6850b.lcm	1x	☒	3100807-04		
	PERCHLORATE7		20200625_013	Perchlorate6850b.lcm	1x	☒	3100807-05		
	PERCHLORATE8		20200625_014	Perchlorate6850b.lcm	1x	☒	3100807-06		
	PERCHLORATE9		20200625_015	Perchlorate6850b.lcm	1x	☒	3100807-07		
	PERCHLORATEICV		20200625_016	Perchlorate6850b.lcm	1x	☒	**3100807-08**		
	IB		20200625_017	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_018	Perchlorate6850b.lcm	1x	☒			
	LODV		20200625_019	Perchlorate6850b.lcm	1x	☒			
	ICS		20200625_020	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE7		20200625_021	Perchlorate6850b.lcm	1x	☒	3100807-05		
	EQ2000244-01		20200625_022	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-02		20200625_023	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-03		20200625_024	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-04		20200625_025	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-05		20200625_026	Perchlorate6850b.lcm	1x	☒			
	E2000537-001		20200625_027	Perchlorate6850b.lcm	1x	☒			
	E2000537-002		20200625_028	Perchlorate6850b.lcm	1x	☒			
	E2000537-003		20200625_029	Perchlorate6850b.lcm	1x	☒			
	E2000537-004		20200625_030	Perchlorate6850b.lcm	1x	☒			
	E2000537-005		20200625_031	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE7		20200625_032	Perchlorate6850b.lcm	1x	☒	3100807-05		
	E2000537-006		20200625_033	Perchlorate6850b.lcm	1x	☒			
	E2000537-007		20200625_034	Perchlorate6850b.lcm	1x	☒			
	E2000537-008		20200625_035	Perchlorate6850b.lcm	1x	☒			
	E2000537-009		20200625_036	Perchlorate6850b.lcm	1x	☒			
	E2000540-001		20200625_037	Perchlorate6850b.lcm	1x	☒			
	E2000540-002		20200625_038	Perchlorate6850b.lcm	1x	☒			
	E2000540-003		20200625_039	Perchlorate6850b.lcm	1x	☒			
	E2000540-004		20200625_040	Perchlorate6850b.lcm	1x	☒			
	E2000537-001		20200625_041	Perchlorate6850b.lcm	1x	☒			
	E2000537-002		20200625_042	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE7		20200625_043	Perchlorate6850b.lcm	1x	☒	3100807-05		
	EQ2000243-01		20200625_044	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-02		20200625_045	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-03		20200625_046	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-04		20200625_047	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-05		20200625_048	Perchlorate6850b.lcm	1x	☒			
	E2000541-001		20200625_049	Perchlorate6850b.lcm	1x	☒			
	E2000541-002		20200625_050	Perchlorate6850b.lcm	1x	☒			
	E2000541-003		20200625_051	Perchlorate6850b.lcm	1x	☒			
	E2000541-004		20200625_052	Perchlorate6850b.lcm	1x	☒			
	E2000541-005		20200625_053	Perchlorate6850b.lcm	1x	☒			

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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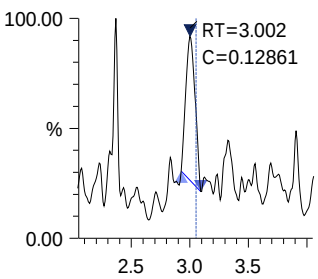
PERCHLORATE1

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

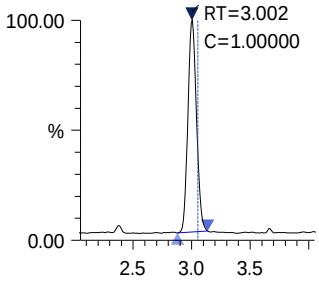
Perchlorate

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



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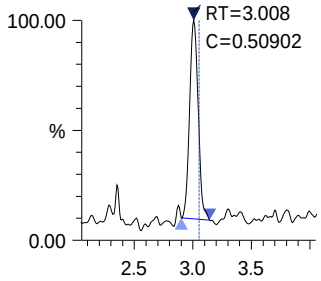
PERCHLORATE2

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

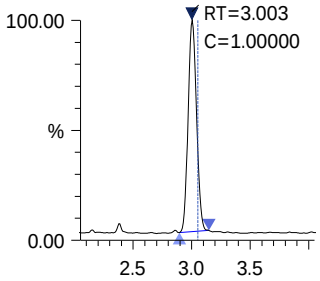
Perchlorate

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



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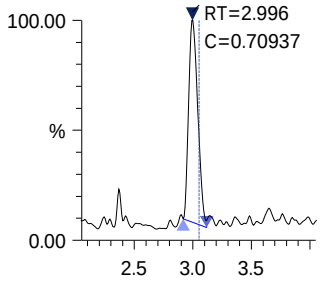
PERCHLORATE3

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

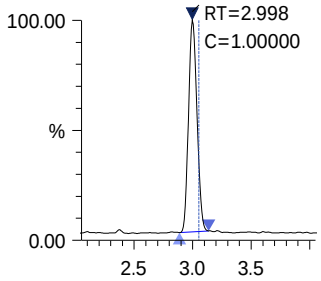
Perchlorate

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



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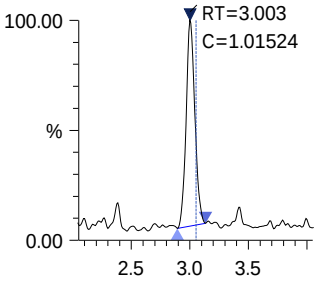
PERCHLORATE4

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

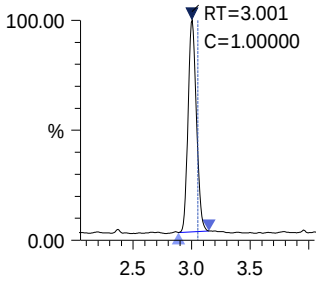
Perchlorate

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



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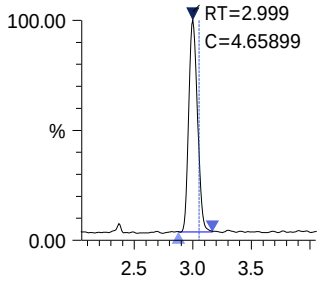
PERCHLORATE5

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

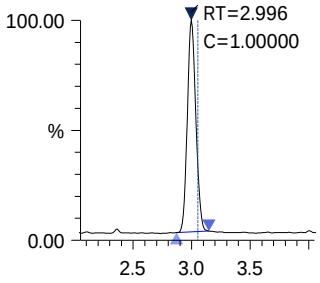
Perchlorate

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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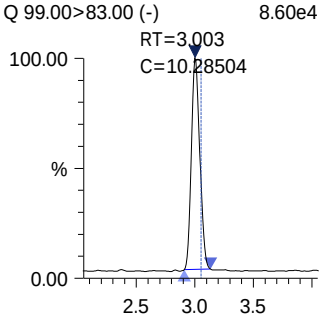
PERCHLORATE6

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

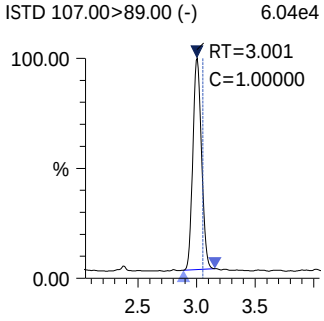
Perchlorate

Conc 10.28504
Area 427451



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 309038



ALS Group Houston

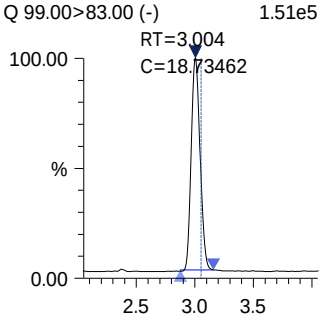
PERCHLORATE7

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

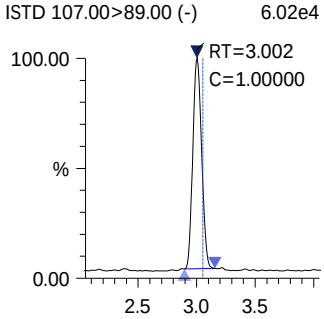
Perchlorate

Conc 18.73462
Area 786893



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 312322



ALS Group Houston

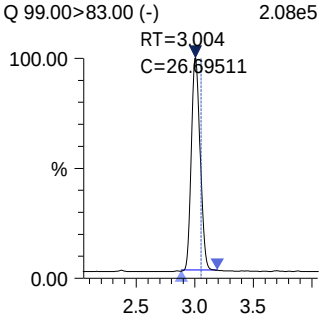
PERCHLORATE8

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

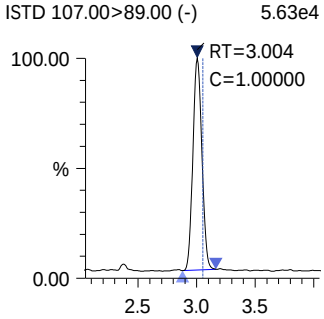
Perchlorate

Conc 26.69511
Area 1075993



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 299716



ALS Group Houston

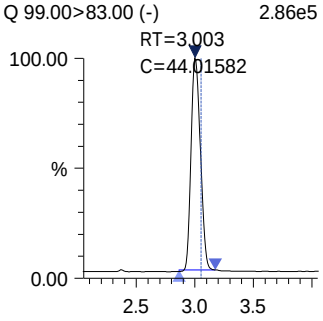
PERCHLORATE9

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

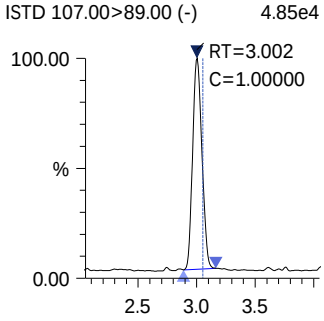
Perchlorate

Conc 44.01582
Area 1567374



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 264786



ALS Group Houston

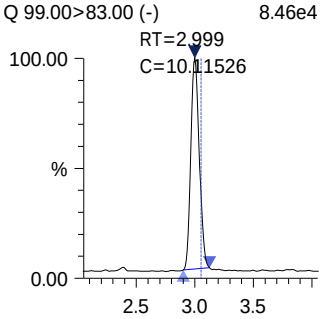
PERCHLORATEICV

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

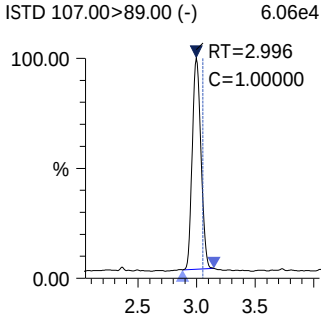
Perchlorate

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

20200625

1st Review: Kneir
2nd Review: Hvan

ALS Environmental

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		
	null		20200625_001	Perchlorate6850b.lcm	1x	☒			
	null		20200625_002	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_003	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_004	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_005	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE1		20200625_006	Perchlorate6850b.lcm	1x	☒	3100806-05		
	PERCHLORATE2		20200625_007	Perchlorate6850b.lcm	1x	☒	3100806-06		
	PERCHLORATE3		20200625_008	Perchlorate6850b.lcm	1x	☒	3100806-07		
	PERCHLORATE4		20200625_009	Perchlorate6850b.lcm	1x	☒	3100807-01		
	PERCHLORATE5		20200625_011	Perchlorate6850b.lcm	1x	☒	3100807-03		
	PERCHLORATE6		20200625_012	Perchlorate6850b.lcm	1x	☒	3100807-04		
	PERCHLORATE7		20200625_013	Perchlorate6850b.lcm	1x	☒	3100807-05		
	PERCHLORATE8		20200625_014	Perchlorate6850b.lcm	1x	☒	3100807-06		
	PERCHLORATE9		20200625_015	Perchlorate6850b.lcm	1x	☒	3100807-07		
	PERCHLORATEICV		20200625_016	Perchlorate6850b.lcm	1x	☒	**3100807-08**		
	IB		20200625_017	Perchlorate6850b.lcm	1x	☒			
	IB		20200625_018	Perchlorate6850b.lcm	1x	☒			
	LODV		20200625_019	Perchlorate6850b.lcm	1x	☒			
	ICS		20200625_020	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE7		20200625_021	Perchlorate6850b.lcm	1x	☒	3100807-05		
	EQ2000244-01		20200625_022	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-02		20200625_023	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-03		20200625_024	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-04		20200625_025	Perchlorate6850b.lcm	1x	☒			
	EQ2000244-05		20200625_026	Perchlorate6850b.lcm	1x	☒			
	E2000537-001		20200625_027	Perchlorate6850b.lcm	1x	☒			
	E2000537-002		20200625_028	Perchlorate6850b.lcm	1x	☒			
	E2000537-003		20200625_029	Perchlorate6850b.lcm	1x	☒			
	E2000537-004		20200625_030	Perchlorate6850b.lcm	1x	☒			
	E2000537-005		20200625_031	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE7		20200625_032	Perchlorate6850b.lcm	1x	☒	3100807-05		
	E2000537-006		20200625_033	Perchlorate6850b.lcm	1x	☒			
	E2000537-007		20200625_034	Perchlorate6850b.lcm	1x	☒			
	E2000537-008		20200625_035	Perchlorate6850b.lcm	1x	☒			
	E2000537-009		20200625_036	Perchlorate6850b.lcm	1x	☒			
	E2000540-001		20200625_037	Perchlorate6850b.lcm	1x	☒			
	E2000540-002		20200625_038	Perchlorate6850b.lcm	1x	☒			
	E2000540-003		20200625_039	Perchlorate6850b.lcm	1x	☒			
	E2000540-004		20200625_040	Perchlorate6850b.lcm	1x	☒			
	E2000537-001		20200625_041	Perchlorate6850b.lcm	1x	☒			
	E2000537-002		20200625_042	Perchlorate6850b.lcm	1x	☒			
	PERCHLORATE7		20200625_043	Perchlorate6850b.lcm	1x	☒	3100807-05		
	EQ2000243-01		20200625_044	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-02		20200625_045	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-03		20200625_046	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-04		20200625_047	Perchlorate6850b.lcm	1x	☒			
	EQ2000243-05		20200625_048	Perchlorate6850b.lcm	1x	☒			
	E2000541-001		20200625_049	Perchlorate6850b.lcm	1x	☒			
	E2000541-002		20200625_050	Perchlorate6850b.lcm	1x	☒			
	E2000541-003		20200625_051	Perchlorate6850b.lcm	1x	☒			
	E2000541-004		20200625_052	Perchlorate6850b.lcm	1x	☒			
	E2000541-005		20200625_053	Perchlorate6850b.lcm	1x	☒			

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Analyzed:**	6/25/20

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\20200625A\20200625_021	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1345	0.1363	1.3	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Analyzed:**	6/25/20

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\20200625A\20200625_032	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.3	0.1345	0.1385	3.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Analyzed:**	6/25/20

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\20200625A\20200625_043	**Calibration ID:**	EC2000009
		Analysis Lot:	685181
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.0	0.1345	0.1350	0.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000537
Project:	HS20060547	**Date Analyzed:**	6/25/20 19:20

Internal Standard Area and RT Summary

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

File ID:	I:\LCMS01\DATA\20200625A\20200625_021	**Lab Code:**	EQ2000270-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-01	307,194	2.99
Method Blank	EQ2000244-01	350,361	2.99
Lab Control Sample	EQ2000244-02	368,292	2.99
Duplicate Lab Control Sample	EQ2000244-03	375,177	2.99
MW18_061020MS	EQ2000244-04	171,728	2.94
MW18_061020DMS	EQ2000244-05	178,361	2.94
18CPTMW04SW_061020	E2000537-001	241,034	2.98
18CPTMW04_061020	E2000537-002	281,620	2.99
18CPTMW04_061020_a	E2000537-003	327,031	2.99
MW3_061020	E2000537-004	308,362	2.99
109_061020	E2000537-005	318,433	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:**	E2000537
Project:	HS20060547	**Date Analyzed:**	6/25/20 20:47

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

File ID:	I:\LCMS01\DATA\20200625A\20200625_032	**Lab Code:**	EQ2000270-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-02	305,916	2.99
MW10_061020	E2000537-006	277,472	2.98
MW17_061020	E2000537-007	301,990	2.97
MW18_061020	E2000537-008	177,639	2.93
130_061020	E2000537-009	210,172	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:**	E2000537
Project:	HS20060547	**Date Analyzed:**	6/25/20 22:14

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

File ID:	I:\LCMS01\DATA\20200625A\20200625_043	**Lab Code:**	EQ2000270-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	685181
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	EQ2000270-03	313,792	2.99

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

ALS Group Houston

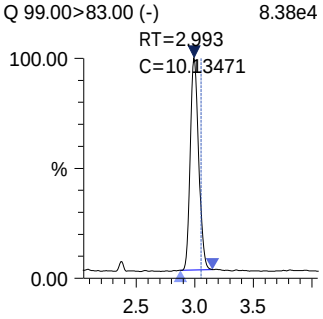
PERCHLORATE7

Date acquired: 6/25/2020 7:20:34 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_021.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	6/25/2020 7:20:34 PM	418690	10.13471	20200625_021	2.993	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/25/2020 7:20:34 PM	307194	1.00000	20200625_021	2.991	25.0000	1.0000	4

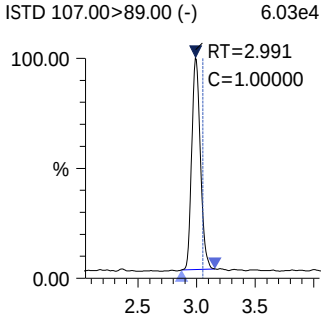
Perchlorate

Conc 10.13471
Area 418690



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 307194



ALS Group Houston

EQ2000244-01

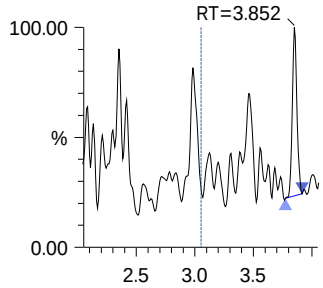
Date acquired: 6/25/2020 7:28:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_022.lcd
Vial: 33 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-01	6/25/2020 7:28:30 PM	----	----	20200625_022	----	25.0000	1.0000	33
Sodium Perchlorate-18O4_IS	EQ2000244-01	6/25/2020 7:28:30 PM	350361	1.00000	20200625_022	2.989	25.0000	1.0000	33

Perchlorate

Conc ----
Area ----

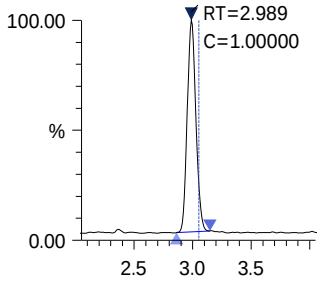
Q 99.00>83.00 (-) 1.20e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 350361

ISTD 107.00>89.00 (-) 6.91e4



ALS Group Houston

EQ2000244-02

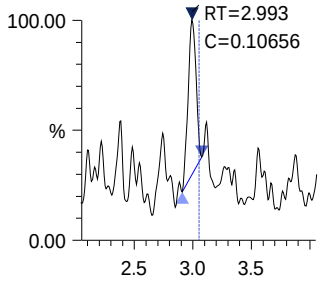
Date acquired: 6/25/2020 7:36:25 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_023.lcd
Vial: 34 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-02	6/25/2020 7:36:25 PM	5278	0.10656	20200625_023	2.993	25.0000	1.0000	34
Sodium Perchlorate-18O4_IS	EQ2000244-02	6/25/2020 7:36:25 PM	368292	1.00000	20200625_023	2.993	25.0000	1.0000	34

Perchlorate

Conc 0.10656
Area 5278

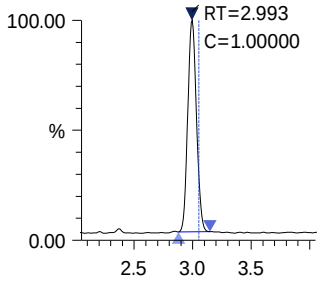
Q 99.00>83.00 (-) 1.54e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 368292

ISTD 107.00>89.00 (-) 7.21e4



ALS Group Houston

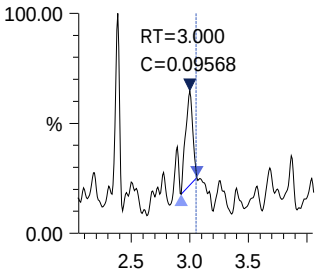
EQ2000244-03

Date acquired: 6/25/2020 7:44:17 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_024.lcd
Vial: 35 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-03	6/25/2020 7:44:17 PM	4828	0.09568	20200625_024	3.000	25.0000	1.0000	35
Sodium Perchlorate-18O4_IS	EQ2000244-03	6/25/2020 7:44:17 PM	375177	1.00000	20200625_024	2.994	25.0000	1.0000	35

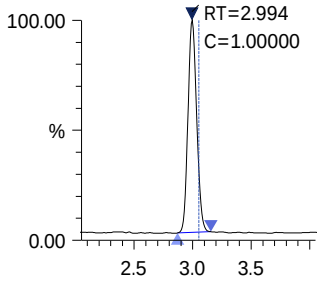
Perchlorate

Conc 0.09568
Area 4828
Q 99.00>83.00 (-) 2.56e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 375177
ISTD 107.00>89.00 (-) 7.30e4



ALS Group Houston

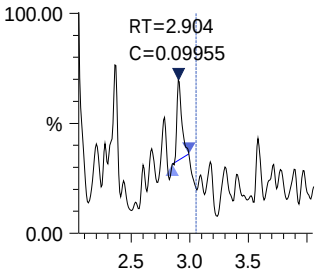
EQ2000244-04

Date acquired: 6/25/2020 7:52:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_025.lcd
Vial: 36 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-04	6/25/2020 7:52:10 PM	2299	0.09955	20200625_025	2.904	25.0000	1.0000	36
Sodium Perchlorate-18O4_IS	EQ2000244-04	6/25/2020 7:52:10 PM	171728	1.00000	20200625_025	2.942	25.0000	1.0000	36

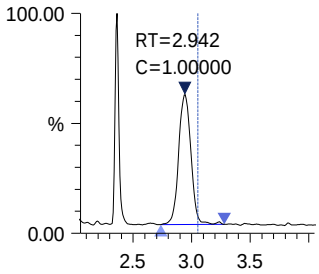
Perchlorate

Conc 0.09955
Area 2299
Q 99.00>83.00 (-) 2.11e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 171728
ISTD 107.00>89.00 (-) 3.89e4



ALS Group Houston

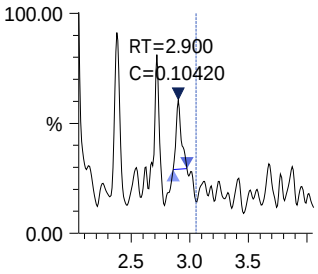
EQ2000244-05

Date acquired: 6/25/2020 8:00:05 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_026.lcd
Vial: 37 | Inj. Volume: 25.0000uL | Tray: 3

Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000244-05	6/25/2020 8:00:05 PM	2500	0.10420	20200625_026	2.900	25.0000	1.0000	37
Sodium Perchlorate-18O4_IS	EQ2000244-05	6/25/2020 8:00:05 PM	178361	1.00000	20200625_026	2.939	25.0000	1.0000	37

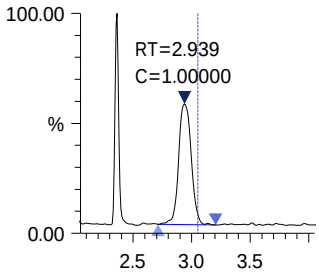
Perchlorate

Conc 0.10420
Area 2500
Q 99.00>83.00 (-) 2.53e3



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 178361
ISTD 107.00>89.00 (-) 4.24e4



ALS Group Houston

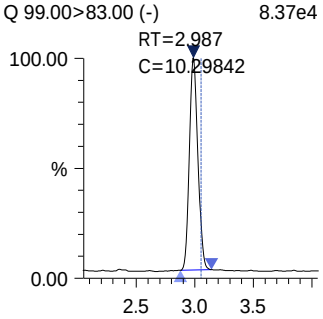
PERCHLORATE7

Date acquired: 6/25/2020 8:47:31 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200625A\20200625_032.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	6/25/2020 8:47:31 PM	423682	10.29842	20200625_032	2.987	25.0000	1.0000	4
Sodium Perchlorate-18O4_IS	PERCHLORATE7	6/25/2020 8:47:31 PM	305916	1.00000	20200625_032	2.985	25.0000	1.0000	4

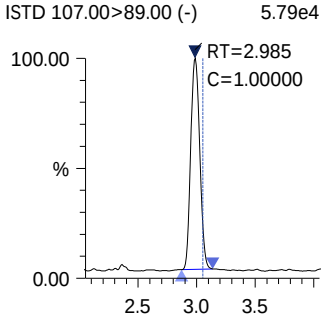
Perchlorate

Conc 10.29842
Area 423682



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 305916



10450 Stancliff Rd. Suite 210
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June 29, 2020

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

Work Order: **HS20060659**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

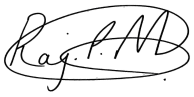
ALS Environmental received 11 sample(s) on Jun 12, 2020 for the analysis presented in the following report.

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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060659

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060659-01	MW12_061120	Groundwater		11-Jun-2020 07:25	12-Jun-2020 08:50	☐
HS20060659-02	AWD3_061120	Groundwater		11-Jun-2020 08:15	12-Jun-2020 08:50	☐
HS20060659-03	AWD3_061120_a	Groundwater		11-Jun-2020 08:15	12-Jun-2020 08:50	☐
HS20060659-04	MW1_061120	Groundwater		11-Jun-2020 09:05	12-Jun-2020 08:50	☐
HS20060659-05	MW6_061120	Groundwater		11-Jun-2020 09:55	12-Jun-2020 08:50	☐
HS20060659-06	126_061120	Groundwater		11-Jun-2020 10:45	12-Jun-2020 08:50	☐
HS20060659-07	126_061120_a	Groundwater		11-Jun-2020 10:45	12-Jun-2020 08:50	☐
HS20060659-08	18WW03_061120	Groundwater		11-Jun-2020 11:45	12-Jun-2020 08:50	☐
HS20060659-09	18WW03_061120_a	Groundwater		11-Jun-2020 11:45	12-Jun-2020 08:50	☐
HS20060659-10	CO8_061120	Groundwater		11-Jun-2020 12:45	12-Jun-2020 08:50	☐
HS20060659-11	Trip Blank	Water		11-Jun-2020 00:00	12-Jun-2020 08:50	☐

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060659

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: 154567

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

GCMS Volatiles by Method SW8260

Batch ID: R363690

Sample ID: VLCSW-200620

• Hexachlorobutadiene exceeded QC limits for LCS. Samples are ND for this compound.

Sample ID: MW6_061120 (HS20060659-05MS)

• 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 recovery of the MS may be due to sample matrix interference.

Sample ID: MW6_061120 (HS20060659-05MSD)

• The RPD between the MS and MSD was outside of the control limit.

Batch ID: R363724

Sample ID: HS20060846-02MS

• MS is performed on unrelated sample

Metals by Method SW7470

Batch ID: 154667

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

Metals by Method SW6020

Batch ID: 154643

Sample ID: HS20060498-08MS

• MS and MSD are for an unrelated sample

Sample ID: HS20060498-08PDS

• PDS is for an unrelated sample

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW12_061120
Collection Date: 11-Jun-2020 07:25

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-01
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	20-Jun-2020 21:00
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,1-Dichloroethane	**0.58**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 21:00
1,1-Dichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 21:00
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 21:00
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 21:00
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 21:00
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 21:00
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 21:00
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW12_061120
Collection Date: 11-Jun-2020 07:25

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-01
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	20-Jun-2020 21:00
cis-1,2-Dichloroethene	**7.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 21:00
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 21:00
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 21:00
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 21:00
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 21:00
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
Trichloroethene	**100**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 21:00
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 21:00
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 21:00
Surr: 1,2-Dichloroethane-d4	*100*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 21:00*
Surr: 4-Bromofluorobenzene	*97.4*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 21:00*
Surr: Dibromofluoromethane	*99.6*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 21:00*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 21:00*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD3_061120
Collection Date: 11-Jun-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 15:01
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 15:01
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 15:01
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 15:01
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 15:01
Carbon tetrachloride	**12**		**0.50**	**1.0**	**1.0**	**UG/L**	1	20-Jun-2020 15:01
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Chloroform	**1.1**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 15:01

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD3_061120
Collection Date: 11-Jun-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-02
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	20-Jun-2020 15:01
cis-1,2-Dichloroethene	**2.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 15:01
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 15:01
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 15:01
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 15:01
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:01
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Tetrachloroethene	**1.7**		**0.30**	**1.0**	**1.0**	**UG/L**	1	20-Jun-2020 15:01
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
Trichloroethene	**340**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Jun-2020 17:04
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:01
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:01
Surr: 1,2-Dichloroethane-d4	*104*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 15:01*
Surr: 1,2-Dichloroethane-d4	*102*			**0**	*81-118*	*%REC*	*5*	*22-Jun-2020 17:04*
Surr: 4-Bromofluorobenzene	*107*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 15:01*
Surr: 4-Bromofluorobenzene	*95.4*			**0**	*85-114*	*%REC*	*5*	*22-Jun-2020 17:04*
Surr: Dibromofluoromethane	*104*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 15:01*
Surr: Dibromofluoromethane	*101*			**0**	*80-119*	*%REC*	*5*	*22-Jun-2020 17:04*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 15:01*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*5*	*22-Jun-2020 17:04*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD3_061120
Collection Date: 11-Jun-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.317**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:16
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:16
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:16
Barium	**0.0256**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:16
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:16
Calcium	**0.507**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:16
Chromium	**0.184**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Cobalt	**0.00152**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Copper	**0.00271**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Iron	**0.834**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:16
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:16
Magnesium	**0.358**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:16
Manganese	**0.0165**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Nickel	**0.0205**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Potassium	**0.455**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:16
Selenium	**0.00402**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:16
Sodium	**21.9**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:16
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:16
Vanadium	**0.00325**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
Zinc	**0.00252**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:16
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:10
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD3_061120_a
Collection Date: 11-Jun-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-03
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 15:25
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 15:25
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 15:25
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 15:25
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 15:25
Carbon tetrachloride	**11**		**0.50**	**1.0**	**1.0**	**UG/L**	1	20-Jun-2020 15:25
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Chloroform	**1.0**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 15:25

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD3_061120_a
Collection Date: 11-Jun-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-03
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	20-Jun-2020 15:25
cis-1,2-Dichloroethene	**2.3**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 15:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 15:25
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 15:25
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 15:25
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 15:25
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Tetrachloroethene	**1.4**		**0.30**	**1.0**	**1.0**	**UG/L**	1	20-Jun-2020 15:25
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
Trichloroethene	**330**		**1.0**	**2.5**	**5.0**	**UG/L**	5	22-Jun-2020 17:28
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 15:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 15:25
Surr: 1,2-Dichloroethane-d4	*93.2*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 15:25*
Surr: 1,2-Dichloroethane-d4	*101*			**0**	*81-118*	*%REC*	*5*	*22-Jun-2020 17:28*
Surr: 4-Bromofluorobenzene	*95.2*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 15:25*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*85-114*	*%REC*	*5*	*22-Jun-2020 17:28*
Surr: Dibromofluoromethane	*92.1*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 15:25*
Surr: Dibromofluoromethane	*102*			**0**	*80-119*	*%REC*	*5*	*22-Jun-2020 17:28*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 15:25*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*5*	*22-Jun-2020 17:28*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD3_061120_a
Collection Date: 11-Jun-2020 08:15

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.310**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:19
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:19
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:19
Barium	**0.0242**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:19
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:19
Calcium	**0.512**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:19
Chromium	**0.200**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Cobalt	**0.00147**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Copper	**0.00214**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Iron	**0.887**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:19
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:19
Magnesium	**0.352**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:19
Manganese	**0.0165**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Nickel	**0.0209**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Potassium	**0.455**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:19
Selenium	**0.00416**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:19
Sodium	**21.5**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:19
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:19
Vanadium	**0.00369**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
Zinc	**0.00202**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:19
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:12
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW1_061120
Collection Date: 11-Jun-2020 09:05

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-04
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	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
1,1,1-Trichloroethane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
1,1,2,2-Tetrachloroethane	50	U	25	50	50	UG/L	50	20-Jun-2020 21:24
1,1,2-Trichloroethane	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
1,1-Dichloroethane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
1,1-Dichloroethene	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
1,1-Dichloropropene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
1,2,3-Trichlorobenzene	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
1,2,3-Trichloropropane	50	U	25	50	50	UG/L	50	20-Jun-2020 21:24
1,2,4-Trichlorobenzene	50	U	25	50	50	UG/L	50	20-Jun-2020 21:24
1,2,4-Trimethylbenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
1,2-Dibromo-3-chloropropane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
1,2-Dibromoethane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
1,2-Dichlorobenzene	50	U	25	50	50	UG/L	50	20-Jun-2020 21:24
1,2-Dichloroethane	**1,200**		**10**	**25**	**50**	**UG/L**	50	20-Jun-2020 21:24
1,2-Dichloropropane	50	U	25	50	50	UG/L	50	20-Jun-2020 21:24
1,3,5-Trimethylbenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
1,3-Dichlorobenzene	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
1,3-Dichloropropane	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
1,4-Dichlorobenzene	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
2,2-Dichloropropane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
2-Butanone	50	U	25	50	100	UG/L	50	20-Jun-2020 21:24
2-Chlorotoluene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
2-Hexanone	100	U	50	100	100	UG/L	50	20-Jun-2020 21:24
4-Chlorotoluene	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
4-Isopropyltoluene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
4-Methyl-2-pentanone	100	U	35	100	100	UG/L	50	20-Jun-2020 21:24
Acetone	50	U	20	50	100	UG/L	50	20-Jun-2020 21:24
Benzene	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
Bromobenzene	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
Bromochloromethane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
Bromodichloromethane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
Bromoform	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
Bromomethane	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
Carbon disulfide	50	U	30	50	100	UG/L	50	20-Jun-2020 21:24
Carbon tetrachloride	50	U	25	50	50	UG/L	50	20-Jun-2020 21:24
Chlorobenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Chloroethane	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Chloroform	**59**		**10**	**25**	**50**	**UG/L**	50	20-Jun-2020 21:24

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW1_061120
Collection Date: 11-Jun-2020 09:05

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-04
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	20-Jun-2020 21:24
cis-1,2-Dichloroethene	**15,000**		**100**	**250**	**500**	**UG/L**	500	20-Jun-2020 21:48
cis-1,3-Dichloropropene	25	U	5.0	25	50	UG/L	50	20-Jun-2020 21:24
Dibromochloromethane	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Dibromomethane	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
Dichlorodifluoromethane	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Ethylbenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Hexachlorobutadiene	50	U	50	50	50	UG/L	50	20-Jun-2020 21:24
Isopropylbenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
m,p-Xylene	50	U	25	50	100	UG/L	50	20-Jun-2020 21:24
Methylene chloride	50	U	20	50	100	UG/L	50	20-Jun-2020 21:24
n-Butylbenzene	50	U	20	50	50	UG/L	50	20-Jun-2020 21:24
n-Propylbenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Naphthalene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
o-Xylene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
sec-Butylbenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Styrene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
tert-Butylbenzene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Tetrachloroethene	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Toluene	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
trans-1,2-Dichloroethene	**30**	J	**10**	**25**	**50**	**UG/L**	50	20-Jun-2020 21:24
trans-1,3-Dichloropropene	25	U	10	25	50	UG/L	50	20-Jun-2020 21:24
Trichloroethene	**31,000**		**100**	**250**	**500**	**UG/L**	500	20-Jun-2020 21:48
Trichlorofluoromethane	50	U	15	50	50	UG/L	50	20-Jun-2020 21:24
Vinyl chloride	**24**	J	**10**	**25**	**50**	**UG/L**	50	20-Jun-2020 21:24
Surr: 1,2-Dichloroethane-d4	*116*			**0**	*81-118*	*%REC*	*50*	*20-Jun-2020 21:24*
Surr: 1,2-Dichloroethane-d4	*115*			**0**	*81-118*	*%REC*	*500*	*20-Jun-2020 21:48*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*85-114*	*%REC*	*50*	*20-Jun-2020 21:24*
Surr: 4-Bromofluorobenzene	*98.9*			**0**	*85-114*	*%REC*	*500*	*20-Jun-2020 21:48*
Surr: Dibromofluoromethane	*111*			**0**	*80-119*	*%REC*	*50*	*20-Jun-2020 21:24*
Surr: Dibromofluoromethane	*110*			**0**	*80-119*	*%REC*	*500*	*20-Jun-2020 21:48*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*50*	*20-Jun-2020 21:24*
Surr: Toluene-d8	*104*			**0**	*89-112*	*%REC*	*500*	*20-Jun-2020 21:48*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW1_061120
Collection Date: 11-Jun-2020 09:05

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0296**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:21
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:21
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:21
Barium	**0.496**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:21
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:21
Calcium	**21.8**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:21
Chromium	**0.300**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
Cobalt	**0.0136**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
Copper	**0.00896**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
Iron	**3.34**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:21
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:21
Magnesium	**18.7**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:21
Manganese	**0.905**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
Nickel	**1.06**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
Potassium	**2.05**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:21
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:21
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:21
Sodium	**160**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:33
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:21
Vanadium	**0.00351**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
Zinc	**0.00240**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:21
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:17
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW6_061120
Collection Date: 11-Jun-2020 09:55

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,1-Dichloroethane	**1.9**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 14:13
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,3-Dichlorobenzene	**0.71**	J	**0.40**	**1.0**	**1.0**	**UG/L**	1	20-Jun-2020 14:13
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 14:13
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 14:13
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 14:13
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 14:13
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 14:13
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 14:13
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 14:13
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW6_061120
Collection Date: 11-Jun-2020 09:55

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-05
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	20-Jun-2020 14:13
cis-1,2-Dichloroethene	**6.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 14:13
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 14:13
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 14:13
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 14:13
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 14:13
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 14:13
Trichloroethene	**19**		**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 14:13
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 14:13
Vinyl chloride	**0.94**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 14:13
Surr: 1,2-Dichloroethane-d4	*95.6*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 14:13*
Surr: 4-Bromofluorobenzene	*98.0*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 14:13*
Surr: Dibromofluoromethane	*95.4*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 14:13*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 14:13*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW6_061120
Collection Date: 11-Jun-2020 09:55

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0114**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:42
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:42
Arsenic	**0.00118**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Barium	**0.611**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	26-Jun-2020 11:10
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:42
Calcium	**24.5**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:42
Chromium	**0.125**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Cobalt	**0.00144**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Copper	**0.00265**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Iron	**1.38**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:42
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:42
Magnesium	**20.4**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:42
Manganese	**0.0713**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Nickel	**0.0502**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Potassium	**1.99**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:42
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:42
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:42
Sodium	**187**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:35
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:42
Vanadium	**0.00265**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
Zinc	**0.00597**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:42
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:19
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 126_061120
Collection Date: 11-Jun-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-06
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 19:00
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 19:00
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 19:00
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 19:00
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 19:00
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 126_061120
Collection Date: 11-Jun-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-06
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	20-Jun-2020 19:00
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 19:00
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 19:00
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 19:00
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:00
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
Trichloroethene	**0.88**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 19:00
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:00
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:00
Surr: 1,2-Dichloroethane-d4	*101*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 19:00*
Surr: 4-Bromofluorobenzene	*99.2*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 19:00*
Surr: Dibromofluoromethane	*101*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 19:00*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 19:00*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.26**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 19:23
Surr: 2-Fluorobiphenyl	*68.1*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:23*
Surr: 4-Terphenyl-d14	*70.2*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:23*
Surr: Nitrobenzene-d5	*69.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:23*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 126_061120
Collection Date: 11-Jun-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0710**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:45
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:45
Arsenic	**0.00323**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:45
Barium	**7.69**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	23-Jun-2020 17:38
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	26-Jun-2020 11:12
Cadmium	**0.000234**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	23-Jun-2020 16:45
Calcium	**243**		**0.680**	**1.00**	**10.0**	**mg/L**	20	23-Jun-2020 17:38
Chromium	**0.000862**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:45
Cobalt	**0.0122**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:45
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 16:45
Iron	**2.89**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:45
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:45
Magnesium	**194**		**0.200**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:38
Manganese	**0.207**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:45
Nickel	**0.0122**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:45
Potassium	**3.36**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:45
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:45
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:45
Sodium	**676**		**0.280**	**1.00**	**4.00**	**mg/L**	20	23-Jun-2020 17:38
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:45
Vanadium	**0.00102**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:45
Zinc	**0.0235**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:45
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	**0.0000330**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	19-Jun-2020 16:20
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 126_061120_a
Collection Date: 11-Jun-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-07
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	20-Jun-2020 19:24
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 19:24
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 19:24
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 19:24
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 19:24
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 19:24
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 126_061120_a
Collection Date: 11-Jun-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-07
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	20-Jun-2020 19:24
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 19:24
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 19:24
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 19:24
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:24
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
Trichloroethene	**0.82**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	20-Jun-2020 19:24
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:24
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:24
Surr: 1,2-Dichloroethane-d4	*103*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 19:24*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 19:24*
Surr: Dibromofluoromethane	*103*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 19:24*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 19:24*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.24**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 19:43
Surr: 2-Fluorobiphenyl	*73.8*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:43*
Surr: 4-Terphenyl-d14	*88.4*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:43*
Surr: Nitrobenzene-d5	*66.7*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 19:43*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 126_061120_a
Collection Date: 11-Jun-2020 10:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.138**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:47
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:47
Arsenic	**0.00357**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Barium	**9.73**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	26-Jun-2020 11:20
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	26-Jun-2020 11:14
Cadmium	**0.000233**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	23-Jun-2020 16:47
Calcium	**326**		**0.680**	**1.00**	**10.0**	**mg/L**	20	26-Jun-2020 11:20
Chromium	**0.000671**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Cobalt	**0.0157**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Copper	**0.0209**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Iron	**3.24**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:47
Lead	**0.00102**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Magnesium	**251**		**0.200**	**1.00**	**4.00**	**mg/L**	20	26-Jun-2020 11:20
Manganese	**0.404**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Nickel	**0.0561**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Potassium	**3.69**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:47
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:47
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:47
Sodium	**881**		**0.280**	**1.00**	**4.00**	**mg/L**	20	26-Jun-2020 11:20
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:47
Vanadium	**0.00124**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
Zinc	**0.547**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:47
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:22
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW03_061120
Collection Date: 11-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-08
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 19:48
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 19:48
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 19:48
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 19:48
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 19:48
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW03_061120
Collection Date: 11-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-08
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	20-Jun-2020 19:48
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 19:48
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 19:48
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 19:48
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 19:48
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 19:48
Surr: 1,2-Dichloroethane-d4	*105*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 19:48*
Surr: 4-Bromofluorobenzene	*103*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 19:48*
Surr: Dibromofluoromethane	*105*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 19:48*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 19:48*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.19**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 20:02
Surr: 2-Fluorobiphenyl	*75.0*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:02*
Surr: 4-Terphenyl-d14	*75.2*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:02*
Surr: Nitrobenzene-d5	*77.6*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:02*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW03_061120
Collection Date: 11-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0111**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:50
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:50
Arsenic	**0.000741**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:50
Barium	**0.207**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:50
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	26-Jun-2020 11:16
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:50
Calcium	**8.97**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:50
Chromium	**0.00226**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:50
Cobalt	0.000500	U	0.000100	0.000500	0.00500	mg/L	1	23-Jun-2020 16:50
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 16:50
Iron	**9.51**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:50
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:50
Magnesium	**6.17**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:50
Manganese	**0.0824**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:50
Nickel	**0.000911**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:50
Potassium	**1.93**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:50
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:50
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:50
Sodium	**110**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:50
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:50
Vanadium	**0.000664**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:50
Zinc	0.00250	U	0.00200	0.00250	0.00500	mg/L	1	23-Jun-2020 16:50
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:24
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW03_061120_a
Collection Date: 11-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-09
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 20:12
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 20:12
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 20:12
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 20:12
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 20:12
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW03_061120_a
Collection Date: 11-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-09
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	20-Jun-2020 20:12
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 20:12
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 20:12
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:12
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:12
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:12
Surr: 1,2-Dichloroethane-d4	*102*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 20:12*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 20:12*
Surr: Dibromofluoromethane	*104*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 20:12*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 20:12*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.17**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 20:22
Surr: 2-Fluorobiphenyl	*72.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:22*
Surr: 4-Terphenyl-d14	*76.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:22*
Surr: Nitrobenzene-d5	*59.2*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:22*

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW03_061120_a
Collection Date: 11-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0104**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	23-Jun-2020 16:56
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	23-Jun-2020 16:56
Arsenic	**0.000575**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:56
Barium	**0.196**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:56
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	26-Jun-2020 11:18
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:56
Calcium	**8.58**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	23-Jun-2020 16:56
Chromium	**0.00181**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	23-Jun-2020 16:56
Cobalt	0.000500	U	0.000100	0.000500	0.00500	mg/L	1	23-Jun-2020 16:56
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	23-Jun-2020 16:56
Iron	**8.05**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:56
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	23-Jun-2020 16:56
Magnesium	**5.93**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:56
Manganese	**0.0773**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	23-Jun-2020 16:56
Nickel	**0.000878**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:56
Potassium	**1.86**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:56
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	23-Jun-2020 16:56
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	23-Jun-2020 16:56
Sodium	**106**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	23-Jun-2020 16:56
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	23-Jun-2020 16:56
Vanadium	**0.00119**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	23-Jun-2020 16:56
Zinc	0.00250	U	0.00200	0.00250	0.00500	mg/L	1	23-Jun-2020 16:56
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:25
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO8_061120
Collection Date: 11-Jun-2020 12:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-10
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	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 20:36
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 20:36
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 20:36
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 20:36
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 20:36
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO8_061120
Collection Date: 11-Jun-2020 12:45

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-10
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	20-Jun-2020 20:36
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 20:36
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 20:36
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 20:36
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 20:36
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 20:36
Surr: 1,2-Dichloroethane-d4	*102*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 20:36*
Surr: 4-Bromofluorobenzene	*102*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 20:36*
Surr: Dibromofluoromethane	*102*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 20:36*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 20:36*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 17-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.21**		**0.10**	**0.10**	**0.10**	**ug/L**	10	27-Jun-2020 20:41
Surr: 2-Fluorobiphenyl	*67.5*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:41*
Surr: 4-Terphenyl-d14	*75.1*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:41*
Surr: Nitrobenzene-d5	*55.1*			**0**	*40-140*	*%REC*	*10*	*27-Jun-2020 20:41*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	29-Jun-2020 17:23

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 11-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-11
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 13:49
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	20-Jun-2020 13:49
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	20-Jun-2020 13:49
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 13:49
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	20-Jun-2020 13:49
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49

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

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 11-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060659
Lab ID:HS20060659-11
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	20-Jun-2020 13:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	20-Jun-2020 13:49
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	20-Jun-2020 13:49
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	20-Jun-2020 13:49
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	20-Jun-2020 13:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	20-Jun-2020 13:49
Surr: 1,2-Dichloroethane-d4	*101*			**0**	*81-118*	*%REC*	*1*	*20-Jun-2020 13:49*
Surr: 4-Bromofluorobenzene	*100.0*			**0**	*85-114*	*%REC*	*1*	*20-Jun-2020 13:49*
Surr: Dibromofluoromethane	*98.9*			**0**	*80-119*	*%REC*	*1*	*20-Jun-2020 13:49*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*20-Jun-2020 13:49*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

Batch ID: 154567 **Start Date:** 17 Jun 2020 10:00 **End Date:** 17 Jun 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
HS20060659-06	1	1000 (mL)	1 (mL)	0.001
HS20060659-07	1	1000 (mL)	1 (mL)	0.001
HS20060659-08	1	1000 (mL)	1 (mL)	0.001
HS20060659-09	1	1000 (mL)	1 (mL)	0.001
HS20060659-10	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154643 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060659-02		10 (mL)	10 (mL)	1
HS20060659-03		10 (mL)	10 (mL)	1
HS20060659-04		10 (mL)	10 (mL)	1
HS20060659-05		10 (mL)	10 (mL)	1
HS20060659-06		10 (mL)	10 (mL)	1
HS20060659-07		10 (mL)	10 (mL)	1
HS20060659-08		10 (mL)	10 (mL)	1
HS20060659-09		10 (mL)	10 (mL)	1

Batch ID: 154667 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060659-02		10 (mL)	10 (mL)	1
HS20060659-03		10 (mL)	10 (mL)	1
HS20060659-04		10 (mL)	10 (mL)	1
HS20060659-05		10 (mL)	10 (mL)	1
HS20060659-06		10 (mL)	10 (mL)	1
HS20060659-07		10 (mL)	10 (mL)	1
HS20060659-08		10 (mL)	10 (mL)	1
HS20060659-09		10 (mL)	10 (mL)	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154567 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060659-06	126_061120	11 Jun 2020 10:45		17 Jun 2020 13:37	27 Jun 2020 19:23	10
HS20060659-07	1Z6_061120_a	11 Jun 2020 10:45		17 Jun 2020 13:37	27 Jun 2020 19:43	10
HS20060659-08	18WW03_061120	11 Jun 2020 11:45		17 Jun 2020 13:37	27 Jun 2020 20:02	10
HS20060659-09	18WW03_061120_a	11 Jun 2020 11:45		17 Jun 2020 13:37	27 Jun 2020 20:22	10
HS20060659-10	CO8_061120	11 Jun 2020 12:45		17 Jun 2020 13:37	27 Jun 2020 20:41	10
Batch ID: 154643 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060659-02	AWD3_061120	11 Jun 2020 08:15		19 Jun 2020 14:00	23 Jun 2020 16:16	1
HS20060659-03	AWD3_061120_a	11 Jun 2020 08:15		19 Jun 2020 14:00	23 Jun 2020 16:19	1
HS20060659-04	MW1_061120	11 Jun 2020 09:05		19 Jun 2020 14:00	23 Jun 2020 17:33	20
HS20060659-04	MW1_061120	11 Jun 2020 09:05		19 Jun 2020 14:00	23 Jun 2020 16:21	1
HS20060659-05	MW6_061120	11 Jun 2020 09:55		19 Jun 2020 14:00	26 Jun 2020 11:10	1
HS20060659-05	MW6_061120	11 Jun 2020 09:55		19 Jun 2020 14:00	23 Jun 2020 17:35	20
HS20060659-05	MW6_061120	11 Jun 2020 09:55		19 Jun 2020 14:00	23 Jun 2020 16:42	1
HS20060659-06	126_061120	11 Jun 2020 10:45		19 Jun 2020 14:00	26 Jun 2020 11:12	1
HS20060659-06	126_061120	11 Jun 2020 10:45		19 Jun 2020 14:00	23 Jun 2020 17:38	20
HS20060659-06	126_061120	11 Jun 2020 10:45		19 Jun 2020 14:00	23 Jun 2020 16:45	1
HS20060659-07	1Z6_061120_a	11 Jun 2020 10:45		19 Jun 2020 14:00	26 Jun 2020 11:20	20
HS20060659-07	1Z6_061120_a	11 Jun 2020 10:45		19 Jun 2020 14:00	26 Jun 2020 11:14	1
HS20060659-07	1Z6_061120_a	11 Jun 2020 10:45		19 Jun 2020 14:00	23 Jun 2020 16:47	1
HS20060659-08	18WW03_061120	11 Jun 2020 11:45		19 Jun 2020 14:00	26 Jun 2020 11:16	1
HS20060659-08	18WW03_061120	11 Jun 2020 11:45		19 Jun 2020 14:00	23 Jun 2020 16:50	1
HS20060659-09	18WW03_061120_a	11 Jun 2020 11:45		19 Jun 2020 14:00	26 Jun 2020 11:18	1
HS20060659-09	18WW03_061120_a	11 Jun 2020 11:45		19 Jun 2020 14:00	23 Jun 2020 16:56	1
Batch ID: 154667 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060659-02	AWD3_061120	11 Jun 2020 08:15		19 Jun 2020 10:00	19 Jun 2020 16:10	1
HS20060659-03	AWD3_061120_a	11 Jun 2020 08:15		19 Jun 2020 10:00	19 Jun 2020 16:12	1
HS20060659-04	MW1_061120	11 Jun 2020 09:05		19 Jun 2020 10:00	19 Jun 2020 16:17	1
HS20060659-05	MW6_061120	11 Jun 2020 09:55		19 Jun 2020 10:00	19 Jun 2020 16:19	1
HS20060659-06	126_061120	11 Jun 2020 10:45		19 Jun 2020 10:00	19 Jun 2020 16:20	1
HS20060659-07	1Z6_061120_a	11 Jun 2020 10:45		19 Jun 2020 10:00	19 Jun 2020 16:22	1
HS20060659-08	18WW03_061120	11 Jun 2020 11:45		19 Jun 2020 10:00	19 Jun 2020 16:24	1
HS20060659-09	18WW03_061120_a	11 Jun 2020 11:45		19 Jun 2020 10:00	19 Jun 2020 16:25	1
Batch ID: R363690 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060659-11	Trip Blank	11 Jun 2020 00:00			20 Jun 2020 13:49	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R363690 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060659-01	MW12_061120	11 Jun 2020 07:25			20 Jun 2020 21:00	1
HS20060659-02	AWD3_061120	11 Jun 2020 08:15			20 Jun 2020 15:01	1
HS20060659-03	AWD3_061120_a	11 Jun 2020 08:15			20 Jun 2020 15:25	1
HS20060659-04	MW1_061120	11 Jun 2020 09:05			20 Jun 2020 21:48	500
HS20060659-04	MW1_061120	11 Jun 2020 09:05			20 Jun 2020 21:24	50
HS20060659-05	MW6_061120	11 Jun 2020 09:55			20 Jun 2020 14:13	1
HS20060659-06	126_061120	11 Jun 2020 10:45			20 Jun 2020 19:00	1
HS20060659-07	1Z6_061120_a	11 Jun 2020 10:45			20 Jun 2020 19:24	1
HS20060659-08	18WW03_061120	11 Jun 2020 11:45			20 Jun 2020 19:48	1
HS20060659-09	18WW03_061120_a	11 Jun 2020 11:45			20 Jun 2020 20:12	1
HS20060659-10	CO8_061120	11 Jun 2020 12:45			20 Jun 2020 20:36	1
Batch ID: R363724 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060659-02	AWD3_061120	11 Jun 2020 08:15			22 Jun 2020 17:04	5
HS20060659-03	AWD3_061120_a	11 Jun 2020 08:15			22 Jun 2020 17:28	5
Batch ID: R364149 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060659-01	MW12_061120	11 Jun 2020 07:25			29 Jun 2020 17:23	1
HS20060659-02	AWD3_061120	11 Jun 2020 08:15			29 Jun 2020 17:23	1
HS20060659-03	AWD3_061120_a	11 Jun 2020 08:15			29 Jun 2020 17:23	1
HS20060659-04	MW1_061120	11 Jun 2020 09:05			29 Jun 2020 17:23	1
HS20060659-05	MW6_061120	11 Jun 2020 09:55			29 Jun 2020 17:23	1
HS20060659-06	126_061120	11 Jun 2020 10:45			29 Jun 2020 17:23	1
HS20060659-07	1Z6_061120_a	11 Jun 2020 10:45			29 Jun 2020 17:23	1
HS20060659-08	18WW03_061120	11 Jun 2020 11:45			29 Jun 2020 17:23	1
HS20060659-09	18WW03_061120_a	11 Jun 2020 11:45			29 Jun 2020 17:23	1
HS20060659-10	CO8_061120	11 Jun 2020 12:45			29 Jun 2020 17:23	1

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:17**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631768** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.01444	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154643** Units: **mg/L** Analysis Date: **23-Jun-2020 13:11**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631766** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1015	0.0100	0.1	0	102	84 - 117				
Antimony	0.04728	0.00500	0.05	0	94.6	85 - 117				
Arsenic	0.04981	0.00500	0.05	0	99.6	84 - 116				
Barium	0.04994	0.00500	0.05	0	99.9	86 - 114				
Beryllium	0.04585	0.00200	0.05	0	91.7	83 - 121				
Cadmium	0.05017	0.00200	0.05	0	100	87 - 115				
Calcium	4.661	0.500	5	0	93.2	87 - 118				
Chromium	0.04826	0.00500	0.05	0	96.5	85 - 116				
Cobalt	0.04736	0.00500	0.05	0	94.7	86 - 115				
Copper	0.04996	0.00500	0.05	0	99.9	85 - 118				
Iron	4.755	0.200	5	0	95.1	87 - 118				
Lead	0.04742	0.00500	0.05	0	94.8	88 - 115				
Magnesium	4.798	0.200	5	0	96.0	83 - 118				
Manganese	0.04969	0.00500	0.05	0	99.4	87 - 115				
Nickel	0.04892	0.00500	0.05	0	97.8	85 - 117				
Potassium	4.943	0.200	5	0	98.9	87 - 115				
Selenium	0.05066	0.00500	0.05	0	101	80 - 120				
Silver	0.05015	0.00500	0.05	0	100	85 - 116				
Sodium	4.799	0.200	5	0	96.0	85 - 117				
Thallium	0.04521	0.00200	0.05	0	90.4	82 - 116				
Vanadium	0.04764	0.00500	0.05	0	95.3	86 - 115				
Zinc	0.05144	0.00500	0.05	0	103	83 - 119				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:25**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631771** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1005	0.0100	0.1	0.01494	85.6	84 - 117				
Antimony	0.04623	0.00500	0.05	0.000146	92.2	85 - 117				
Arsenic	0.04858	0.00500	0.05	0.001705	93.7	84 - 116				
Barium	1.182	0.00500	0.05	1.246	-128	86 - 114				SO
Beryllium	0.04288	0.00200	0.05	0.000021	85.7	83 - 121				
Cadmium	0.04562	0.00200	0.05	0.000129	91.0	87 - 115				
Calcium	45.9	0.500	5	44.32	31.8	87 - 118				SO
Chromium	0.04607	0.00500	0.05	0.000391	91.4	85 - 116				
Cobalt	0.04474	0.00500	0.05	0.000124	89.2	86 - 115				
Copper	0.04601	0.00500	0.05	0.000742	90.5	85 - 118				
Iron	68.61	0.200	5	68.38	4.67	87 - 118				SO
Lead	0.04545	0.00500	0.05	0.000052	90.8	88 - 115				
Magnesium	27.58	0.200	5	24.18	67.9	83 - 118				SO
Manganese	1.197	0.00500	0.05	1.223	-51.8	87 - 115				SO
Nickel	0.04623	0.00500	0.05	0.000426	91.6	85 - 117				
Selenium	0.04772	0.00500	0.05	-0.00002	95.5	80 - 120				
Silver	0.04538	0.00500	0.05	0.000008	90.7	85 - 116				
Sodium	142.4	0.200	5	143.5	-22.6	85 - 117				SO
Thallium	0.0425	0.00200	0.05	-0.000005	85.0	82 - 116				
Vanadium	0.04535	0.00500	0.05	-0.001238	93.2	86 - 115				
Zinc	0.05116	0.00500	0.05	0.006271	89.8	83 - 119				

MS Sample ID: **HS20060498-08MS** Units: **mg/L** Analysis Date: **23-Jun-2020 14:49**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631885** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Potassium	7.851	0.200	5	3.206	92.9	87 - 115				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060498-08MSD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:27**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631772** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1026	0.0100	0.1	0.01494	87.6	84 - 117	0.1005	2	20	
Antimony	0.04773	0.00500	0.05	0.000146	95.2	85 - 117	0.04623	3.2	20	
Arsenic	0.05012	0.00500	0.05	0.001705	96.8	84 - 116	0.04858	3.13	20	
Barium	1.21	0.00500	0.05	1.246	-70.5	86 - 114	1.182	2.4	20	SO
Beryllium	0.04311	0.00200	0.05	0.000021	86.2	83 - 121	0.04288	0.551	20	
Cadmium	0.04831	0.00200	0.05	0.000129	96.4	87 - 115	0.04562	5.74	20	
Calcium	47.19	0.500	5	44.32	57.5	87 - 118	45.9	2.76	20	SO
Chromium	0.04751	0.00500	0.05	0.000391	94.2	85 - 116	0.04607	3.09	20	
Cobalt	0.0458	0.00500	0.05	0.000124	91.4	86 - 115	0.04474	2.34	20	
Copper	0.04698	0.00500	0.05	0.000742	92.5	85 - 118	0.04601	2.09	20	
Iron	70.93	0.200	5	68.38	51.1	87 - 118	68.61	3.33	20	SO
Lead	0.04948	0.00500	0.05	0.000052	98.8	88 - 115	0.04545	8.48	20	
Magnesium	28.33	0.200	5	24.18	83.0	83 - 118	27.58	2.69	20	SO
Manganese	1.223	0.00500	0.05	1.223	0.370	87 - 115	1.197	2.16	20	SO
Nickel	0.04705	0.00500	0.05	0.000426	93.3	85 - 117	0.04623	1.76	20	
Potassium	7.723	0.200	5	3.206	90.3	87 - 115	7.551	2.25	20	
Selenium	0.0485	0.00500	0.05	-0.00002	97.0	80 - 120	0.04772	1.6	20	
Silver	0.04658	0.00500	0.05	0.000008	93.1	85 - 116	0.04538	2.61	20	
Sodium	146.4	0.200	5	143.5	57.2	85 - 117	142.4	2.76	20	SO
Thallium	0.04759	0.00200	0.05	-0.000005	95.2	82 - 116	0.0425	11.3	20	
Vanadium	0.04655	0.00500	0.05	-0.001238	95.6	86 - 115	0.04535	2.63	20	
Zinc	0.0528	0.00500	0.05	0.006271	93.1	83 - 119	0.05116	3.15	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060498-08PDS** Units: **mg/L** Analysis Date: **23-Jun-2020 13:30**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631773** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1148	0.0100	0.1	0.01494	99.8	80 - 120				
Antimony	0.09919	0.00500	0.1	0.000146	99.0	80 - 120				
Arsenic	0.113	0.00500	0.1	0.001705	111	80 - 120				
Barium	1.204	0.00500	0.1	1.246	-41.6	80 - 120				SO
Beryllium	0.0962	0.00200	0.1	0.000021	96.2	80 - 120				
Cadmium	0.106	0.00200	0.1	0.000129	106	80 - 120				
Calcium	51.24	0.500	10	44.32	69.3	80 - 120				SO
Chromium	0.1086	0.00500	0.1	0.000391	108	80 - 120				
Cobalt	0.106	0.00500	0.1	0.000124	106	80 - 120				
Copper	0.1089	0.00500	0.1	0.000742	108	80 - 120				
Iron	73.82	0.200	10	68.38	54.4	80 - 120				SO
Lead	0.1057	0.00500	0.1	0.000052	106	80 - 120				
Magnesium	32.8	0.200	10	24.18	86.2	80 - 120				
Manganese	1.229	0.00500	0.1	1.223	5.63	80 - 120				SO
Nickel	0.109	0.00500	0.1	0.000426	109	80 - 120				
Potassium	13.74	0.200	10	3.206	105	80 - 120				
Selenium	0.1125	0.00500	0.1	-0.00002	113	80 - 120				
Silver	0.1003	0.00500	0.1	0.000008	100	80 - 120				
Sodium	144.2	0.200	10	143.5	7.08	80 - 120				SO
Thallium	0.1096	0.00200	0.1	-0.000005	110	80 - 120				
Vanadium	0.11	0.00500	0.1	-0.001238	111	80 - 120				
Zinc	0.1178	0.00500	0.1	0.006271	111	80 - 120				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154643 (0) **Instrument: ICPMS05** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060498-08SD** Units: **mg/L** Analysis Date: **23-Jun-2020 13:22**
Client ID: Run ID: **ICPMS05_363745** SeqNo: **5631770** PrepDate: **19-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.02193	0.0500					0.01494	0	10	J
Antimony	0.00250	0.0250					0.000146	0	10	U
Arsenic	0.00250	0.0250					0.001705	0	10	U
Barium	1.206	0.0250					1.246	3.18	10	
Beryllium	0.00250	0.0100					0.000021	0	10	U
Cadmium	0.00250	0.0100					0.000129	0	10	U
Calcium	43.81	2.50					44.32	1.14	10	
Chromium	0.00250	0.0250					0.000391	0	10	U
Cobalt	0.00250	0.0250					0.000124	0	10	U
Copper	0.0125	0.0250					0.000742	0	10	U
Iron	70.45	1.00					68.38	3.04	10	
Lead	0.00500	0.0250					0.000052	0	10	U
Magnesium	24.9	1.00					24.18	2.98	10	
Manganese	1.246	0.0250					1.223	1.88	10	
Nickel	0.00500	0.0250					0.000426	0	10	U
Potassium	3.055	1.00					3.206	4.72	10	
Selenium	0.0125	0.0250					-0.00002	0	10	U
Silver	0.00250	0.0250					0.000008	0	10	U
Sodium	146.1	1.00					143.5	1.83	10	
Thallium	0.00250	0.0100					-0.000005	0	10	U
Vanadium	0.00500	0.0250					-0.001238	0	10	U
Zinc	0.0125	0.0250					0.006271	0	10	U

The following samples were analyzed in this batch:

HS20060659-02	HS20060659-03	HS20060659-04	HS20060659-05
HS20060659-06	HS20060659-07	HS20060659-08	HS20060659-09

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154667 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:43**
Client ID: Run ID: **HG03_363622** SeqNo: **5627969** PrepDate: **19-Jun-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-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:45**
Client ID: Run ID: **HG03_363622** SeqNo: **5627970** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00496	0.000200	0.005	0	99.2	82 - 119				

MS Sample ID: **HS20060498-07MS** Units: **mg/L** Analysis Date: **19-Jun-2020 15:48**
Client ID: Run ID: **HG03_363622** SeqNo: **5627972** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00516	0.000200	0.005	0.00001600	103	82 - 119				

MSD Sample ID: **HS20060498-07MSD** Units: **mg/L** Analysis Date: **19-Jun-2020 15:50**
Client ID: Run ID: **HG03_363622** SeqNo: **5627973** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	0.00001600	102	82 - 119	0.005160	0.778	20	

The following samples were analyzed in this batch:

HS20060659-02	HS20060659-03	HS20060659-04	HS20060659-05
HS20060659-06	HS20060659-07	HS20060659-08	HS20060659-09

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: 154567 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 11:33**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640909** PrepDate: **17-Jun-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	*0.07389*	*0*	*0.08*	*0*	*92.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0807*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07132*	*0*	*0.08*	*0*	*89.2*	*40 - 140*				

LCS Sample ID: **LCS-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 11:53**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640910** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08076	0.010	0.08	0	101	40 - 140				
Surr: 2-Fluorobiphenyl	*0.08048*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08046*	*0*	*0.08*	*0*	*101*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08358*	*0*	*0.08*	*0*	*104*	*40 - 140*				

LCSD Sample ID: **LCSD-154567** Units: **ug/L** Analysis Date: **27-Jun-2020 12:12**
Client ID: Run ID: **SV-6_364106** SeqNo: **5640911** PrepDate: **17-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08746	0.010	0.08	0	109	40 - 140	0.08076	7.96	20	
Surr: 2-Fluorobiphenyl	*0.08039*	*0*	*0.08*	*0*	*100*	*40 - 140*	*0.08048*	*0.109*	*20*	
Surr: 4-Terphenyl-d14	*0.07969*	*0*	*0.08*	*0*	*99.6*	*40 - 140*	*0.08046*	*0.957*	*20*	
Surr: Nitrobenzene-d5	*0.07613*	*0*	*0.08*	*0*	*95.2*	*40 - 140*	*0.08358*	*9.33*	*20*	

The following samples were analyzed in this batch: HS20060659-06 HS20060659-07 HS20060659-08 HS20060659-09 HS20060659-10

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 13:02**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629824** 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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 13:02**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629824** 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	*47.97*	*1.0*	*50*	*0*	*95.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.44*	*1.0*	*50*	*0*	*96.9*	*85 - 114*				
Surr: Dibromofluoromethane	*48.46*	*1.0*	*50*	*0*	*96.9*	*80 - 119*				
Surr: Toluene-d8	*52.49*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 12:14**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629823** 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	20.55	1.0	20	0	103	78 - 124				
1,1,1-Trichloroethane	20.11	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	20.31	1.0	20	0	102	71 - 121				
1,1,2-Trichloroethane	20.55	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	19.29	1.0	20	0	96.5	77 - 125				
1,1-Dichloroethene	19.03	1.0	20	0	95.2	71 - 131				
1,1-Dichloropropene	19.24	1.0	20	0	96.2	78 - 125				
1,2,3-Trichlorobenzene	23.75	1.0	20	0	119	69 - 129				
1,2,3-Trichloropropane	19.77	1.0	20	0	98.8	73 - 122				
1,2,4-Trichlorobenzene	23.95	1.0	20	0	120	69 - 130				
1,2,4-Trimethylbenzene	19.9	1.0	20	0	99.5	76 - 124				
1,2-Dibromo-3-chloropropane	19.75	1.0	20	0	98.7	62 - 128				
1,2-Dibromoethane	20.98	1.0	20	0	105	77 - 121				
1,2-Dichlorobenzene	20.5	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	20.54	1.0	20	0	103	73 - 128				
1,2-Dichloropropane	21.2	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	20.5	1.0	20	0	102	75 - 124				
1,3-Dichlorobenzene	20.11	1.0	20	0	101	80 - 119				
1,3-Dichloropropane	20.73	1.0	20	0	104	80 - 119				
1,4-Dichlorobenzene	20.05	1.0	20	0	100	79 - 118				
2,2-Dichloropropane	19.69	1.0	20	0	98.5	60 - 139				
2-Butanone	37.08	2.0	40	0	92.7	56 - 143				
2-Chlorotoluene	19.84	1.0	20	0	99.2	79 - 122				
2-Hexanone	42.02	2.0	40	0	105	57 - 139				
4-Chlorotoluene	19.99	1.0	20	0	99.9	78 - 122				
4-Isopropyltoluene	20.75	1.0	20	0	104	77 - 127				
4-Methyl-2-pentanone	41.69	2.0	40	0	104	67 - 130				
Acetone	42.99	2.0	40	0	107	39 - 160				
Benzene	20.42	1.0	20	0	102	79 - 120				
Bromobenzene	20.02	1.0	20	0	100	80 - 120				
Bromochloromethane	19.28	1.0	20	0	96.4	78 - 123				
Bromodichloromethane	20.73	1.0	20	0	104	79 - 125				
Bromoform	20.31	1.0	20	0	102	66 - 130				
Bromomethane	19.86	1.0	20	0	99.3	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200620** Units: **UG/L** Analysis Date: **20-Jun-2020 12:14**
Client ID: Run ID: **VOA6_363690** SeqNo: **5629823** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	39.61	2.0	40	0	99.0	64 - 133				
Carbon tetrachloride	18.94	1.0	20	0	94.7	72 - 136				
Chlorobenzene	20.37	1.0	20	0	102	82 - 118				
Chloroethane	19.63	1.0	20	0	98.1	60 - 138				
Chloroform	19.93	1.0	20	0	99.6	79 - 124				
Chloromethane	19.99	1.0	20	0	100.0	50 - 139				
cis-1,2-Dichloroethene	19.8	1.0	20	0	99.0	78 - 123				
cis-1,3-Dichloropropene	20.89	1.0	20	0	104	75 - 124				
Dibromochloromethane	20.46	1.0	20	0	102	74 - 126				
Dibromomethane	20.4	1.0	20	0	102	79 - 123				
Dichlorodifluoromethane	18.98	1.0	20	0	94.9	32 - 152				
Ethylbenzene	19.53	1.0	20	0	97.6	79 - 121				
Hexachlorobutadiene	26.94	1.0	20	0	135	66 - 134				S
Isopropylbenzene	20.46	1.0	20	0	102	72 - 131				
m,p-Xylene	41.36	2.0	40	0	103	80 - 121				
Methylene chloride	18.85	2.0	20	0	94.2	74 - 124				
Naphthalene	22.08	1.0	20	0	110	61 - 128				
n-Butylbenzene	20.98	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.13	1.0	20	0	101	76 - 126				
o-Xylene	20.43	1.0	20	0	102	78 - 122				
sec-Butylbenzene	20.51	1.0	20	0	103	77 - 126				
Styrene	20.54	1.0	20	0	103	78 - 123				
tert-Butylbenzene	20.33	1.0	20	0	102	78 - 124				
Tetrachloroethene	20.54	1.0	20	0	103	74 - 129				
Toluene	20.63	1.0	20	0	103	80 - 121				
trans-1,2-Dichloroethene	20.67	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.42	1.0	20	0	102	73 - 127				
Trichloroethene	20.29	1.0	20	0	101	79 - 123				
Trichlorofluoromethane	20.06	1.0	20	0	100	65 - 141				
Vinyl chloride	18.98	1.0	20	0	94.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.52*	*1.0*	*50*	*0*	*99.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.3*	*1.0*	*50*	*0*	*98.6*	*85 - 114*				
Surr: Dibromofluoromethane	*49.47*	*1.0*	*50*	*0*	*98.9*	*80 - 119*				
Surr: Toluene-d8	*50.6*	*1.0*	*50*	*0*	*101*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060659-05MS** Units: **UG/L** Analysis Date: **20-Jun-2020 15:49**
Client ID: **MW6_061120** Run ID: **VOA6_363690** SeqNo: **5629831** 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	20.27	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	21.09	1.0	20	0	105	74 - 131				
1,1,2,2-Tetrachloroethane	19.63	1.0	20	0	98.1	71 - 121				
1,1,2-Trichloroethane	20.54	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	21.24	1.0	20	1.886	96.8	77 - 125				
1,1-Dichloroethene	22.03	1.0	20	0	110	71 - 131				
1,1-Dichloropropene	20.81	1.0	20	0	104	78 - 125				
1,2,3-Trichlorobenzene	10.23	1.0	20	0	51.2	69 - 129				S
1,2,3-Trichloropropane	19.19	1.0	20	0	95.9	73 - 122				
1,2,4-Trichlorobenzene	12.37	1.0	20	0	61.8	69 - 130				S
1,2,4-Trimethylbenzene	21.8	1.0	20	0	109	76 - 124				
1,2-Dibromo-3-chloropropane	14.89	1.0	20	0	74.5	62 - 128				
1,2-Dibromoethane	20.45	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.31	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.4	1.0	20	0	102	73 - 128				
1,2-Dichloropropane	21.22	1.0	20	0	106	78 - 122				
1,3,5-Trimethylbenzene	22.64	1.0	20	0	113	75 - 124				
1,3-Dichlorobenzene	21.58	1.0	20	0.7075	104	80 - 119				
1,3-Dichloropropane	20.34	1.0	20	0	102	80 - 119				
1,4-Dichlorobenzene	20.66	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	19.75	1.0	20	0	98.8	60 - 139				
2-Butanone	32.16	2.0	40	0	80.4	56 - 143				
2-Chlorotoluene	21.51	1.0	20	0	108	79 - 122				
2-Hexanone	38.57	2.0	40	0	96.4	57 - 139				
4-Chlorotoluene	21.75	1.0	20	0	109	78 - 122				
4-Isopropyltoluene	22.59	1.0	20	0	113	77 - 127				
4-Methyl-2-pentanone	38.59	2.0	40	0	96.5	67 - 130				
Acetone	31.63	2.0	40	0	79.1	39 - 160				
Benzene	21.07	1.0	20	0	105	79 - 120				
Bromobenzene	21.11	1.0	20	0	106	80 - 120				
Bromochloromethane	18.64	1.0	20	0	93.2	78 - 123				
Bromodichloromethane	20.98	1.0	20	0	105	79 - 125				
Bromoform	20.12	1.0	20	0	101	66 - 130				
Bromomethane	19.28	1.0	20	0	96.4	53 - 141				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060659-05MS** Units: **UG/L** Analysis Date: **20-Jun-2020 15:49**
Client ID: **MW6_061120** Run ID: **VOA6_363690** SeqNo: **5629831** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	40.81	2.0	40	0	102	64 - 133				
Carbon tetrachloride	21.37	1.0	20	0	107	72 - 136				
Chlorobenzene	20.4	1.0	20	0	102	82 - 118				
Chloroethane	19.67	1.0	20	0	98.3	60 - 138				
Chloroform	19.7	1.0	20	0	98.5	79 - 124				
Chloromethane	19.24	1.0	20	0	96.2	50 - 139				
cis-1,2-Dichloroethene	26.42	1.0	20	6.401	100	78 - 123				
cis-1,3-Dichloropropene	20.73	1.0	20	0	104	75 - 124				
Dibromochloromethane	20.33	1.0	20	0	102	74 - 126				
Dibromomethane	19.82	1.0	20	0	99.1	79 - 123				
Dichlorodifluoromethane	17.66	1.0	20	0	88.3	32 - 152				
Ethylbenzene	21.36	1.0	20	0	107	79 - 121				
Hexachlorobutadiene	14.71	1.0	20	0	73.6	66 - 134				
Isopropylbenzene	22.54	1.0	20	0	113	72 - 131				
m,p-Xylene	43.39	2.0	40	0	108	80 - 121				
Methylene chloride	17.59	2.0	20	0	88.0	74 - 124				
Naphthalene	11.9	1.0	20	0	59.5	61 - 128				S
n-Butylbenzene	22.76	1.0	20	0	114	75 - 128				
n-Propylbenzene	22.91	1.0	20	0	115	76 - 126				
o-Xylene	21.12	1.0	20	0	106	78 - 122				
sec-Butylbenzene	23.05	1.0	20	0	115	77 - 126				
Styrene	20.61	1.0	20	0	103	78 - 123				
tert-Butylbenzene	23.02	1.0	20	0	115	78 - 124				
Tetrachloroethene	22.33	1.0	20	0	112	74 - 129				
Toluene	21.56	1.0	20	0	108	80 - 121				
trans-1,2-Dichloroethene	20.64	1.0	20	0	103	75 - 124				
trans-1,3-Dichloropropene	20.16	1.0	20	0	101	73 - 127				
Trichloroethene	41.46	1.0	20	19.02	112	79 - 123				
Trichlorofluoromethane	21.86	1.0	20	0	109	65 - 141				
Vinyl chloride	20.61	1.0	20	0.9419	98.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.26*	*1.0*	*50*	*0*	*98.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.77*	*1.0*	*50*	*0*	*102*	*85 - 114*				
Surr: Dibromofluoromethane	*49.92*	*1.0*	*50*	*0*	*99.8*	*80 - 119*				
Surr: Toluene-d8	*54.02*	*1.0*	*50*	*0*	*108*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060659-05MSD** Units: **UG/L** Analysis Date: **20-Jun-2020 16:13**
Client ID: **MW6_061120** Run ID: **VOA6_363690** SeqNo: **5629832** 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	21.11	1.0	20	0	106	78 - 124	20.27	4.04	20	
1,1,1-Trichloroethane	20.83	1.0	20	0	104	74 - 131	21.09	1.22	20	
1,1,2,2-Tetrachloroethane	19.9	1.0	20	0	99.5	71 - 121	19.63	1.39	20	
1,1,2-Trichloroethane	20.45	1.0	20	0	102	80 - 119	20.54	0.412	20	
1,1-Dichloroethane	20.04	1.0	20	1.886	90.8	77 - 125	21.24	5.83	20	
1,1-Dichloroethene	20.99	1.0	20	0	105	71 - 131	22.03	4.87	20	
1,1-Dichloropropene	21.58	1.0	20	0	108	78 - 125	20.81	3.62	20	
1,2,3-Trichlorobenzene	15.19	1.0	20	0	76.0	69 - 129	10.23	39	20	R
1,2,3-Trichloropropane	19.07	1.0	20	0	95.3	73 - 122	19.19	0.614	20	
1,2,4-Trichlorobenzene	15.22	1.0	20	0	76.1	69 - 130	12.37	20.7	20	R
1,2,4-Trimethylbenzene	22.39	1.0	20	0	112	76 - 124	21.8	2.65	20	
1,2-Dibromo-3-chloropropane	15.62	1.0	20	0	78.1	62 - 128	14.89	4.8	20	
1,2-Dibromoethane	19.9	1.0	20	0	99.5	77 - 121	20.45	2.69	20	
1,2-Dichlorobenzene	20.43	1.0	20	0	102	80 - 119	20.31	0.591	20	
1,2-Dichloroethane	19.66	1.0	20	0	98.3	73 - 128	20.4	3.72	20	
1,2-Dichloropropane	20.75	1.0	20	0	104	78 - 122	21.22	2.23	20	
1,3,5-Trimethylbenzene	23.62	1.0	20	0	118	75 - 124	22.64	4.26	20	
1,3-Dichlorobenzene	22.28	1.0	20	0.7075	108	80 - 119	21.58	3.22	20	
1,3-Dichloropropane	19.76	1.0	20	0	98.8	80 - 119	20.34	2.89	20	
1,4-Dichlorobenzene	20.7	1.0	20	0	104	79 - 118	20.66	0.201	20	
2,2-Dichloropropane	19.09	1.0	20	0	95.4	60 - 139	19.75	3.43	20	
2-Butanone	29.98	2.0	40	0	75.0	56 - 143	32.16	7	20	
2-Chlorotoluene	22.15	1.0	20	0	111	79 - 122	21.51	2.93	20	
2-Hexanone	38.46	2.0	40	0	96.2	57 - 139	38.57	0.273	20	
4-Chlorotoluene	22.18	1.0	20	0	111	78 - 122	21.75	1.96	20	
4-Isopropyltoluene	24.23	1.0	20	0	121	77 - 127	22.59	7	20	
4-Methyl-2-pentanone	38.26	2.0	40	0	95.6	67 - 130	38.59	0.862	20	
Acetone	29.46	2.0	40	0	73.6	39 - 160	31.63	7.13	20	
Benzene	21.11	1.0	20	0	106	79 - 120	21.07	0.188	20	
Bromobenzene	20.57	1.0	20	0	103	80 - 120	21.11	2.58	20	
Bromochloromethane	17.37	1.0	20	0	86.8	78 - 123	18.64	7.05	20	
Bromodichloromethane	20.4	1.0	20	0	102	79 - 125	20.98	2.79	20	
Bromoform	19.64	1.0	20	0	98.2	66 - 130	20.12	2.41	20	
Bromomethane	18.82	1.0	20	0	94.1	53 - 141	19.28	2.4	20	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060659-05MSD** Units: **UG/L** Analysis Date: **20-Jun-2020 16:13**
Client ID: **MW6_061120** Run ID: **VOA6_363690** SeqNo: **5629832** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	40.43	2.0	40	0	101	64 - 133	40.81	0.944	20	
Carbon tetrachloride	21.98	1.0	20	0	110	72 - 136	21.37	2.83	20	
Chlorobenzene	20.97	1.0	20	0	105	82 - 118	20.4	2.77	20	
Chloroethane	18.56	1.0	20	0	92.8	60 - 138	19.67	5.83	20	
Chloroform	18.74	1.0	20	0	93.7	79 - 124	19.7	4.98	20	
Chloromethane	18.08	1.0	20	0	90.4	50 - 139	19.24	6.18	20	
cis-1,2-Dichloroethene	24.73	1.0	20	6.401	91.6	78 - 123	26.42	6.62	20	
cis-1,3-Dichloropropene	20.35	1.0	20	0	102	75 - 124	20.73	1.81	20	
Dibromochloromethane	20.11	1.0	20	0	101	74 - 126	20.33	1.09	20	
Dibromomethane	19.31	1.0	20	0	96.5	79 - 123	19.82	2.62	20	
Dichlorodifluoromethane	17.85	1.0	20	0	89.3	32 - 152	17.66	1.08	20	
Ethylbenzene	21.6	1.0	20	0	108	79 - 121	21.36	1.13	20	
Hexachlorobutadiene	18.44	1.0	20	0	92.2	66 - 134	14.71	22.5	20	R
Isopropylbenzene	23.14	1.0	20	0	116	72 - 131	22.54	2.61	20	
m,p-Xylene	44.95	2.0	40	0	112	80 - 121	43.39	3.54	20	
Methylene chloride	16.63	2.0	20	0	83.2	74 - 124	17.59	5.61	20	
Naphthalene	15.95	1.0	20	0	79.8	61 - 128	11.9	29.1	20	R
n-Butylbenzene	24.13	1.0	20	0	121	75 - 128	22.76	5.82	20	
n-Propylbenzene	24.11	1.0	20	0	121	76 - 126	22.91	5.07	20	
o-Xylene	21.18	1.0	20	0	106	78 - 122	21.12	0.302	20	
sec-Butylbenzene	24.66	1.0	20	0	123	77 - 126	23.05	6.77	20	
Styrene	20.55	1.0	20	0	103	78 - 123	20.61	0.273	20	
tert-Butylbenzene	24.03	1.0	20	0	120	78 - 124	23.02	4.29	20	
Tetrachloroethene	23.84	1.0	20	0	119	74 - 129	22.33	6.52	20	
Toluene	21.95	1.0	20	0	110	80 - 121	21.56	1.8	20	
trans-1,2-Dichloroethene	20.19	1.0	20	0	101	75 - 124	20.64	2.23	20	
trans-1,3-Dichloropropene	19.48	1.0	20	0	97.4	73 - 127	20.16	3.45	20	
Trichloroethene	41.43	1.0	20	19.02	112	79 - 123	41.46	0.0705	20	
Trichlorofluoromethane	21.89	1.0	20	0	109	65 - 141	21.86	0.16	20	
Vinyl chloride	20.28	1.0	20	0.9419	96.7	58 - 137	20.61	1.65	20	
Surr: 1,2-Dichloroethane-d4	*45.57*	*1.0*	*50*	*0*	*91.1*	*81 - 118*	*49.26*	*7.77*	*20*	
Surr: 4-Bromofluorobenzene	*51.02*	*1.0*	*50*	*0*	*102*	*85 - 114*	*50.77*	*0.486*	*20*	
Surr: Dibromofluoromethane	*47.5*	*1.0*	*50*	*0*	*95.0*	*80 - 119*	*49.92*	*4.97*	*20*	
Surr: Toluene-d8	*54.63*	*1.0*	*50*	*0*	*109*	*89 - 112*	*54.02*	*1.13*	*20*	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363690 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20060659-01	HS20060659-02	HS20060659-03	HS20060659-04
HS20060659-05	HS20060659-06	HS20060659-07	HS20060659-08
HS20060659-09	HS20060659-10	HS20060659-11	

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200622** Units: **UG/L** Analysis Date: **22-Jun-2020 12:40**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630807** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Trichloroethene	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.17*	*1.0*	*50*	*0*	*86.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*43.03*	*1.0*	*50*	*0*	*86.1*	*85 - 114*				
Surr: Dibromofluoromethane	*43.29*	*1.0*	*50*	*0*	*86.6*	*80 - 119*				
Surr: Toluene-d8	*47.24*	*1.0*	*50*	*0*	*94.5*	*89 - 112*				

LCS Sample ID: **VLCSW-200622** Units: **UG/L** Analysis Date: **22-Jun-2020 11:52**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630806** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Trichloroethene	21.53	1.0	20	0	108	79 - 123				
Surr: 1,2-Dichloroethane-d4	*49.75*	*1.0*	*50*	*0*	*99.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.53*	*1.0*	*50*	*0*	*95.1*	*85 - 114*				
Surr: Dibromofluoromethane	*50.72*	*1.0*	*50*	*0*	*101*	*80 - 119*				
Surr: Toluene-d8	*49.39*	*1.0*	*50*	*0*	*98.8*	*89 - 112*				

MS Sample ID: **HS20060846-02MS** Units: **UG/L** Analysis Date: **22-Jun-2020 16:16**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630809** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Trichloroethene	22.09	1.0	20	1.422	103	79 - 123				
Surr: 1,2-Dichloroethane-d4	*39.89*	*1.0*	*50*	*0*	*79.8*	*81 - 118*				S
Surr: 4-Bromofluorobenzene	*48.04*	*1.0*	*50*	*0*	*96.1*	*85 - 114*				
Surr: Dibromofluoromethane	*43.85*	*1.0*	*50*	*0*	*87.7*	*80 - 119*				
Surr: Toluene-d8	*55*	*1.0*	*50*	*0*	*110*	*89 - 112*				

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060659

QC BATCH REPORT

Batch ID: R363724 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060846-02MSD** Units: **UG/L** Analysis Date: **22-Jun-2020 16:40**
Client ID: Run ID: **VOA6_363724** SeqNo: **5630810** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Trichloroethene	22.29	1.0	20	1.422	104	79 - 123	22.09	0.883	20	
Surr: 1,2-Dichloroethane-d4	*40.72*	*1.0*	*50*	*0*	*81.4*	*81 - 118*	*39.89*	*2.05*	*20*	
Surr: 4-Bromofluorobenzene	*48.8*	*1.0*	*50*	*0*	*97.6*	*85 - 114*	*48.04*	*1.57*	*20*	
Surr: Dibromofluoromethane	*43.23*	*1.0*	*50*	*0*	*86.5*	*80 - 119*	*43.85*	*1.43*	*20*	
Surr: Toluene-d8	*55.07*	*1.0*	*50*	*0*	*110*	*89 - 112*	*55*	*0.113*	*20*	

The following samples were analyzed in this batch: HS20060659-02 HS20060659-03

ALS Houston, US Date: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060659**

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
Illinois	2000322020-4	09-May-2021
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: 29-Jun-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060659

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060659-01	MW12_061120	Login	6/12/2020 3:13:27 PM	NDR	MET018
HS20060659-01	MW12_061120	Login	6/12/2020 3:13:27 PM	NDR	Sub
HS20060659-01	MW12_061120	Login	6/12/2020 3:13:27 PM	NDR	EXT190
HS20060659-01	MW12_061120	Login	6/12/2020 3:13:27 PM	NDR	VOA101
HS20060659-02	AWD3_061120	Login	6/12/2020 3:13:27 PM	NDR	Sub
HS20060659-02	AWD3_061120	Login	6/12/2020 3:13:27 PM	NDR	EXT190
HS20060659-02	AWD3_061120	Login	6/12/2020 3:13:27 PM	NDR	VOA101
HS20060659-03	AWD3_061120_a	Login	6/12/2020 3:13:27 PM	NDR	Sub
HS20060659-03	AWD3_061120_a	Login	6/12/2020 3:13:27 PM	NDR	EXT190
HS20060659-03	AWD3_061120_a	Login	6/12/2020 3:13:27 PM	NDR	VOA101
HS20060659-04	MW1_061120	Login	6/12/2020 3:13:27 PM	NDR	MET018
HS20060659-04	MW1_061120	Login	6/12/2020 3:13:27 PM	NDR	Sub
HS20060659-04	MW1_061120	Login	6/12/2020 3:13:27 PM	NDR	VOA101
HS20060659-05	MW6_061120	Login	6/12/2020 3:13:27 PM	NDR	Sub
HS20060659-05	MW6_061120	Login	6/12/2020 3:13:27 PM	NDR	EXT190
HS20060659-05	MW6_061120	Login	6/12/2020 3:13:27 PM	NDR	VOA101

ALS Houston, US Date: 29-Jun-20

Sample Receipt Checklist

Work Order ID: HS20060659 **Date/Time Received:** 12-Jun-2020 08:50

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

Completed By:	/S/ Nilesh D. Ranchod	12-Jun-2020 16:08	**Reviewed by:**	/S/ RJ Modashia	15-Jun-2020 10:42
	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 ☐	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):	0.8C UC/C	IR15	
Cooler(s)/Kit(s):	42870		
Date/Time sample(s) sent to storage:	06/12/2020 17:00		
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:

bhate

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

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

COC Number(1): _____

LIMS Number: _____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested[5] | Quality Assurance Samples[6]

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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Control	Cooler ID
MW12_061120	11JUN2020	0725	-	N		WG	4	X	X					
AWD3_061120	11JUN2020	0815	-	N		WG	5	X	X	X				
AWD3_061120_a	11JUN2020	0815	-	FD		WG	5	X	X	X				
MW1_061120	11JUN2020	0905		N		WG	5	X	X	X				
MW6_061120	11JUN2020	0955		N		WG	5	X	X	X				
126_061120	11JUN2020	1045	-	N		WG	6	X	X	X	X			
126_061120_a	11JUN2020	1045	-	FD		WG	6	X	X	X	X			
18WW03_061120	11JUN2020	1145	-	N		WG	6	X	X	X	X			
18WW03_061120_a	11JUN2020	1145	-	FD		WG	6	X	X	X	X			
C08_061120	11JUN2020	1245	-	N		WG	5	X	X		X			
TRIP BLANK	11JUN2020		-	TB		W	2	X						

HS20060659
Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS:

Cooler 42870 IWCIS
Temp 0.8°C CF0.0

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/11/20	1430	1. J. [illegible]	6/12/20	08:50
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

Method of Shipment: _____

Fed Ex Airbill Number:

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

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

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

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

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

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

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

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

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

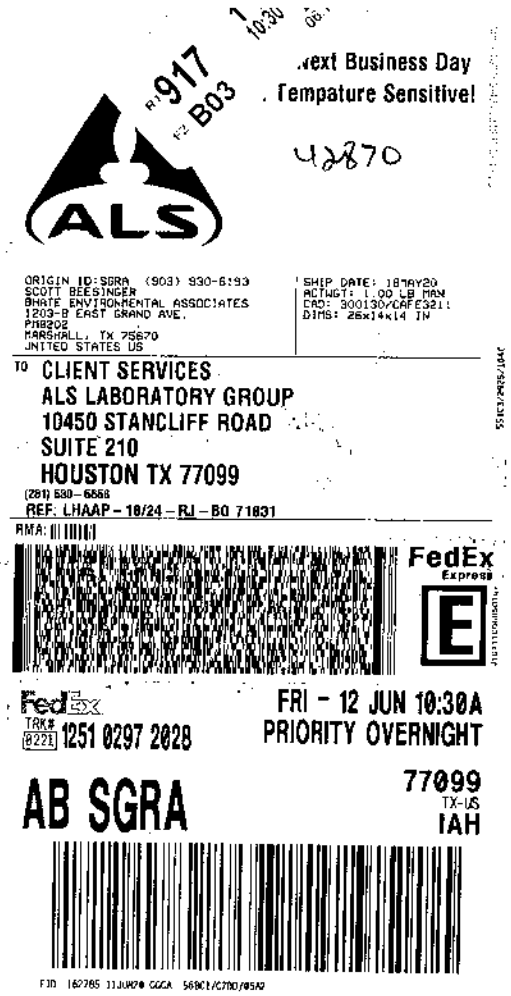
42870

CUSTODY SEAL

Date: 6/11/20 Time: 1430
Name: Scott Beesinger
Company: Bhate

Seal Broken By: SM
Date: 06/12/20

42870 JUN 12 2020



June 29, 2020 Service Request No:E2000542

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

Laboratory Results for: HS20060659

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 12, 2020
For your reference, these analyses have been assigned our service request number **E2000542.**

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.:**	E2000542
Project:	HS20060659	**Date Received:**	06/12/20
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

Ten samples were received for analysis at ALS Environmental in Houston on 06/12/20.

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:

EQ2000245: 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.

Client: ALS Environmental - US **Service Request:**E2000542
Project: HS20060659

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000542-001	MW12_061120	6/11/2020	0725
E2000542-002	AWD3_061120	6/11/2020	0815
E2000542-003	AWD3_061120_a	6/11/2020	0815
E2000542-004	MW1_061120	6/11/2020	0905
E2000542-005	MW6_061120	6/11/2020	0955
E2000542-006	126_061120	6/11/2020	1045
E2000542-007	126_061120_a	6/11/2020	1045
E2000542-008	18WW03_061120	6/11/2020	1145
E2000542-009	18WW03_061120_a	6/11/2020	1145
E2000542-010	CO8_061120	6/11/2020	1245

Service Request Summary

Folder #: **E2000542**
Client Name: ALS Environmental - US
Project Name: HS20060659
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: 06/12/20
Internal Due Date: 6/26/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060659
EDD: No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000542-001	MW12_061120	Ground Water	06/11/20 0725	**IV**
E2000542-002	AWD3_061120	Ground Water	06/11/20 0815	**IV**
E2000542-003	AWD3_061120_a	Ground Water	06/11/20 0815	**IV**
E2000542-004	MW1_061120	Ground Water	06/11/20 0905	**IV**
E2000542-005	MW6_061120	Ground Water	06/11/20 0955	**IV**
E2000542-006	126_061120	Ground Water	06/11/20 1045	**IV**
E2000542-007	126_061120_a	Ground Water	06/11/20 1045	**IV**
E2000542-008	18WW03_061120	Ground Water	06/11/20 1145	**IV**
E2000542-009	18WW03_061120_a	Ground Water	06/11/20 1145	**IV**
E2000542-010	CO8_061120	Ground Water	06/11/20 1245	**IV**

Service Request Summary

Folder #:	**E2000542**
Client Name:	ALS Environmental - US
Project Name:	HS20060659
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:	06/12/20
Internal Due Date:	6/26/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20060659
EDD:	No EDD Specified

10 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-AirArch 4

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	10	Level IV due 7/3,level II 6/26

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
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
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 Department of Health and Human Services	2020016	6/5/2022
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



E2000542 5
ALS Laboratory Group
HS20060659



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Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14114**

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:	HS20060659
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060659-01**	**MW12_061120**	**Groundwater**	**11 Jun 2020 07:25**
	SUB_Perch-6850			26 Jun 2020
2.	**HS20060659-02**	**AWD3_061120**	**Groundwater**	**11 Jun 2020 08:15**
	SUB_Perch-6850			26 Jun 2020
3.	**HS20060659-03**	**AWD3_061120_a**	**Groundwater**	**11 Jun 2020 08:15**
	SUB_Perch-6850			26 Jun 2020
4.	**HS20060659-04**	**MW1_061120**	**Groundwater**	**11 Jun 2020 09:05**
	SUB_Perch-6850			26 Jun 2020
5.	**HS20060659-05**	**MW6_061120**	**Groundwater**	**11 Jun 2020 09:55**
	SUB_Perch-6850			26 Jun 2020
6.	**HS20060659-06**	**126_061120**	**Groundwater**	**11 Jun 2020 10:45**
	SUB_Perch-6850			26 Jun 2020
7.	**HS20060659-07**	**1Z6_061120_a**	**Groundwater**	**11 Jun 2020 10:45**
	SUB_Perch-6850			26 Jun 2020
8.	**HS20060659-08**	**18WW03_061120**	**Groundwater**	**11 Jun 2020 11:45**
	SUB_Perch-6850			26 Jun 2020
9.	**HS20060659-09**	**18WW03_061120_a**	**Groundwater**	**11 Jun 2020 11:45**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14114**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
		ANALYSIS REQUESTED		DUE DATE
		SUB_Perch-6850		26 Jun 2020
10.	**HS20060659-10**	**CO8_061120**	**Groundwater**	**11 Jun 2020 12:45**
		SUB_Perch-6850		26 Jun 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: _____

Received By: _____ Date/Time: 6/12/20 1900

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALY-H1

Thermometer ID IR24

Date/Time Received: 6/12/20 Initials: CH Date/Time Logged in: 6/12/20 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALY 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?
-		6/12/20	1400	CH	2.4	✓
						☐
						☐
						☐

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:

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#: 360259 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/18/20 09:08

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000542-001	MW12_061120	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000542-002	AWD3_061120	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000542-003	AWD3_061120_a	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000542-004	MW1_061120	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000542-005	MW6_061120	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000542-006	126_061120	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000542-007	126_061120_a	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000542-008	18WW03_061120	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000542-009	18WW03_061120_a	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000542-010	CO8_061120	.01	6850/ClO4 DOD			Ground Water	10mL	
11	EQ2000245-01	MB		6850/ClO4 DOD			Liquid	10mL	
12	EQ2000245-02	LCS		6850/ClO4 DOD			Liquid	10mL	
13	EQ2000245-03	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

E2000542-001	100.00µL	E2000542-002	100.00µL	E2000542-003	100.00µL	E2000542-004	100.00µL	E2000542-005	100.00µL	E2000542-006	100.00µL
E2000542-007	100.00µL	E2000542-008	100.00µL	E2000542-009	100.00µL	E2000542-010	100.00µL	EQ2000245-01	100.00µL	EQ2000245-02	100.00µL
EQ2000245-03	100.00µL										

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

EQ2000245-02	1.00µL	EQ2000245-03	1.00µL

Preparation Steps

Step: Preparation
Started: 6/18/20 09:08
Finished: 6/18/20 17:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Preparation Information Benchsheet

Prep Run#: 360259
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/18/20 09:08

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:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 0725
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW12_061120	**Units:**	µg/L
Lab Code:	E2000542-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/27/20 12:53	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 0815
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	AWD3_061120	**Units:**	µg/L
Lab Code:	E2000542-002	**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	**4.07**		0.100	0.0500	0.0250	1	6/18/20	6/27/20 13:01	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 0815
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	AWD3_061120_a	**Units:**	µg/L
Lab Code:	E2000542-003	**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	**4.04**		0.100	0.0500	0.0250	1	6/18/20	6/27/20 13:09	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 0905
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW1_061120	**Units:**	µg/L
Lab Code:	E2000542-004	**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	**2350**		10.0	5.00	2.50	100	6/18/20	6/29/20 13:18	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 0955
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	MW6_061120	**Units:**	µg/L
Lab Code:	E2000542-005	**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	**3890**		10.0	5.00	2.50	100	6/18/20	6/29/20 13:26	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 1045
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	126_061120	**Units:**	µg/L
Lab Code:	E2000542-006	**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	**1.08**		0.100	0.0500	0.0250	1	6/18/20	6/27/20 13:33	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 1045
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	126_061120_a	**Units:**	µg/L
Lab Code:	E2000542-007	**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	**0.462**		0.100	0.0500	0.0250	1	6/18/20	6/27/20 13:41	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 1145
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18WW03_061120	**Units:**	µg/L
Lab Code:	E2000542-008	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.110**		0.100	0.0500	0.0250	1	6/18/20	6/27/20 14:04	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 1145
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	18WW03_061120_a	**Units:**	µg/L
Lab Code:	E2000542-009	**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	**38.2**		0.100	0.0500	0.0250	1	6/18/20	6/29/20 14:07	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	6/11/20 1245
Sample Matrix:	Ground Water	**Date Received:**	6/12/20
Sample Name:	CO8_061120	**Units:**	µg/L
Lab Code:	E2000542-010	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/27/20 14:19	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000245-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/18/20	6/27/20 18:08	360259	685423	

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:**	E2000542
Project:	HS20060659	**Date Analyzed:**	6/27/20
Sample Matrix:	Ground Water		

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	360259

	Lab Control Sample EQ2000245-02			Duplicate Lab Control Sample EQ2000245-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.103	0.100	103	0.0896	0.100	90	84 - 119	14	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:**	E2000542
Project:	HS20060659	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000245-02	**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	**0.103**		0.100	0.0500	0.0250	1	6/18/20	6/27/20 18:16	360259	685423	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000542
Project:	HS20060659	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000245-03	**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	**0.0896**	J	0.100	0.0500	0.0250	1	6/18/20	6/27/20 18:24	360259	685423	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
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Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
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T: +1 281 530 5656
F: +1 281 530 5887

July 06, 2020

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

Work Order: **HS20060849**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

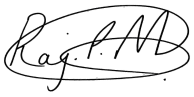
ALS Environmental received 12 sample(s) on Jun 17, 2020 for the analysis presented in the following report.

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: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060849

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060849-01	17ww08_061520	Groundwater		15-Jun-2020 08:20	17-Jun-2020 09:12	☐
HS20060849-02	18CPTMW10DW_061520	Groundwater		15-Jun-2020 09:20	17-Jun-2020 09:12	☐
HS20060849-03	18CPTMW10DW_061520_a	Groundwater		15-Jun-2020 09:20	17-Jun-2020 09:12	☐
HS20060849-04	18CPTMW10SW_061520	Groundwater		15-Jun-2020 10:10	17-Jun-2020 09:12	☐
HS20060849-05	18WW06_061520	Groundwater		15-Jun-2020 11:00	17-Jun-2020 09:12	☐
HS20060849-06	18WW02_061520	Groundwater		15-Jun-2020 11:45	17-Jun-2020 09:12	☐
HS20060849-07	AWD4_061520	Groundwater		15-Jun-2020 12:35	17-Jun-2020 09:12	☐
HS20060849-08	18WW18_061520	Groundwater		15-Jun-2020 13:30	17-Jun-2020 09:12	☐
HS20060849-09	18WW17_061520	Groundwater		15-Jun-2020 13:45	17-Jun-2020 09:12	☐
HS20060849-10	125_061520	Groundwater		15-Jun-2020 13:55	17-Jun-2020 09:12	☐
HS20060849-11	18WW16_061520	Groundwater		15-Jun-2020 14:15	17-Jun-2020 09:12	☐
HS20060849-12	Trip Blank	Water		15-Jun-2020 00:00	17-Jun-2020 09:12	☐

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS20060849

Work Order Comments

- The analysis for Perchlorate were subcontracted to ALS High Res lab Houston. TX. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 154701

Sample ID: LCSD-154701

- The RPD between the LCS and LCSD was outside of the control limit.

GCMS Volatiles by Method SW8260

Batch ID: R363974

Sample ID: 17ww08_061520(HS20060849-01MSD)

- The RPD between the MS and MSD was outside of the control limit. Naphthalene

Metals by Method SW7470

Batch ID: 154985

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

Metals by Method SW6020

Batch ID: 154644

Sample ID: 17ww08_061520 (HS20060849-01MS)

- Aluminum failed on the MS but passed on the MSD and PDS.

Sample ID: 17ww08_061520 (HS20060849-01MSD)

- 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, Calcium, Chromium, Iron, Magnesium, Manganese, Nickel, Sodium.

Sample ID: 17ww08_061520 (HS20060849-01PDS)

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 17ww08_061520
Collection Date: 15-Jun-2020 08:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-01
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	25-Jun-2020 15:05
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 15:05
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 15:05
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 15:05
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 15:05
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 15:05
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 17ww08_061520
Collection Date: 15-Jun-2020 08:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-01
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	25-Jun-2020 15:05
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 15:05
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 15:05
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 15:05
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 15:05
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 15:05
Surr: 1,2-Dichloroethane-d4	*97.7*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 15:05*
Surr: 4-Bromofluorobenzene	*94.1*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 15:05*
Surr: Dibromofluoromethane	*99.4*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 15:05*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 15:05*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 17ww08_061520
Collection Date: 15-Jun-2020 08:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**0.0420**		**0.00180**	**0**	**0.0100**	**mg/L**	1	30-Jun-2020 16:07
Antimony	**0.000444**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Arsenic	**0.00667**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Barium	**0.540**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:07
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:07
Calcium	**129**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 16:07
Chromium	**0.671**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Cobalt	**0.0144**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Copper	**0.0125**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Iron	**27.9**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:07
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 16:07
Magnesium	**83.9**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:07
Manganese	**1.47**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Nickel	**0.412**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Potassium	**2.13**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:07
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	30-Jun-2020 16:07
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:07
Sodium	**518**		**0.700**	**2.50**	**10.0**	**mg/L**	50	30-Jun-2020 17:16
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:07
Vanadium	**0.00188**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
Zinc	**0.0119**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:07
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 18:42
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW10DW_061520
Collection Date: 15-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 16:41
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 16:41
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 16:41
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 16:41
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 16:41
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW10DW_061520
Collection Date: 15-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-02
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	25-Jun-2020 16:41
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 16:41
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 16:41
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 16:41
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 16:41
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
Trichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 16:41
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 16:41
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 16:41
Surr: 1,2-Dichloroethane-d4	*94.0*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 16:41*
Surr: 4-Bromofluorobenzene	*96.3*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 16:41*
Surr: Dibromofluoromethane	*96.1*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 16:41*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 16:41*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW10DW_061520
Collection Date: 15-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0143**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	30-Jun-2020 14:57
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	30-Jun-2020 14:57
Arsenic	**0.00183**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 14:57
Barium	**0.0742**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 14:57
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 14:57
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 14:57
Calcium	**6.85**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 14:57
Chromium	**0.00294**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 14:57
Cobalt	0.000500	U	0.000100	0.000500	0.00500	mg/L	1	30-Jun-2020 14:57
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	30-Jun-2020 14:57
Iron	**0.786**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:57
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 14:57
Magnesium	**4.01**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:57
Manganese	**0.0151**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 14:57
Nickel	**0.000692**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 14:57
Potassium	**78.7**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:57
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	30-Jun-2020 14:57
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 14:57
Sodium	**168**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:57
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 14:57
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 14:57
Zinc	0.00250	U	0.00200	0.00250	0.00500	mg/L	1	30-Jun-2020 14:57
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 18:47
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW10DW_061520_a
Collection Date: 15-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-03
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	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 17:05
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 17:05
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 17:05
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 17:05
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 17:05
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW10DW_061520_a
Collection Date: 15-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-03
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	25-Jun-2020 17:05
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 17:05
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 17:05
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 17:05
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:05
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
Trichloroethene	**1.5**		**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 17:05
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:05
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:05
Surr: 1,2-Dichloroethane-d4	*85.0*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 17:05*
Surr: 4-Bromofluorobenzene	*89.6*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 17:05*
Surr: Dibromofluoromethane	*88.2*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 17:05*
Surr: Toluene-d8	*95.0*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 17:05*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW10DW_061520_a
Collection Date: 15-Jun-2020 09:20

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JHD
Aluminum	**0.0160**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	30-Jun-2020 14:59
Antimony	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	30-Jun-2020 14:59
Arsenic	**0.00183**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 14:59
Barium	**0.0750**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 14:59
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 14:59
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 14:59
Calcium	**6.91**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 14:59
Chromium	**0.00257**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 14:59
Cobalt	0.000500	U	0.000100	0.000500	0.00500	mg/L	1	30-Jun-2020 14:59
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	30-Jun-2020 14:59
Iron	**0.777**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:59
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 14:59
Magnesium	**3.86**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:59
Manganese	**0.0145**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 14:59
Nickel	**0.000657**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 14:59
Potassium	**77.8**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:59
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	30-Jun-2020 14:59
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 14:59
Sodium	**167**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 14:59
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 14:59
Vanadium	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 14:59
Zinc	0.00250	U	0.00200	0.00250	0.00500	mg/L	1	30-Jun-2020 14:59
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 18:52
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060849

Sample ID: 18CPTMW10SW_061520 Lab ID:HS20060849-04

Collection Date: 15-Jun-2020 10:10 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	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 17:29
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 17:29
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 17:29
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 17:29
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 17:29
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW10SW_061520
Collection Date: 15-Jun-2020 10:10

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-04
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	25-Jun-2020 17:29
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 17:29
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 17:29
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:29
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:29
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:29
Surr: 1,2-Dichloroethane-d4	*95.6*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 17:29*
Surr: 4-Bromofluorobenzene	*95.4*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 17:29*
Surr: Dibromofluoromethane	*97.6*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 17:29*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 17:29*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.092**		**0.010**	**0.010**	**0.010**	**ug/L**	1	01-Jul-2020 20:46
Surr: 2-Fluorobiphenyl	*43.2*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 20:46*
Surr: 4-Terphenyl-d14	*65.0*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 20:46*
Surr: Nitrobenzene-d5	*50.8*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 20:46*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW06_061520
Collection Date: 15-Jun-2020 11:00

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-05
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	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 17:53
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 17:53
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 17:53
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 17:53
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 17:53
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW06_061520
Collection Date: 15-Jun-2020 11:00

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-05
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	25-Jun-2020 17:53
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 17:53
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 17:53
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 17:53
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 17:53
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 17:53
Surr: 1,2-Dichloroethane-d4	*94.0*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 17:53*
Surr: 4-Bromofluorobenzene	*91.2*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 17:53*
Surr: Dibromofluoromethane	*94.7*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 17:53*
Surr: Toluene-d8	*99.2*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 17:53*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.087**		**0.010**	**0.010**	**0.010**	**ug/L**	1	01-Jul-2020 21:05
Surr: 2-Fluorobiphenyl	*47.4*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:05*
Surr: 4-Terphenyl-d14	*66.5*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:05*
Surr: Nitrobenzene-d5	*46.6*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:05*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW02_061520
Collection Date: 15-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-06
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	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 18:17
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 18:17
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 18:17
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 18:17
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 18:17
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW02_061520
Collection Date: 15-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-06
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	25-Jun-2020 18:17
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 18:17
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 18:17
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:17
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:17
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:17
Surr: 1,2-Dichloroethane-d4	*94.5*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 18:17*
Surr: 4-Bromofluorobenzene	*94.5*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 18:17*
Surr: Dibromofluoromethane	*96.6*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 18:17*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 18:17*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.11**		**0.010**	**0.010**	**0.010**	**ug/L**	1	01-Jul-2020 21:25
Surr: 2-Fluorobiphenyl	*40.3*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:25*
Surr: 4-Terphenyl-d14	*45.2*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:25*
Surr: Nitrobenzene-d5	*54.3*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:25*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW02_061520
Collection Date: 15-Jun-2020 11:45

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**0.294**		**0.00180**	**0**	**0.0100**	**mg/L**	1	30-Jun-2020 16:28
Antimony	**0.000570**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Arsenic	**0.000581**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Barium	**0.0397**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:28
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:28
Calcium	**6.64**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 16:28
Chromium	**0.0124**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Cobalt	**0.000331**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Copper	**0.00472**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Iron	**1.59**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:28
Lead	**0.000635**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Magnesium	**1.23**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:28
Manganese	**0.0857**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Nickel	**0.0104**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Potassium	**1.80**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:28
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	30-Jun-2020 16:28
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:28
Sodium	**24.0**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:28
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:28
Vanadium	**0.00196**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
Zinc	**0.00405**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:28
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 18:54
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD4_061520
Collection Date: 15-Jun-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-07
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	25-Jun-2020 18:41
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 18:41
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 18:41
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 18:41
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 18:41
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 18:41
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD4_061520
Collection Date: 15-Jun-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-07
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	25-Jun-2020 18:41
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 18:41
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 18:41
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 18:41
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 18:41
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 18:41
Surr: 1,2-Dichloroethane-d4	*93.6*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 18:41*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 18:41*
Surr: Dibromofluoromethane	*96.6*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 18:41*
Surr: Toluene-d8	*103*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 18:41*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Jun-2020		Analyst: ACN
1,4-Dioxane	**0.11**		**0.010**	**0.010**	**0.010**	**ug/L**	1	01-Jul-2020 21:45
Surr: 2-Fluorobiphenyl	*41.9*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:45*
Surr: 4-Terphenyl-d14	*54.6*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:45*
Surr: Nitrobenzene-d5	*40.1*			**0**	*40-140*	*%REC*	*1*	*01-Jul-2020 21:45*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: AWD4_061520
Collection Date: 15-Jun-2020 12:35

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**14.7**		**0.180**	**0**	**1.00**	**mg/L**	100	30-Jun-2020 17:22
Antimony	**0.000468**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Arsenic	**0.00281**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Barium	**0.249**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Beryllium	**0.000962**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	30-Jun-2020 16:30
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:30
Calcium	**10.1**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 16:30
Chromium	**0.509**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Cobalt	**0.0135**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Copper	**0.0214**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Iron	**18.9**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:30
Lead	**0.00778**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Magnesium	**4.68**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:30
Manganese	**0.0965**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Nickel	**0.550**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Potassium	**1.08**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:30
Selenium	**0.00290**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:30
Sodium	**53.2**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:30
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:30
Vanadium	**0.0295**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
Zinc	**0.0533**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:30
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	**0.0000490**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	29-Jun-2020 18:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060849

Sample ID: 18WW18_061520 Lab ID:HS20060849-08

Collection Date: 15-Jun-2020 13:30 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	25-Jun-2020 19:05
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 19:05
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 19:05
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 19:05
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 19:05
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 19:05
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW18_061520
Collection Date: 15-Jun-2020 13:30

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-08
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	25-Jun-2020 19:05
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 19:05
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 19:05
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:05
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:05
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:05
Surr: 1,2-Dichloroethane-d4	*94.2*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 19:05*
Surr: 4-Bromofluorobenzene	*93.8*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 19:05*
Surr: Dibromofluoromethane	*95.8*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 19:05*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 19:05*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Jun-2020		Analyst: GEY
1,4-Dioxane	0.010	U	0.010	0.010	0.010	ug/L	1	05-Jul-2020 13:24
Surr: 2-Fluorobiphenyl	*45.1*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 13:24*
Surr: 4-Terphenyl-d14	*45.9*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 13:24*
Surr: Nitrobenzene-d5	*48.0*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 13:24*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW18_061520
Collection Date: 15-Jun-2020 13:30

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**0.0280**		**0.00180**	**0**	**0.0100**	**mg/L**	1	30-Jun-2020 16:32
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	30-Jun-2020 16:32
Arsenic	**0.00437**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
Barium	**1.21**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:32
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:32
Calcium	**55.4**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 16:32
Chromium	**0.0622**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
Cobalt	**0.000192**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
Copper	**0.00123**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
Iron	**109**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:32
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 16:32
Magnesium	**34.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:32
Manganese	**2.07**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	30-Jun-2020 17:24
Nickel	**0.00590**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
Potassium	**3.42**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:32
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	30-Jun-2020 16:32
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:32
Sodium	**143**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:32
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:32
Vanadium	**0.000638**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
Zinc	**0.00363**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:32
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 18:57
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060849

Sample ID: 18WW17_061520 Lab ID:HS20060849-09

Collection Date: 15-Jun-2020 13:45 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	25-Jun-2020 19:28
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 19:28
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 19:28
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 19:28
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 19:28
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 19:28
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW17_061520
Collection Date: 15-Jun-2020 13:45

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-09
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	25-Jun-2020 19:28
cis-1,2-Dichloroethene	**0.98**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 19:28
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 19:28
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 19:28
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 19:28
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:28
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
Trichloroethene	**40**		**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 19:28
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:28
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:28
Surr: 1,2-Dichloroethane-d4	*97.9*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 19:28*
Surr: 4-Bromofluorobenzene	*92.3*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 19:28*
Surr: Dibromofluoromethane	*99.1*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 19:28*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 19:28*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW17_061520
Collection Date: 15-Jun-2020 13:45

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**0.0125**		**0.00180**	**0**	**0.0100**	**mg/L**	1	30-Jun-2020 16:34
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	30-Jun-2020 16:34
Arsenic	**0.000623**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Barium	**3.32**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	30-Jun-2020 17:26
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:34
Cadmium	**0.000346**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	30-Jun-2020 16:34
Calcium	**334**		**0.680**	**1.00**	**10.0**	**mg/L**	20	30-Jun-2020 17:26
Chromium	**0.212**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Cobalt	**0.00248**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Copper	**0.00928**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Iron	**1.07**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:34
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 16:34
Magnesium	**215**		**0.200**	**1.00**	**4.00**	**mg/L**	20	30-Jun-2020 17:26
Manganese	**0.0531**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Nickel	**0.189**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Potassium	**1.49**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:34
Selenium	**0.00395**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:34
Sodium	**1,140**		**0.280**	**1.00**	**4.00**	**mg/L**	20	30-Jun-2020 17:26
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:34
Vanadium	**0.00264**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
Zinc	**0.0278**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:34
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 18:59
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 125_061520
Collection Date: 15-Jun-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-10
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	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 21:04
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 21:04
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 21:04
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 21:04
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 21:04
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 125_061520
Collection Date: 15-Jun-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-10
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	25-Jun-2020 21:04
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 21:04
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 21:04
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 21:04
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 21:04
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 21:04
Surr: 1,2-Dichloroethane-d4	*92.2*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 21:04*
Surr: 4-Bromofluorobenzene	*95.6*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 21:04*
Surr: Dibromofluoromethane	*93.9*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 21:04*
Surr: Toluene-d8	*102*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 21:04*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 125_061520
Collection Date: 15-Jun-2020 13:55

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**0.0723**		**0.00180**	**0**	**0.0100**	**mg/L**	1	30-Jun-2020 16:38
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	30-Jun-2020 16:38
Arsenic	0.000500	U	0.000400	0.000500	0.00500	mg/L	1	30-Jun-2020 16:38
Barium	**0.0340**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:38
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:38
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:38
Calcium	**0.828**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 16:38
Chromium	**0.00364**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:38
Cobalt	0.000500	U	0.000100	0.000500	0.00500	mg/L	1	30-Jun-2020 16:38
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	30-Jun-2020 16:38
Iron	**0.0870**	J	**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:38
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 16:38
Magnesium	**0.637**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:38
Manganese	**0.00396**	J	**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:38
Nickel	**0.000998**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:38
Potassium	**0.154**	J	**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:38
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	30-Jun-2020 16:38
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:38
Sodium	**25.9**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:38
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:38
Vanadium	**0.00126**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:38
Zinc	**0.00221**	J	**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:38
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 19:01
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**

Project: LHAAP 18 24 WorkOrder:HS20060849

Sample ID: 18WW16_061520 Lab ID:HS20060849-11

Collection Date: 15-Jun-2020 14:15 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	25-Jun-2020 19:52
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 19:52
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 19:52
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 19:52
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 19:52
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 19:52
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW16_061520
Collection Date: 15-Jun-2020 14:15

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-11
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	25-Jun-2020 19:52
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 19:52
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 19:52
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 19:52
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 19:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 19:52
Surr: 1,2-Dichloroethane-d4	*98.2*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 19:52*
Surr: 4-Bromofluorobenzene	*97.6*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 19:52*
Surr: Dibromofluoromethane	*102*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 19:52*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 19:52*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW16_061520
Collection Date: 15-Jun-2020 14:15

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**0.235**		**0.00180**	**0**	**0.0100**	**mg/L**	1	30-Jun-2020 16:40
Antimony	**0.00113**	J	**0.000400**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
Arsenic	**0.00162**	J	**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
Barium	**0.119**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
Beryllium	**0.00140**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	30-Jun-2020 16:40
Cadmium	**0.00448**		**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	30-Jun-2020 16:40
Calcium	**198**		**0.680**	**1.00**	**10.0**	**mg/L**	20	30-Jun-2020 17:28
Chromium	**2.58**		**0.00800**	**0.0100**	**0.100**	**mg/L**	20	30-Jun-2020 17:28
Cobalt	**0.209**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
Copper	**0.224**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
Iron	**17.3**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:40
Lead	0.00100	U	0.000600	0.00100	0.00500	mg/L	1	30-Jun-2020 16:40
Magnesium	**147**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:40
Manganese	**2.05**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	30-Jun-2020 17:28
Nickel	**8.37**		**0.0120**	**0.0200**	**0.100**	**mg/L**	20	30-Jun-2020 17:28
Potassium	**3.88**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:40
Selenium	**0.0157**		**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:40
Sodium	**585**		**0.280**	**1.00**	**4.00**	**mg/L**	20	30-Jun-2020 17:28
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:40
Vanadium	**0.0111**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
Zinc	**0.103**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:40
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 29-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	29-Jun-2020 19:02
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 15-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-12
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	25-Jun-2020 14:17
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 14:17
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 14:17
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 14:17
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 14:17
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 14:17
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 15-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060849
Lab ID:HS20060849-12
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	25-Jun-2020 14:17
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 14:17
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 14:17
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:17
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:17
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:17
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 14:17*
Surr: 4-Bromofluorobenzene	*92.3*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 14:17*
Surr: Dibromofluoromethane	*92.2*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 14:17*
Surr: Toluene-d8	*98.0*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 14:17*

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

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

Batch ID: 154644 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060849-01		10 (mL)	10 (mL)	1
HS20060849-02		10 (mL)	10 (mL)	1
HS20060849-03		10 (mL)	10 (mL)	1
HS20060849-06		10 (mL)	10 (mL)	1
HS20060849-07		10 (mL)	10 (mL)	1
HS20060849-08		10 (mL)	10 (mL)	1
HS20060849-09		10 (mL)	10 (mL)	1
HS20060849-10		10 (mL)	10 (mL)	1
HS20060849-11		10 (mL)	10 (mL)	1

Batch ID: 154701 **Start Date:** 22 Jun 2020 08:30 **End Date:** 22 Jun 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
HS20060849-04	1	1000 (mL)	1 (mL)	0.001
HS20060849-05	1	1000 (mL)	1 (mL)	0.001
HS20060849-06	1	1000 (mL)	1 (mL)	0.001
HS20060849-07	1	1000 (mL)	1 (mL)	0.001
HS20060849-08	1	1000 (mL)	1 (mL)	0.001

Batch ID: 154985 **Start Date:** 29 Jun 2020 12:30 **End Date:** 29 Jun 2020 14:30
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060849-01		10 (mL)	10 (mL)	1
HS20060849-02		10 (mL)	10 (mL)	1
HS20060849-03		10 (mL)	10 (mL)	1
HS20060849-06		10 (mL)	10 (mL)	1
HS20060849-07		10 (mL)	10 (mL)	1
HS20060849-08		10 (mL)	10 (mL)	1
HS20060849-09		10 (mL)	10 (mL)	1
HS20060849-10		10 (mL)	10 (mL)	1
HS20060849-11		10 (mL)	10 (mL)	1

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154644 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060849-01	17ww08_061520	15 Jun 2020 08:20		19 Jun 2020 14:00	30 Jun 2020 17:16	50
HS20060849-01	17ww08_061520	15 Jun 2020 08:20		19 Jun 2020 14:00	30 Jun 2020 16:07	1
HS20060849-02	18CPTMW10DW_061520	15 Jun 2020 09:20		19 Jun 2020 14:00	30 Jun 2020 14:57	1
HS20060849-03	18CPTMW10DW_061520_a	15 Jun 2020 09:20		19 Jun 2020 14:00	30 Jun 2020 14:59	1
HS20060849-06	18WW02_061520	15 Jun 2020 11:45		19 Jun 2020 14:00	30 Jun 2020 16:28	1
HS20060849-07	AWD4_061520	15 Jun 2020 12:35		19 Jun 2020 14:00	30 Jun 2020 17:22	100
HS20060849-07	AWD4_061520	15 Jun 2020 12:35		19 Jun 2020 14:00	30 Jun 2020 16:30	1
HS20060849-08	18WW18_061520	15 Jun 2020 13:30		19 Jun 2020 14:00	30 Jun 2020 17:24	20
HS20060849-08	18WW18_061520	15 Jun 2020 13:30		19 Jun 2020 14:00	30 Jun 2020 16:32	1
HS20060849-09	18WW17_061520	15 Jun 2020 13:45		19 Jun 2020 14:00	30 Jun 2020 17:26	20
HS20060849-09	18WW17_061520	15 Jun 2020 13:45		19 Jun 2020 14:00	30 Jun 2020 16:34	1
HS20060849-10	125_061520	15 Jun 2020 13:55		19 Jun 2020 14:00	30 Jun 2020 16:38	1
HS20060849-11	18WW16_061520	15 Jun 2020 14:15		19 Jun 2020 14:00	30 Jun 2020 17:28	20
HS20060849-11	18WW16_061520	15 Jun 2020 14:15		19 Jun 2020 14:00	30 Jun 2020 16:40	1
Batch ID: 154701 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060849-04	18CPTMW10SW_061520	15 Jun 2020 10:10		22 Jun 2020 12:19	01 Jul 2020 20:46	1
HS20060849-05	18WW06_061520	15 Jun 2020 11:00		22 Jun 2020 12:19	01 Jul 2020 21:05	1
HS20060849-06	18WW02_061520	15 Jun 2020 11:45		22 Jun 2020 12:19	01 Jul 2020 21:25	1
HS20060849-07	AWD4_061520	15 Jun 2020 12:35		22 Jun 2020 12:19	01 Jul 2020 21:45	1
HS20060849-08	18WW18_061520	15 Jun 2020 13:30		22 Jun 2020 12:19	05 Jul 2020 13:24	1
Batch ID: 154985 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060849-01	17ww08_061520	15 Jun 2020 08:20		29 Jun 2020 12:30	29 Jun 2020 18:42	1
HS20060849-02	18CPTMW10DW_061520	15 Jun 2020 09:20		29 Jun 2020 12:30	29 Jun 2020 18:47	1
HS20060849-03	18CPTMW10DW_061520_a	15 Jun 2020 09:20		29 Jun 2020 12:30	29 Jun 2020 18:52	1
HS20060849-06	18WW02_061520	15 Jun 2020 11:45		29 Jun 2020 12:30	29 Jun 2020 18:54	1
HS20060849-07	AWD4_061520	15 Jun 2020 12:35		29 Jun 2020 12:30	29 Jun 2020 18:55	1
HS20060849-08	18WW18_061520	15 Jun 2020 13:30		29 Jun 2020 12:30	29 Jun 2020 18:57	1
HS20060849-09	18WW17_061520	15 Jun 2020 13:45		29 Jun 2020 12:30	29 Jun 2020 18:59	1
HS20060849-10	125_061520	15 Jun 2020 13:55		29 Jun 2020 12:30	29 Jun 2020 19:01	1
HS20060849-11	18WW16_061520	15 Jun 2020 14:15		29 Jun 2020 12:30	29 Jun 2020 19:02	1
Batch ID: R363974 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060849-12	Trip Blank	15 Jun 2020 00:00			25 Jun 2020 14:17	1

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R363974 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060849-01	17ww08_061520	15 Jun 2020 08:20			25 Jun 2020 15:05	1
HS20060849-02	18CPTMW10DW_061520	15 Jun 2020 09:20			25 Jun 2020 16:41	1
HS20060849-03	18CPTMW10DW_061520_a	15 Jun 2020 09:20			25 Jun 2020 17:05	1
HS20060849-04	18CPTMW10SW_061520	15 Jun 2020 10:10			25 Jun 2020 17:29	1
HS20060849-05	18WW06_061520	15 Jun 2020 11:00			25 Jun 2020 17:53	1
HS20060849-06	18WW02_061520	15 Jun 2020 11:45			25 Jun 2020 18:17	1
HS20060849-07	AWD4_061520	15 Jun 2020 12:35			25 Jun 2020 18:41	1
HS20060849-08	18WW18_061520	15 Jun 2020 13:30			25 Jun 2020 19:05	1
HS20060849-09	18WW17_061520	15 Jun 2020 13:45			25 Jun 2020 19:28	1
HS20060849-10	125_061520	15 Jun 2020 13:55			25 Jun 2020 21:04	1
HS20060849-11	18WW16_061520	15 Jun 2020 14:15			25 Jun 2020 19:52	1
Batch ID: R364186 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060849-01	17ww08_061520	15 Jun 2020 08:20			30 Jun 2020 10:44	1
HS20060849-02	18CPTMW10DW_061520	15 Jun 2020 09:20			30 Jun 2020 10:44	1
HS20060849-03	18CPTMW10DW_061520_a	15 Jun 2020 09:20			30 Jun 2020 10:44	1
HS20060849-04	18CPTMW10SW_061520	15 Jun 2020 10:10			30 Jun 2020 10:44	1
HS20060849-05	18WW06_061520	15 Jun 2020 11:00			30 Jun 2020 10:44	1
HS20060849-06	18WW02_061520	15 Jun 2020 11:45			30 Jun 2020 10:44	1
HS20060849-07	AWD4_061520	15 Jun 2020 12:35			30 Jun 2020 10:44	1
HS20060849-08	18WW18_061520	15 Jun 2020 13:30			30 Jun 2020 10:44	1
HS20060849-09	18WW17_061520	15 Jun 2020 13:45			30 Jun 2020 10:44	1
HS20060849-10	125_061520	15 Jun 2020 13:55			30 Jun 2020 10:44	1
HS20060849-11	18WW16_061520	15 Jun 2020 14:15			30 Jun 2020 10:44	1

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154644** Units: **mg/L** Analysis Date: **30-Jun-2020 12:35**
Client ID: Run ID: **ICPMS06_364203** SeqNo: **5644505** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.02725	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154644** Units: **mg/L** Analysis Date: **30-Jun-2020 17:16**
Client ID: Run ID: **ICPMS06_364203** SeqNo: **5645150** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09745	0.0100	0.1	0	97.4	84 - 117				
Antimony	0.04999	0.00500	0.05	0	100.0	85 - 117				
Arsenic	0.04857	0.00500	0.05	0	97.1	84 - 116				
Barium	0.05015	0.00500	0.05	0	100	86 - 114				
Beryllium	0.05405	0.00200	0.05	0	108	83 - 121				
Cadmium	0.0508	0.00200	0.05	0	102	87 - 115				
Calcium	4.5	0.500	5	0	90.0	87 - 118				
Chromium	0.04789	0.00500	0.05	0	95.8	85 - 116				
Cobalt	0.04984	0.00500	0.05	0	99.7	86 - 115				
Copper	0.05076	0.00500	0.05	0	102	85 - 118				
Iron	4.713	0.200	5	0	94.3	87 - 118				
Lead	0.04798	0.00500	0.05	0	96.0	88 - 115				
Magnesium	4.432	0.200	5	0	88.6	83 - 118				
Manganese	0.04867	0.00500	0.05	0	97.3	87 - 115				
Nickel	0.04872	0.00500	0.05	0	97.4	85 - 117				
Potassium	4.5	0.200	5	0	90.0	87 - 115				
Selenium	0.04919	0.00500	0.05	0	98.4	80 - 120				
Silver	0.05125	0.00500	0.05	0	103	85 - 116				
Sodium	4.458	0.200	5	0	89.2	85 - 117				
Thallium	0.04922	0.00200	0.05	0	98.4	82 - 116				
Vanadium	0.04694	0.00500	0.05	0	93.9	86 - 115				
Zinc	0.05127	0.00500	0.05	0	103	83 - 119				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060849-01MS** Units: **mg/L** Analysis Date: **30-Jun-2020 16:11**
Client ID: **17ww08_061520** Run ID: **ICPMS04_364260** SeqNo: **5644978** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.121	0.0100	0.1	0.04196	79.0	84 - 117				S
Antimony	0.04511	0.00500	0.05	0.000444	89.3	85 - 117				
Arsenic	0.05388	0.00500	0.05	0.006666	94.4	84 - 116				
Barium	0.596	0.00500	0.05	0.5398	112	86 - 114				O
Beryllium	0.04872	0.00200	0.05	0.000095	97.3	83 - 121				
Cadmium	0.04668	0.00200	0.05	0.000128	93.1	87 - 115				
Calcium	132.2	0.500	5	128.6	71.3	87 - 118				SO
Chromium	0.5892	0.00500	0.05	0.6712	-164	85 - 116				SO
Cobalt	0.05992	0.00500	0.05	0.01442	91.0	86 - 115				
Copper	0.05708	0.00500	0.05	0.01247	89.2	85 - 118				
Iron	32.33	0.200	5	27.85	89.5	87 - 118				O
Lead	0.04728	0.00500	0.05	0.000251	94.0	88 - 115				
Magnesium	87.75	0.200	5	83.87	77.6	83 - 118				SO
Manganese	1.508	0.00500	0.05	1.475	65.9	87 - 115				SO
Nickel	0.4505	0.00500	0.05	0.4117	77.6	85 - 117				SO
Potassium	7.137	0.200	5	2.134	100	87 - 115				
Selenium	0.04916	0.00500	0.05	0.000219	97.9	80 - 120				
Silver	0.04509	0.00500	0.05	0.000009	90.2	85 - 116				
Sodium	516.5	0.200	5	511.6	98.7	85 - 117				EO
Thallium	0.04911	0.00200	0.05	0.000027	98.2	82 - 116				
Vanadium	0.0504	0.00500	0.05	0.001881	97.0	86 - 115				
Zinc	0.05648	0.00500	0.05	0.01186	89.2	83 - 119				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060849-01MSD** Units: **mg/L** Analysis Date: **30-Jun-2020 16:13**
Client ID: **17ww08_061520** Run ID: **ICPMS04_364260** SeqNo: **5644979** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1326	0.0100	0.1	0.04196	90.6	84 - 117	0.121	9.17	20	
Antimony	0.04785	0.00500	0.05	0.000444	94.8	85 - 117	0.04511	5.9	20	
Arsenic	0.05725	0.00500	0.05	0.006666	101	84 - 116	0.05388	6.07	20	
Barium	0.6092	0.00500	0.05	0.5398	139	86 - 114	0.596	2.19	20	SO
Beryllium	0.04971	0.00200	0.05	0.000095	99.2	83 - 121	0.04872	2	20	
Cadmium	0.04794	0.00200	0.05	0.000128	95.6	87 - 115	0.04668	2.66	20	
Calcium	139	0.500	5	128.6	208	87 - 118	132.2	5.05	20	SO
Chromium	0.6918	0.00500	0.05	0.6712	41.1	85 - 116	0.5892	16	20	SO
Cobalt	0.06272	0.00500	0.05	0.01442	96.6	86 - 115	0.05992	4.57	20	
Copper	0.05993	0.00500	0.05	0.01247	94.9	85 - 118	0.05708	4.88	20	
Iron	33.79	0.200	5	27.85	119	87 - 118	32.33	4.42	20	SO
Lead	0.04949	0.00500	0.05	0.000251	98.5	88 - 115	0.04728	4.57	20	
Magnesium	91.21	0.200	5	83.87	147	83 - 118	87.75	3.87	20	SO
Manganese	1.597	0.00500	0.05	1.475	244	87 - 115	1.508	5.75	20	SO
Nickel	0.4717	0.00500	0.05	0.4117	120	85 - 117	0.4505	4.6	20	SO
Potassium	7.464	0.200	5	2.134	107	87 - 115	7.137	4.48	20	
Selenium	0.05018	0.00500	0.05	0.000219	99.9	80 - 120	0.04916	2.06	20	
Silver	0.04657	0.00500	0.05	0.000009	93.1	85 - 116	0.04509	3.23	20	
Sodium	538.1	0.200	5	511.6	530	85 - 117	516.5	4.09	20	SEO
Thallium	0.05114	0.00200	0.05	0.000027	102	82 - 116	0.04911	4.05	20	
Vanadium	0.0527	0.00500	0.05	0.001881	102	86 - 115	0.0504	4.47	20	
Zinc	0.05859	0.00500	0.05	0.01186	93.5	83 - 119	0.05648	3.66	20	

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060849-01PDS** Units: **mg/L** Analysis Date: **30-Jun-2020 16:15**
Client ID: **17ww08_061520** Run ID: **ICPMS04_364260** SeqNo: **5644980** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1329	0.0100	0.1	0.04196	90.9	80 - 120				
Antimony	0.08682	0.00500	0.1	0.000444	86.4	80 - 120				
Arsenic	0.1005	0.00500	0.1	0.006666	93.9	80 - 120				
Barium	0.6224	0.00500	0.1	0.5398	82.6	80 - 120				O
Beryllium	0.09479	0.00200	0.1	0.000095	94.7	80 - 120				
Cadmium	0.08929	0.00200	0.1	0.000128	89.2	80 - 120				
Calcium	137.8	0.500	10	128.6	91.6	80 - 120				O
Chromium	0.8376	0.00500	0.1	0.6712	166	80 - 120				SO
Cobalt	0.1031	0.00500	0.1	0.01442	88.6	80 - 120				
Copper	0.1003	0.00500	0.1	0.01247	87.8	80 - 120				
Iron	36.76	0.200	10	27.85	89.1	80 - 120				
Lead	0.09417	0.00500	0.1	0.000251	93.9	80 - 120				
Magnesium	91.41	0.200	10	83.87	75.4	80 - 120				SO
Manganese	1.558	0.00500	0.1	1.475	83.2	80 - 120				O
Nickel	0.4923	0.00500	0.1	0.4117	80.6	80 - 120				O
Potassium	11.83	0.200	10	2.134	97.0	80 - 120				
Selenium	0.09473	0.00500	0.1	0.000219	94.5	80 - 120				
Silver	0.0925	0.00500	0.1	0.000009	92.5	80 - 120				
Thallium	0.09544	0.00200	0.1	0.000027	95.4	80 - 120				
Vanadium	0.0974	0.00500	0.1	0.001881	95.5	80 - 120				
Zinc	0.1002	0.00500	0.1	0.01186	88.3	80 - 120				

PDS Sample ID: **HS20060849-01PDS** Units: **mg/L** Analysis Date: **30-Jun-2020 17:20**
Client ID: **17ww08_061520** Run ID: **ICPMS04_364260** SeqNo: **5645199** PrepDate: **19-Jun-2020** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	1048	10.0	500	518.1	106	80 - 120				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060849-01SD** Units: **mg/L** Analysis Date: **30-Jun-2020 16:09**
Client ID: **17ww08_061520** Run ID: **ICPMS04_364260** SeqNo: **5644977** PrepDate: **19-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.04692	0.0500					0.04196	0	10	J
Antimony	0.002248	0.0250					0.000444	0	10	J
Arsenic	0.006484	0.0250					0.006666	0	10	J
Barium	0.5172	0.0250					0.5398	4.19	10	
Beryllium	0.00250	0.0100					0.000095	0	10	U
Cadmium	0.00250	0.0100					0.000128	0	10	U
Calcium	124.5	2.50					128.6	3.16	10	
Chromium	0.6614	0.0250					0.6712	1.46	10	
Cobalt	0.01472	0.0250					0.01442	0	10	J
Copper	0.01369	0.0250					0.01247	0	10	J
Iron	28.13	1.00					27.85	1.01	10	
Lead	0.00500	0.0250					0.000251	0	10	U
Magnesium	82.72	1.00					83.87	1.38	10	
Manganese	1.48	0.0250					1.475	0.358	10	
Nickel	0.4248	0.0250					0.4117	3.18	10	
Potassium	2.101	1.00					2.134	1.55	10	
Selenium	0.0125	0.0250					0.000219	0	10	U
Silver	0.00250	0.0250					0.000009	0	10	U
Thallium	0.00250	0.0100					0.000027	0	10	U
Vanadium	0.00500	0.0250					0.001881	0	10	U
Zinc	0.01547	0.0250					0.01186	0	10	J

SD Sample ID: **HS20060849-01SD** Units: **mg/L** Analysis Date: **30-Jun-2020 17:18**
Client ID: **17ww08_061520** Run ID: **ICPMS04_364260** SeqNo: **5645198** PrepDate: **19-Jun-2020** DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Sodium	550.1	50.0					518.1	6.18	10	

The following samples were analyzed in this batch:

HS20060849-01	HS20060849-02	HS20060849-03	HS20060849-06
HS20060849-07	HS20060849-08	HS20060849-09	HS20060849-10
HS20060849-11			

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154985 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154985** Units: **mg/L** Analysis Date: **29-Jun-2020 18:38**
Client ID: Run ID: **HG03_364143** SeqNo: **5643458** PrepDate: **29-Jun-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-154985** Units: **mg/L** Analysis Date: **29-Jun-2020 18:40**
Client ID: Run ID: **HG03_364143** SeqNo: **5643459** PrepDate: **29-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00513	0.000200	0.005	0	103	80 - 120				

MS Sample ID: **HS20060849-01MS** Units: **mg/L** Analysis Date: **29-Jun-2020 18:44**
Client ID: **17ww08_061520** Run ID: **HG03_364143** SeqNo: **5643483** PrepDate: **29-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00520	0.000200	0.005	0	104	82 - 119				

MSD Sample ID: **HS20060849-01MSD** Units: **mg/L** Analysis Date: **29-Jun-2020 18:45**
Client ID: **17ww08_061520** Run ID: **HG03_364143** SeqNo: **5643484** PrepDate: **29-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00518	0.000200	0.005	0	104	82 - 119	0.005200	0.385	20	

The following samples were analyzed in this batch:

HS20060849-01	HS20060849-02	HS20060849-03	HS20060849-06
HS20060849-07	HS20060849-08	HS20060849-09	HS20060849-10
HS20060849-11			

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: 154701 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154701** Units: **ug/L** Analysis Date: **01-Jul-2020 19:47**
Client ID: Run ID: **SV-6_364333** SeqNo: **5648925** PrepDate: **22-Jun-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	*0.04239*	*0*	*0.08*	*0*	*53.0*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04658*	*0*	*0.08*	*0*	*58.2*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.03853*	*0*	*0.08*	*0*	*48.2*	*40 - 140*				

LCS Sample ID: **LCS-154701** Units: **ug/L** Analysis Date: **01-Jul-2020 20:07**
Client ID: Run ID: **SV-6_364333** SeqNo: **5648926** PrepDate: **22-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.05939	0.010	0.08	0	74.2	40 - 140				
Surr: 2-Fluorobiphenyl	*0.03816*	*0*	*0.08*	*0*	*47.7*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04582*	*0*	*0.08*	*0*	*57.3*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.05267*	*0*	*0.08*	*0*	*65.8*	*40 - 140*				

LCSD Sample ID: **LCSD-154701** Units: **ug/L** Analysis Date: **01-Jul-2020 20:26**
Client ID: Run ID: **SV-6_364333** SeqNo: **5648927** PrepDate: **22-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08379	0.010	0.08	0	105	40 - 140	0.05939	34.1	20	R
Surr: 2-Fluorobiphenyl	*0.04813*	*0*	*0.08*	*0*	*60.2*	*40 - 140*	*0.03816*	*23.1*	*20*	R
Surr: 4-Terphenyl-d14	*0.03781*	*0*	*0.08*	*0*	*47.3*	*40 - 140*	*0.04582*	*19.2*	*20*	
Surr: Nitrobenzene-d5	*0.0622*	*0*	*0.08*	*0*	*77.8*	*40 - 140*	*0.05267*	*16.6*	*20*	

The following samples were analyzed in this batch: HS20060849-04 HS20060849-05 HS20060849-06 HS20060849-07 HS20060849-08

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:54**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637176** 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: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:54**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637176** 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	*43.85*	*1.0*	*50*	*0*	*87.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.42*	*1.0*	*50*	*0*	*88.8*	*85 - 114*				
Surr: Dibromofluoromethane	*44.44*	*1.0*	*50*	*0*	*88.9*	*80 - 119*				
Surr: Toluene-d8	*48.03*	*1.0*	*50*	*0*	*96.1*	*89 - 112*				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:06**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637175** 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	21.14	1.0	20	0	106	74 - 131				
1,1,2,2-Tetrachloroethane	20.49	1.0	20	0	102	71 - 121				
1,1,2-Trichloroethane	20.61	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	20.69	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	21.09	1.0	20	0	105	71 - 131				
1,1-Dichloropropene	19.82	1.0	20	0	99.1	78 - 125				
1,2,3-Trichlorobenzene	24.8	1.0	20	0	124	69 - 129				
1,2,3-Trichloropropane	19.19	1.0	20	0	96.0	73 - 122				
1,2,4-Trichlorobenzene	23.88	1.0	20	0	119	69 - 130				
1,2,4-Trimethylbenzene	20.31	1.0	20	0	102	76 - 124				
1,2-Dibromo-3-chloropropane	18.35	1.0	20	0	91.7	62 - 128				
1,2-Dibromoethane	20.49	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.33	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.81	1.0	20	0	104	73 - 128				
1,2-Dichloropropane	21.48	1.0	20	0	107	78 - 122				
1,3,5-Trimethylbenzene	20.95	1.0	20	0	105	75 - 124				
1,3-Dichlorobenzene	20.59	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	20.15	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	19.8	1.0	20	0	99.0	79 - 118				
2,2-Dichloropropane	21.25	1.0	20	0	106	60 - 139				
2-Butanone	37.81	2.0	40	0	94.5	56 - 143				
2-Chlorotoluene	19.69	1.0	20	0	98.4	79 - 122				
2-Hexanone	39.32	2.0	40	0	98.3	57 - 139				
4-Chlorotoluene	19.95	1.0	20	0	99.7	78 - 122				
4-Isopropyltoluene	20.49	1.0	20	0	102	77 - 127				
4-Methyl-2-pentanone	38.41	2.0	40	0	96.0	67 - 130				
Acetone	44.25	2.0	40	0	111	39 - 160				
Benzene	20.92	1.0	20	0	105	79 - 120				
Bromobenzene	20.15	1.0	20	0	101	80 - 120				
Bromochloromethane	19.73	1.0	20	0	98.7	78 - 123				
Bromodichloromethane	21.24	1.0	20	0	106	79 - 125				
Bromoform	19.92	1.0	20	0	99.6	66 - 130				
Bromomethane	20.82	1.0	20	0	104	53 - 141				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:06**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637175** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.38	2.0	40	0	106	64 - 133				
Carbon tetrachloride	19.95	1.0	20	0	99.7	72 - 136				
Chlorobenzene	20.28	1.0	20	0	101	82 - 118				
Chloroethane	22.04	1.0	20	0	110	60 - 138				
Chloroform	21.25	1.0	20	0	106	79 - 124				
Chloromethane	20.47	1.0	20	0	102	50 - 139				
cis-1,2-Dichloroethene	21.53	1.0	20	0	108	78 - 123				
cis-1,3-Dichloropropene	21.26	1.0	20	0	106	75 - 124				
Dibromochloromethane	20.12	1.0	20	0	101	74 - 126				
Dibromomethane	20.34	1.0	20	0	102	79 - 123				
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	32 - 152				
Ethylbenzene	20.21	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	26.32	1.0	20	0	132	66 - 134				
Isopropylbenzene	20.33	1.0	20	0	102	72 - 131				
m,p-Xylene	40.45	2.0	40	0	101	80 - 121				
Methylene chloride	20.24	2.0	20	0	101	74 - 124				
Naphthalene	21.84	1.0	20	0	109	61 - 128				
n-Butylbenzene	21.01	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.45	1.0	20	0	102	76 - 126				
o-Xylene	20.08	1.0	20	0	100	78 - 122				
sec-Butylbenzene	20.58	1.0	20	0	103	77 - 126				
Styrene	20.34	1.0	20	0	102	78 - 123				
tert-Butylbenzene	20.62	1.0	20	0	103	78 - 124				
Tetrachloroethene	20.22	1.0	20	0	101	74 - 129				
Toluene	20.34	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	22.07	1.0	20	0	110	75 - 124				
trans-1,3-Dichloropropene	20.97	1.0	20	0	105	73 - 127				
Trichloroethene	20.75	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	21.46	1.0	20	0	107	65 - 141				
Vinyl chloride	19.92	1.0	20	0	99.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.87*	*1.0*	*50*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.57*	*1.0*	*50*	*0*	*93.1*	*85 - 114*				
Surr: Dibromofluoromethane	*51.34*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*47.53*	*1.0*	*50*	*0*	*95.1*	*89 - 112*				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060849-01MS** Units: **UG/L** Analysis Date: **25-Jun-2020 15:29**
Client ID: **17ww08_061520** Run ID: **VOA6_363974** SeqNo: **5637180** 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	20.1	1.0	20	0	100	78 - 124				
1,1,1-Trichloroethane	20.36	1.0	20	0	102	74 - 131				
1,1,2,2-Tetrachloroethane	19.92	1.0	20	0	99.6	71 - 121				
1,1,2-Trichloroethane	19.56	1.0	20	0	97.8	80 - 119				
1,1-Dichloroethane	18.76	1.0	20	0	93.8	77 - 125				
1,1-Dichloroethene	20.02	1.0	20	0	100	71 - 131				
1,1-Dichloropropene	20.34	1.0	20	0	102	78 - 125				
1,2,3-Trichlorobenzene	15.15	1.0	20	0	75.8	69 - 129				
1,2,3-Trichloropropane	18.93	1.0	20	0	94.7	73 - 122				
1,2,4-Trichlorobenzene	15.3	1.0	20	0	76.5	69 - 130				
1,2,4-Trimethylbenzene	21.27	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	18.51	1.0	20	0	92.6	62 - 128				
1,2-Dibromoethane	19.8	1.0	20	0	99.0	77 - 121				
1,2-Dichlorobenzene	20.5	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	19.46	1.0	20	0	97.3	73 - 128				
1,2-Dichloropropane	20.31	1.0	20	0	102	78 - 122				
1,3,5-Trimethylbenzene	21.67	1.0	20	0	108	75 - 124				
1,3-Dichlorobenzene	20.43	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	19.36	1.0	20	0	96.8	80 - 119				
1,4-Dichlorobenzene	20.7	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	19.8	1.0	20	0	99.0	60 - 139				
2-Butanone	32.48	2.0	40	0	81.2	56 - 143				
2-Chlorotoluene	20.43	1.0	20	0	102	79 - 122				
2-Hexanone	38.45	2.0	40	0	96.1	57 - 139				
4-Chlorotoluene	20.97	1.0	20	0	105	78 - 122				
4-Isopropyltoluene	22.2	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	38.43	2.0	40	0	96.1	67 - 130				
Acetone	31.7	2.0	40	0	79.2	39 - 160				
Benzene	20.31	1.0	20	0	102	79 - 120				
Bromobenzene	20.62	1.0	20	0	103	80 - 120				
Bromochloromethane	17.79	1.0	20	0	88.9	78 - 123				
Bromodichloromethane	19.92	1.0	20	0	99.6	79 - 125				
Bromoform	19.55	1.0	20	0	97.8	66 - 130				
Bromomethane	17.9	1.0	20	0	89.5	53 - 141				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS20060849-01MS** Units: **UG/L** Analysis Date: **25-Jun-2020 15:29**
Client ID: **17ww08_061520** Run ID: **VOA6_363974** SeqNo: **5637180** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.16	2.0	40	0	97.9	64 - 133				
Carbon tetrachloride	20.54	1.0	20	0	103	72 - 136				
Chlorobenzene	19.96	1.0	20	0	99.8	82 - 118				
Chloroethane	19.09	1.0	20	0	95.4	60 - 138				
Chloroform	18.95	1.0	20	0	94.7	79 - 124				
Chloromethane	15.77	1.0	20	0	78.8	50 - 139				
cis-1,2-Dichloroethene	19.27	1.0	20	0	96.3	78 - 123				
cis-1,3-Dichloropropene	20.08	1.0	20	0	100	75 - 124				
Dibromochloromethane	19.16	1.0	20	0	95.8	74 - 126				
Dibromomethane	19.57	1.0	20	0	97.8	79 - 123				
Dichlorodifluoromethane	14.08	1.0	20	0	70.4	32 - 152				
Ethylbenzene	20.78	1.0	20	0	104	79 - 121				
Hexachlorobutadiene	18.84	1.0	20	0	94.2	66 - 134				
Isopropylbenzene	21.51	1.0	20	0	108	72 - 131				
m,p-Xylene	42.08	2.0	40	0	105	80 - 121				
Methylene chloride	17.38	2.0	20	0	86.9	74 - 124				
Naphthalene	15.4	1.0	20	0	77.0	61 - 128				
n-Butylbenzene	22.02	1.0	20	0	110	75 - 128				
n-Propylbenzene	22.16	1.0	20	0	111	76 - 126				
o-Xylene	20.49	1.0	20	0	102	78 - 122				
sec-Butylbenzene	22.28	1.0	20	0	111	77 - 126				
Styrene	20.08	1.0	20	0	100	78 - 123				
tert-Butylbenzene	21.97	1.0	20	0	110	78 - 124				
Tetrachloroethene	21.59	1.0	20	0	108	74 - 129				
Toluene	20.73	1.0	20	0	104	80 - 121				
trans-1,2-Dichloroethene	20.42	1.0	20	0	102	75 - 124				
trans-1,3-Dichloropropene	19.57	1.0	20	0	97.9	73 - 127				
Trichloroethene	20.71	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	20.53	1.0	20	0	103	65 - 141				
Vinyl chloride	17.65	1.0	20	0	88.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.29*	*1.0*	*50*	*0*	*92.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.88*	*1.0*	*50*	*0*	*93.8*	*85 - 114*				
Surr: Dibromofluoromethane	*45.86*	*1.0*	*50*	*0*	*91.7*	*80 - 119*				
Surr: Toluene-d8	*49.57*	*1.0*	*50*	*0*	*99.1*	*89 - 112*				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060849-01MSD** Units: **UG/L** Analysis Date: **25-Jun-2020 15:53**
Client ID: **17ww08_061520** Run ID: **VOA6_363974** SeqNo: **5637181** 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	19.85	1.0	20	0	99.2	78 - 124	20.1	1.25	20	
1,1,1-Trichloroethane	19.82	1.0	20	0	99.1	74 - 131	20.36	2.69	20	
1,1,2,2-Tetrachloroethane	20.26	1.0	20	0	101	71 - 121	19.92	1.67	20	
1,1,2-Trichloroethane	19.62	1.0	20	0	98.1	80 - 119	19.56	0.312	20	
1,1-Dichloroethane	17.89	1.0	20	0	89.4	77 - 125	18.76	4.75	20	
1,1-Dichloroethene	19.91	1.0	20	0	99.5	71 - 131	20.02	0.558	20	
1,1-Dichloropropene	20.5	1.0	20	0	103	78 - 125	20.34	0.786	20	
1,2,3-Trichlorobenzene	18.02	1.0	20	0	90.1	69 - 129	15.15	17.3	20	
1,2,3-Trichloropropane	18.77	1.0	20	0	93.8	73 - 122	18.93	0.874	20	
1,2,4-Trichlorobenzene	18.51	1.0	20	0	92.5	69 - 130	15.3	19	20	
1,2,4-Trimethylbenzene	21.64	1.0	20	0	108	76 - 124	21.27	1.77	20	
1,2-Dibromo-3-chloropropane	18.27	1.0	20	0	91.3	62 - 128	18.51	1.33	20	
1,2-Dibromoethane	19.45	1.0	20	0	97.2	77 - 121	19.8	1.81	20	
1,2-Dichlorobenzene	20.76	1.0	20	0	104	80 - 119	20.5	1.26	20	
1,2-Dichloroethane	19.07	1.0	20	0	95.4	73 - 128	19.46	1.99	20	
1,2-Dichloropropane	19.85	1.0	20	0	99.2	78 - 122	20.31	2.32	20	
1,3,5-Trimethylbenzene	22.39	1.0	20	0	112	75 - 124	21.67	3.25	20	
1,3-Dichlorobenzene	20.84	1.0	20	0	104	80 - 119	20.43	2.02	20	
1,3-Dichloropropane	19.47	1.0	20	0	97.3	80 - 119	19.36	0.562	20	
1,4-Dichlorobenzene	20.7	1.0	20	0	103	79 - 118	20.7	0.00374	20	
2,2-Dichloropropane	19.38	1.0	20	0	96.9	60 - 139	19.8	2.14	20	
2-Butanone	30.88	2.0	40	0	77.2	56 - 143	32.48	5.06	20	
2-Chlorotoluene	21.23	1.0	20	0	106	79 - 122	20.43	3.86	20	
2-Hexanone	38.3	2.0	40	0	95.7	57 - 139	38.45	0.413	20	
4-Chlorotoluene	21.06	1.0	20	0	105	78 - 122	20.97	0.449	20	
4-Isopropyltoluene	23.42	1.0	20	0	117	77 - 127	22.2	5.36	20	
4-Methyl-2-pentanone	38.25	2.0	40	0	95.6	67 - 130	38.43	0.479	20	
Acetone	30.49	2.0	40	0	76.2	39 - 160	31.7	3.89	20	
Benzene	19.76	1.0	20	0	98.8	79 - 120	20.31	2.71	20	
Bromobenzene	19.65	1.0	20	0	98.2	80 - 120	20.62	4.83	20	
Bromochloromethane	17.01	1.0	20	0	85.0	78 - 123	17.79	4.48	20	
Bromodichloromethane	19.12	1.0	20	0	95.6	79 - 125	19.92	4.12	20	
Bromoform	19.53	1.0	20	0	97.7	66 - 130	19.55	0.0937	20	
Bromomethane	17.22	1.0	20	0	86.1	53 - 141	17.9	3.87	20	

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS20060849-01MSD** Units: **UG/L** Analysis Date: **25-Jun-2020 15:53**
Client ID: **17ww08_061520** Run ID: **VOA6_363974** SeqNo: **5637181** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.83	2.0	40	0	94.6	64 - 133	39.16	3.45	20	
Carbon tetrachloride	20.65	1.0	20	0	103	72 - 136	20.54	0.522	20	
Chlorobenzene	19.88	1.0	20	0	99.4	82 - 118	19.96	0.385	20	
Chloroethane	18.34	1.0	20	0	91.7	60 - 138	19.09	4.02	20	
Chloroform	18.25	1.0	20	0	91.3	79 - 124	18.95	3.72	20	
Chloromethane	15.01	1.0	20	0	75.0	50 - 139	15.77	4.94	20	
cis-1,2-Dichloroethene	18.5	1.0	20	0	92.5	78 - 123	19.27	4.08	20	
cis-1,3-Dichloropropene	19.1	1.0	20	0	95.5	75 - 124	20.08	5.01	20	
Dibromochloromethane	19.09	1.0	20	0	95.4	74 - 126	19.16	0.398	20	
Dibromomethane	18.86	1.0	20	0	94.3	79 - 123	19.57	3.67	20	
Dichlorodifluoromethane	14.21	1.0	20	0	71.0	32 - 152	14.08	0.865	20	
Ethylbenzene	21.24	1.0	20	0	106	79 - 121	20.78	2.19	20	
Hexachlorobutadiene	19.24	1.0	20	0	96.2	66 - 134	18.84	2.08	20	
Isopropylbenzene	22.35	1.0	20	0	112	72 - 131	21.51	3.85	20	
m,p-Xylene	42.77	2.0	40	0	107	80 - 121	42.08	1.62	20	
Methylene chloride	16.49	2.0	20	0	82.4	74 - 124	17.38	5.26	20	
Naphthalene	18.88	1.0	20	0	94.4	61 - 128	15.4	20.3	20	R
n-Butylbenzene	23.43	1.0	20	0	117	75 - 128	22.02	6.23	20	
n-Propylbenzene	22.89	1.0	20	0	114	76 - 126	22.16	3.22	20	
o-Xylene	20.97	1.0	20	0	105	78 - 122	20.49	2.32	20	
sec-Butylbenzene	23.65	1.0	20	0	118	77 - 126	22.28	5.96	20	
Styrene	20.08	1.0	20	0	100	78 - 123	20.08	0.0111	20	
tert-Butylbenzene	22.85	1.0	20	0	114	78 - 124	21.97	3.93	20	
Tetrachloroethene	22.18	1.0	20	0	111	74 - 129	21.59	2.71	20	
Toluene	20.7	1.0	20	0	104	80 - 121	20.73	0.111	20	
trans-1,2-Dichloroethene	19.34	1.0	20	0	96.7	75 - 124	20.42	5.41	20	
trans-1,3-Dichloropropene	19.02	1.0	20	0	95.1	73 - 127	19.57	2.85	20	
Trichloroethene	20.59	1.0	20	0	103	79 - 123	20.71	0.584	20	
Trichlorofluoromethane	20.08	1.0	20	0	100	65 - 141	20.53	2.18	20	
Vinyl chloride	17.04	1.0	20	0	85.2	58 - 137	17.65	3.47	20	
Surr: 1,2-Dichloroethane-d4	*44.05*	*1.0*	*50*	*0*	*88.1*	*81 - 118*	*46.29*	*4.96*	*20*	
Surr: 4-Bromofluorobenzene	*47.26*	*1.0*	*50*	*0*	*94.5*	*85 - 114*	*46.88*	*0.794*	*20*	
Surr: Dibromofluoromethane	*44.6*	*1.0*	*50*	*0*	*89.2*	*80 - 119*	*45.86*	*2.79*	*20*	
Surr: Toluene-d8	*50.24*	*1.0*	*50*	*0*	*100*	*89 - 112*	*49.57*	*1.34*	*20*	

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060849

QC BATCH REPORT

Batch ID: R363974 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS20060849-01	HS20060849-02	HS20060849-03	HS20060849-04
HS20060849-05	HS20060849-06	HS20060849-07	HS20060849-08
HS20060849-09	HS20060849-10	HS20060849-11	HS20060849-12

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060849**

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
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: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060849

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060849-01	17ww08_061520	Login	6/17/2020 6:03:26 PM	NDR	MET018
HS20060849-01	17ww08_061520	Login	6/17/2020 6:03:26 PM	NDR	Sub
HS20060849-01	17ww08_061520	Login	6/17/2020 6:03:26 PM	NDR	EXT190
HS20060849-01	17ww08_061520	Login	6/17/2020 6:03:26 PM	NDR	VOA101

ALS Houston, US Date: 06-Jul-20

Sample Receipt Checklist

Work Order ID: HS20060849 **Date/Time Received:** 17-Jun-2020 09:12

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

Completed By: /S/ Nilesh D. Ranchod 17-Jun-2020 18:21 **Reviewed by:** /S/ RJ Modashia 17-Jun-2020 22:37

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 ☐	2 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):	0.9°C UC/C	IR25
Cooler(s)/Kit(s):	43348	
Date/Time sample(s) sent to storage:	06/17/2020 19:00	

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:

bhate

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

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Sample Analysis Requested (5) | Quality Assurance Samples (6)

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	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot	Trip Blank Lot Control	Cooler ID
17WW08_061520	15 Jun 2020	0820	-	N		WG	5	X	X	X					
17WW08_061520_MS	15 Jun 2020	0820	-	MS		WG	5	X	X	X					
17WW08_061520_MSD	15 Jun 2020	0820	-	SD		WG	5	X	X	X					
18CPTMW10DW_061520	15 Jun 2020	0920		N		WG	5	X	X	X					
18CPTMW10DW_061520_a	15 Jun 2020	0920		FD		WG	5	X	X	X					
18CPTMW10SW_061520	15 Jun 2020	1010	-	N		WG	5	X	X		X				
18WW06_061520	15 Jun 2020	1100	-	N		WG	5	X	X		X				
18WW02_061520	15 Jun 2020	1145	-	N		WG	6	X	X	X	X				
AWD4_061520	15 Jun 2020	1235	-	N		WG	6	X	X	X	X				
18WW18_061520	15 Jun 2020	1330	-	N		WG	6	X	X	X	X				
18WW17_061520	15 Jun 2020	1345	-	N		WG	5	X	X	X					

COMMENTS:

Bhate Environmental Associates, Inc.
LHAAP 18 24
HS20060849

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/16/20	1430	1. [signature]	6/17/2020	09:12.
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 10150 Sunscliff 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 10109401 in the Equipment Blank Lot Control

VOC.
43348 0.90 + 25 CIF 0.50

bhate

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

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Field Sample ID (50 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	1, 4 - DIOXANE							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)			
125_061520	15-Jun-2020	1355	-	N		WG	5	X	X	X											
18WW16_061520	15-Jun-2020	1415	-	N		WG	5	X	X	X											
TRIP BLANK	15-Jun-2020		-	TB		W	2	X													
			-																		
			-																		
			-																		
			-																		
			-																		
			-																		
			-																		
			-																		

HS20060849

Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS: ____

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/16/20	1430	1.	6/17/2020	09:12
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 Stanfiff 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 (-s) 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

43348 WIC 0.9° 11.2.5 Cf-Gun

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

43348

CUSTODY SEAL

Date: 6/16/20 Time: 1430
Name: Scott Beesinger
Company: Bhate

Seal Broken By: SM
Date: 06/17/20

43348 JUN 17 2020

Must ... ext Business Day
T... npature Sensitive!

43348

ORIGIN ID:[illegible] (903) 930-6193
SCOTT BEESINGER
BHATE ENVIRONMENTAL ASSOCIATES
1200 E.FORT GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 18MAY20
ACTWGT: 1.00 LB MAN
CAD: 300130/CAFE3211
DIMS: 26x14x14 IN

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP-16/24-RJ-BD 71831

RMA:

FedEx Express

E

FedEx.
TRK# 0221 1251 0297 2039

WED - 17 JUN 10:30A
PRIORITY OVERNIGHT

77099
TX-US
IAH

AB SGRA

F10 - 162785 16JUN20 GGGA 568C1/CM0/ASA2

June 30, 2020 Service Request No:E2000562

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

Laboratory Results for: HS20060849

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 19, 2020
For your reference, these analyses have been assigned our service request number **E2000562.**

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.:**	E2000562
Project:	HS20060849	**Date Received:**	06/19/20
Sample Matrix:	Water		

CASE NARRATIVE

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

Sample Receipt

Eleven samples were received for analysis at ALS Environmental in Houston on 06/19/20.

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:

EQ2000251: 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, LCSD, MS, & MSD 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.

Client: ALS Environmental - US **Service Request:**E2000562
Project: HS20060849

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000562-001	17WW08_061520	6/15/2020	0820
E2000562-002	18CPTMW10DW_061520	6/15/2020	0920
E2000562-003	18CPTMW10DW_061520_a	6/15/2020	0920
E2000562-004	18CPTMW10SW_061520	6/15/2020	1010
E2000562-005	18WW06_061520	6/15/2020	1100
E2000562-006	18WW02_061520	6/15/2020	1145
E2000562-007	AWD4_061520	6/15/2020	1235
E2000562-008	18WW18_061520	6/15/2020	1330
E2000562-009	18WW17_061520	6/15/2020	1345
E2000562-010	125_061520	6/15/2020	1355
E2000562-011	18WW16_061520	6/15/2020	1415

Service Request Summary

Folder #: **E2000562**
Client Name: ALS Environmental - US
Project Name: HS20060849
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: 06/19/20
Internal Due Date: 7/1/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060849
EDD: No EDD Specified

13 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000562-001	17WW08_061520	Ground Water	06/15/20 0820	**IV**
E2000562-002	18CPTMW10DW_061520	Ground Water	06/15/20 0920	**IV**
E2000562-003	18CPTMW10DW_061520_a	Ground Water	06/15/20 0920	**IV**
E2000562-004	18CPTMW10SW_061520	Ground Water	06/15/20 1010	**IV**
E2000562-005	18WW06_061520	Ground Water	06/15/20 1100	**IV**
E2000562-006	18WW02_061520	Ground Water	06/15/20 1145	**IV**
E2000562-007	AWD4_061520	Ground Water	06/15/20 1235	**IV**
E2000562-008	18WW18_061520	Ground Water	06/15/20 1330	**IV**
E2000562-009	18WW17_061520	Ground Water	06/15/20 1345	**IV**
E2000562-010	125_061520	Ground Water	06/15/20 1355	**IV**
E2000562-011	18WW16_061520	Ground Water	06/15/20 1415	**IV**

Service Request Summary

Folder #: **E2000562**
Client Name: ALS Environmental - US
Project Name: HS20060849
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: 06/19/20
Internal Due Date: 7/1/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060849
EDD: No EDD Specified

13 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD Level IV due 7/8,level II 7/1
Semivoa GCMS	ClO4 DOD/6850	10	Level IV due 7/8,level II 7/1

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
Florida Department of Health	E87611	6/30/2020
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 Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
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

E2000562 5

ALS Laboratory Group
HS20060849

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:** 14145

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:	HS20060849
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060849-01**	**17ww08_061520**	**Groundwater**	**15 Jun 2020 08:20**
	SUB_Perch-6850			01 Jul 2020
2.	**HS20060849-02**	**18CPTMW10DW_061520**	**Groundwater**	**15 Jun 2020 09:20**
	SUB_Perch-6850			01 Jul 2020
3.	**HS20060849-03**	**18CPTMW10DW_061520_a**	**Groundwater**	**15 Jun 2020 09:20**
	SUB_Perch-6850			01 Jul 2020
4.	**HS20060849-04**	**18CPTMW10SW_061520**	**Groundwater**	**15 Jun 2020 10:10**
	SUB_Perch-6850			01 Jul 2020
5.	**HS20060849-05**	**18WW06_061520**	**Groundwater**	**15 Jun 2020 11:00**
	SUB_Perch-6850			01 Jul 2020
6.	**HS20060849-06**	**18WW02_061520**	**Groundwater**	**15 Jun 2020 11:45**
	SUB_Perch-6850			01 Jul 2020
7.	**HS20060849-07**	**AWD4_061520**	**Groundwater**	**15 Jun 2020 12:35**
	SUB_Perch-6850			01 Jul 2020
8.	**HS20060849-08**	**18WW18_061520**	**Groundwater**	**15 Jun 2020 13:30**
	SUB_Perch-6850			01 Jul 2020
9.	**HS20060849-09**	**18WW17_061520**	**Groundwater**	**15 Jun 2020 13:45**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14145**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
		SUB_Perch-6850		01 Jul 2020
10.	**HS20060849-10**	**125_061520**	**Groundwater**	**15 Jun 2020 13:55**
		SUB_Perch-6850		01 Jul 2020
11.	**HS20060849-11**	**18WW16_061520**	**Groundwater**	**15 Jun 2020 14:15**
		SUB_Perch-6850		01 Jul 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: _____

Received By: COREY G Date/Time: 6/19/2020 1062

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

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID 1811

Date/Time Received: 6/19/20 Initials: CH Date/Time Logged in: 6/19/20 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?
-		6/19/20	1000	CH	1.7	☐
						☐
						☐
						☐

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: E2000562 5
ALS Laboratory Group
HS20060849

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#: 360389 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/19/20 15:44

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000562-001	17WW08_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000562-002	18CPTMW10DW_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000562-003	18CPTMW10DW_061520_a	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000562-004	18CPTMW10SW_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000562-005	18WW06_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000562-006	18WW02_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000562-007	AWD4_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000562-008	18WW18_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000562-009	18WW17_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000562-010	125_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000562-011	18WW16_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000563-001	MW19_061620	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000563-002	18CPTMW15_061620	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000563-003	18CPTMW16_061720	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000564-001	LH18/24-SP650_061620_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
16	EQ2000251-01	MB		6850/ClO4 DOD			Liquid	10mL	
17	EQ2000251-02	LCS		6850/ClO4 DOD			Liquid	10mL	
18	EQ2000251-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000251-04	17WW08_061520 MS	.01	6850/ClO4 DOD			Liquid	10mL	
20	EQ2000251-05	17WW08_061520 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

E2000562-001	100.00µL	E2000562-002	100.00µL	E2000562-003	100.00µL	E2000562-004	100.00µL	E2000562-005	100.00µL	E2000562-006	100.00µL
E2000562-007	100.00µL	E2000562-008	100.00µL	E2000562-009	100.00µL	E2000562-010	100.00µL	E2000562-011	100.00µL	E2000563-001	100.00µL
E2000563-002	100.00µL	E2000563-003	100.00µL	E2000564-001	100.00µL	EQ2000251-01	100.00µL	EQ2000251-02	100.00µL	EQ2000251-03	100.00µL
EQ2000251-04	100.00µL	EQ2000251-05	100.00µL								

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

EQ2000251-02	1.00µL	EQ2000251-03	1.00µL	EQ2000251-04	1.00µL	EQ2000251-05	1.00µL

Preparation Information Benchsheet

Prep Run#: 360389
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/19/20 15:44

Preparation Steps

Step: Preparation
Started: 6/19/20 15:44
Finished: 6/19/20 17:00
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
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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 0820
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	17WW08_061520	**Units:**	µg/L
Lab Code:	E2000562-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0450**	J	0.100	0.0500	0.0250	1	6/19/20	6/27/20 15:07	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 0920
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18CPTMW10DW_061520	**Units:**	µg/L
Lab Code:	E2000562-002	**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	**12.8**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 15:15	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 0920
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18CPTMW10DW_061520_a	**Units:**	µg/L
Lab Code:	E2000562-003	**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	**12.6**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 15:31	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1010
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18CPTMW10SW_061520	**Units:**	µg/L
Lab Code:	E2000562-004	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/27/20 15:38	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1100
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18WW06_061520	**Units:**	µg/L
Lab Code:	E2000562-005	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/27/20 15:46	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1145
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18WW02_061520	**Units:**	µg/L
Lab Code:	E2000562-006	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/27/20 15:54	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1235
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	AWD4_061520	**Units:**	µg/L
Lab Code:	E2000562-007	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/27/20 16:02	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1330
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18WW18_061520	**Units:**	µg/L
Lab Code:	E2000562-008	**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	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/27/20 16:10	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1345
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18WW17_061520	**Units:**	µg/L
Lab Code:	E2000562-009	**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	**763000**		2000	1000	500	20000	6/19/20	6/29/20 14:07	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1355
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	125_061520	**Units:**	µg/L
Lab Code:	E2000562-010	**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	**380**		1.00	0.500	0.250	10	6/19/20	6/29/20 11:08	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 1415
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18WW16_061520	**Units:**	µg/L
Lab Code:	E2000562-011	**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	**5.32**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 16:34	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000251-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/27/20 14:27	360389	685428	

Accuracy & Precision

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www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/29/20
Sample Matrix:	Ground Water		

Lab Control Sample Summary

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	360389

	Lab Control Sample EQ2000251-02			Duplicate Lab Control Sample EQ2000251-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.108	0.100	108	0.0932	0.100	93	84 - 119	15	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:**	E2000562
Project:	HS20060849	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000251-02	**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	**0.108**		0.100	0.0500	0.0250	1	6/19/20	6/29/20 10:44	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000251-03	**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	**0.0932**	J	0.100	0.0500	0.0250	1	6/19/20	6/29/20 10:52	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
		Date Analyzed:	6/27/20

Matrix Spike Summary

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

Sample Name:	17WW08_061520	**Units:**	µg/L
Lab Code:	E2000562-001	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		17WW08_061520MS				17WW08_061520DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2000251-04				EQ2000251-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0450	0.159	0.100	114	0.157	0.100	112	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:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 0820
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	17WW08_061520	**Units:**	µg/L
Lab Code:	EQ2000251-04	**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	**0.159**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 14:51	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Collected:**	6/15/20 0820
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	17WW08_061520	**Units:**	µg/L
Lab Code:	EQ2000251-05	**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	**0.157**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 14:59	360389	685428	

Initial Calibration

ALS Environmental - Houston HRMS
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20200625

1st Review: Kneir
2nd Review: Hvan

ALS Environmental

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

ALS Group Houston

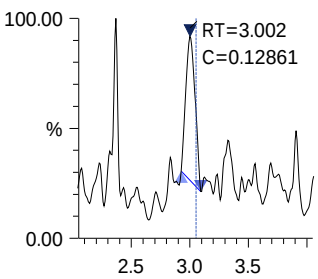
PERCHLORATE1

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

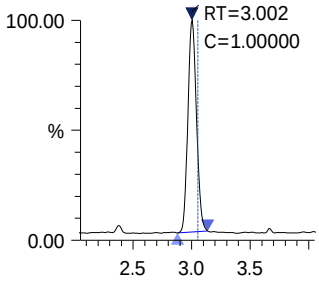
Perchlorate

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

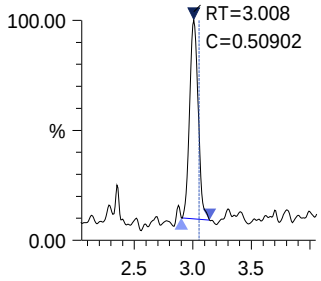
PERCHLORATE2

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

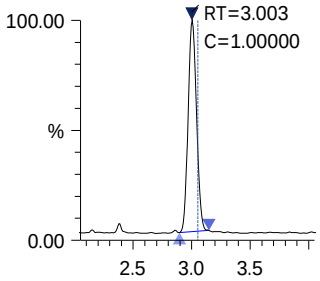
Perchlorate

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

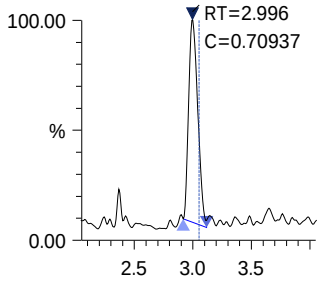
PERCHLORATE3

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

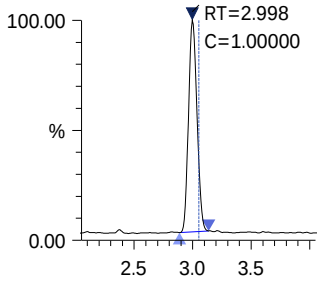
Perchlorate

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

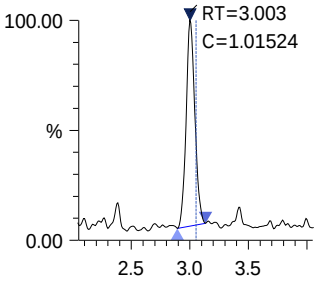
PERCHLORATE4

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

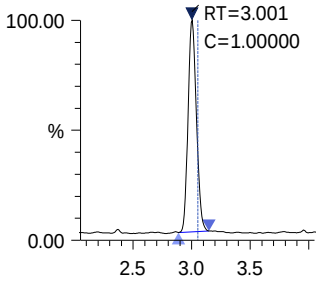
Perchlorate

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



ALS Group Houston

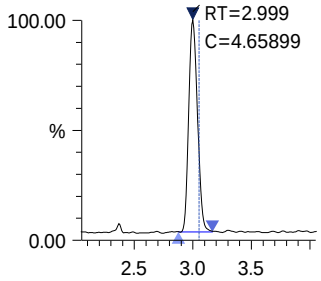
PERCHLORATE5

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

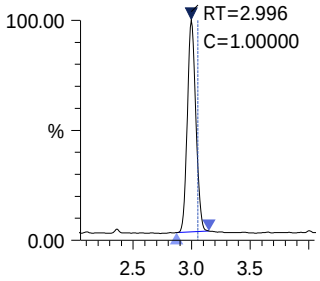
Perchlorate

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



ALS Group Houston

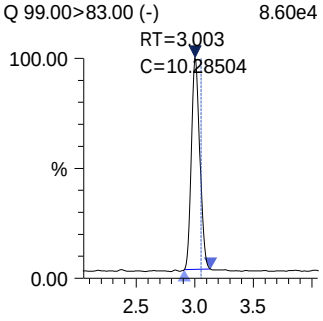
PERCHLORATE6

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

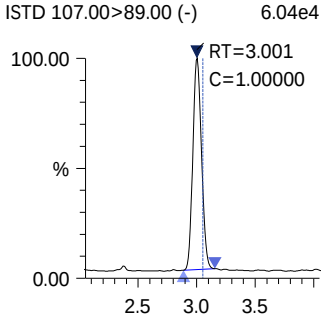
Perchlorate

Conc 10.28504
Area 427451



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 309038



ALS Group Houston

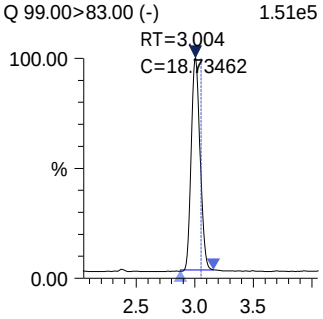
PERCHLORATE7

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

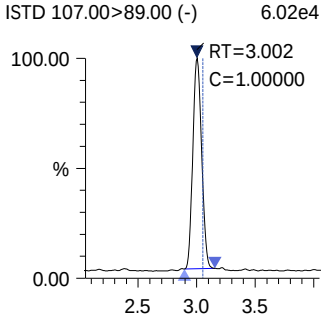
Perchlorate

Conc 18.73462
Area 786893



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 312322



ALS Group Houston

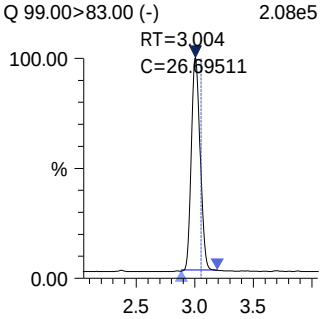
PERCHLORATE8

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

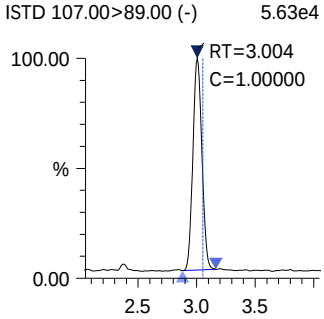
Perchlorate

Conc 26.69511
Area 1075993



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 299716



ALS Group Houston

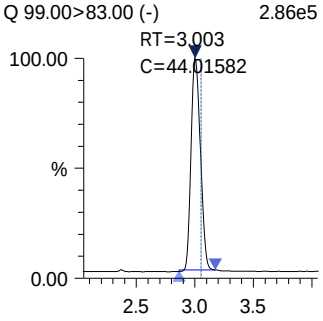
PERCHLORATE9

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

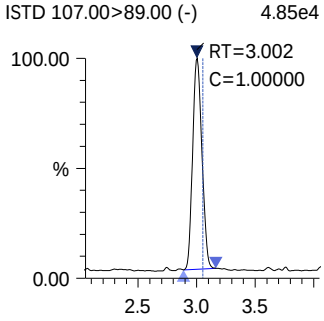
Perchlorate

Conc 44.01582
Area 1567374



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 264786



ALS Group Houston

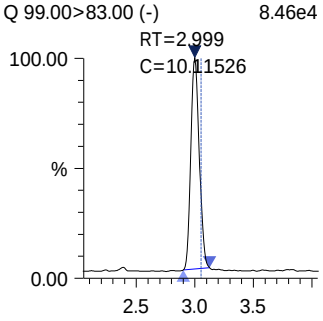
PERCHLORATEICV

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

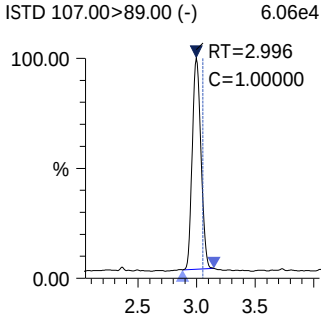
Perchlorate

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

20200627

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
1	IB		20200627_001	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:30
2	IB		20200627_002	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:38
3	IB		20200627_003	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:46
4	LODV		20200627_004	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:54
5	ICS		20200627_005	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:02
6	PERCHLORATE7		20200627_006	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 11:09
7	E2000539-007X50		20200627_007	Perchlorate6850b.lcm	50x	☒		6/27/2020 11:17
8	E2000536-004X100		20200627_008	Perchlorate6850b.lcm	100x	☒	do not use	6/27/2020 11:25
9	E2000541-005		20200627_009	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:33
10	E2000541-010		20200627_010	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:41
11	E2000536-004X200		20200627_011	Perchlorate6850b.lcm	200x	☒		6/27/2020 11:50
12	E2000541-011		20200627_012	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:58
13	E2000541-013		20200627_013	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:05
14	E2000541-014		20200627_014	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:13
15	PERCHLORATE7		20200627_015	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 12:21
16	EQ2000245-01		20200627_016	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:30
17	EQ2000245-02		20200627_017	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:37
18	EQ2000245-03		20200627_018	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:45
19	E2000542-001		20200627_019	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:53
20	E2000542-002		20200627_020	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:01
21	E2000542-003		20200627_021	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:09
22	E2000542-004		20200627_022	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:17
23	E2000542-005		20200627_023	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:25
24	E2000542-006		20200627_024	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:33
25	E2000542-007		20200627_025	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:41
26	PERCHLORATE7		20200627_026	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 13:49
27	E2000542-008		20200627_027	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:04
28	E2000542-009		20200627_028	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:12
29	E2000542-010		20200627_029	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:19
30	EQ2000251-01		20200627_030	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:27
31	EQ2000251-02		20200627_031	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:35
32	EQ2000251-03		20200627_032	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:43
33	EQ2000251-04		20200627_033	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:51
34	EQ2000251-05		20200627_034	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:59
35	E2000562-001		20200627_035	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:07
36	E2000562-002		20200627_036	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:15
37	PERCHLORATE7		20200627_037	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 15:23
38	E2000562-003		20200627_038	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:31
39	E2000562-004		20200627_039	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:38
40	E2000562-005		20200627_040	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:46
41	E2000562-006		20200627_041	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:54
42	E2000562-007		20200627_042	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:02
43	E2000562-008		20200627_043	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:10
44	E2000562-009		20200627_044	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:18
45	E2000562-010		20200627_045	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:26
46	E2000562-011		20200627_046	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:34
47	E2000563-001		20200627_047	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:41
48	PERCHLORATE7		20200627_048	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 16:49
49	E2000563-002		20200627_049	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:57
50	E2000563-003		20200627_050	Perchlorate6850b.lcm	1x	☒		6/27/2020 17:05
51	E2000564-001		20200627_051	Perchlorate6850b.lcm	1x	☒		6/27/2020 17:13
52	E2000541-017X1000		20200627_052	Perchlorate6850b.lcm	1000x	☒		6/27/2020 17:21
54	E2000541-018X1000		20200627_053	Perchlorate6850b.lcm	1000x	☒		6/27/2020 17:29
55	E2000541-019X1000		20200627_054	Perchlorate6850b.lcm	1000x	☒		6/27/2020 17:37

20200627

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
56	E2000539-004X50000		20200627_055	Perchlorate6850b.lcm	50000x	☒		6/27/2020 17:45
57	E2000539-005X100000		20200627_056	Perchlorate6850b.lcm	100000x	☒		6/27/2020 17:53
58	PERCHLORATE7		20200627_057	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 18:01
59	EQ2000245-01		20200627_058	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:08
60	EQ2000245-02		20200627_059	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:16
61	EQ2000245-03		20200627_060	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:24
62	E2000542-006		20200627_061	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:32
63	E2000542-007		20200627_062	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:40
64	PERCHLORATE7		20200627_065	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 18:48

20200629

1st Review: Kneir
2nd Review: Hvan

ALS Environmental

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
1	null		20200629_001	Perchlorate6850b.lcm	1x	☒		6/29/2020 8:43
2	null		20200629_002	Perchlorate6850b.lcm	1x	☒		6/29/2020 8:48
3	IB		20200629_003	Perchlorate6850b.lcm	1x	☒		6/29/2020 8:54
4	IB		20200629_004	Perchlorate6850b.lcm	1x	☒		6/29/2020 9:01
5	LODV		20200629_005	Perchlorate6850b.lcm	1x	☒		6/29/2020 9:09
6	ICS		20200629_006	Perchlorate6850b.lcm	1x	☒		6/29/2020 9:17
7	PERCHLORATE7		20200629_007	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 10:05
8	EQ2000245-01		20200629_008	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:13
9	EQ2000245-02		20200629_009	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:21
10	EQ2000245-03		20200629_010	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:29
11	EQ2000251-01		20200629_011	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:37
12	EQ2000251-02		20200629_012	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:44
13	EQ2000251-03		20200629_013	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:52
14	E2000562-009		20200629_014	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:00
15	E2000562-010X10		20200629_015	Perchlorate6850b.lcm	10x	☒		6/29/2020 11:08
16	EQ2000245-02		20200629_016	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:17
17	EQ2000245-03		20200629_017	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:25
18	PERCHLORATE7		20200629_018	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 11:33
19	E2000563-002X10		20200629_019	Perchlorate6850b.lcm	10x	☒		6/29/2020 11:41
20	E2000563-003		20200629_020	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:48
21	E2000562-009		20200629_021	Perchlorate6850b.lcm	1x	☒		6/29/2020 13:10
22	E2000542-004X100		20200629_022	Perchlorate6850b.lcm	100x	☒		6/29/2020 13:18
23	E2000542-005X100		20200629_023	Perchlorate6850b.lcm	100x	☒		6/29/2020 13:26
24	E2000562-009X10000		20200629_024	Perchlorate6850b.lcm	10000x	☒		6/29/2020 13:53
25	E2000562-009X20000		20200629_025	Perchlorate6850b.lcm	20000x	☒		6/29/2020 14:07
26	IB		20200629_026	Perchlorate6850b.lcm	1x	☒		6/29/2020 14:15
27	E2000512-011confirmation		20200629_027	Perchlorate6850b.lcm	1x	☒	confirmation only	6/29/2020 14:24
28	PERCHLORATE7		20200629_028	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 14:32
29	EQ2000245-02		20200629_029	Perchlorate6850b.lcm	1x	☒		6/29/2020 14:40
30	EQ2000245-03		20200629_030	Perchlorate6850b.lcm	1x	☒		6/29/2020 14:48
31	PERCHLORATE7		20200629_031	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 14:56

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/27/20

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\20200627\20200627_026	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.2	0.1345	0.1388	3.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/27/20

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\20200627\20200627_037	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.89	0.1345	0.1343	-0.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/27/20

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\20200627\20200627_048	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.2	0.1345	0.1384	2.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/27/20

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\20200627\20200627_057	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.80	0.1345	0.1331	-1.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/29/20

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\20200629\20200629_007	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.35	0.1345	0.1270	-5.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/29/20

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\20200629\20200629_018	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.70	0.1345	0.1316	-2.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**Date Analyzed:**	6/29/20

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\20200629\20200629_028	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.62	0.1345	0.1294	-3.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000562
Project:	HS20060849	**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
17WW08_061520MS	EQ2000251-04	192,307	2.91
17WW08_061520DMS	EQ2000251-05	179,413	2.90
17WW08_061520	E2000562-001	179,480	2.91
18CPTMW10DW_061520	E2000562-002	188,564	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:**	E2000562
Project:	HS20060849	**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
18CPTMW10DW_061520_a	E2000562-003	194,410	2.93
18CPTMW10SW_061520	E2000562-004	260,758	2.93
18WW06_061520	E2000562-005	265,135	2.94
18WW02_061520	E2000562-006	258,696	2.93
AWD4_061520	E2000562-007	280,542	2.94
18WW18_061520	E2000562-008	233,949	2.92
18WW16_061520	E2000562-011	176,587	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:**	E2000562
Project:	HS20060849	**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:**	E2000562
Project:	HS20060849	**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:**	E2000562
Project:	HS20060849	**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
125_061520	E2000562-010	258,238	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:**	E2000562
Project:	HS20060849	**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
18WW17_061520	E2000562-009	244,151	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:**	E2000562
Project:	HS20060849	**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

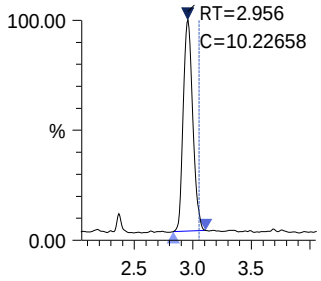
Date acquired: 6/27/2020 1:49:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_026.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

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

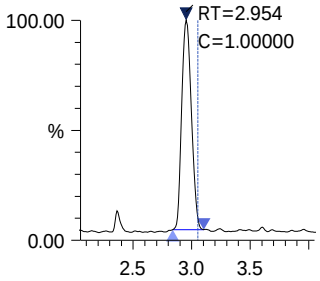
Q 99.00>83.00 (-) 5.95e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 242980

ISTD 107.00>89.00 (-) 4.36e4



ALS Group Houston

EQ2000251-01

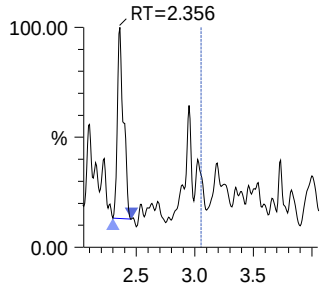
Date acquired: 6/27/2020 2:27:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_030.lcd
Vial: 32 | Inj. Volume: 25.0000uL | Tray: 1

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 ----

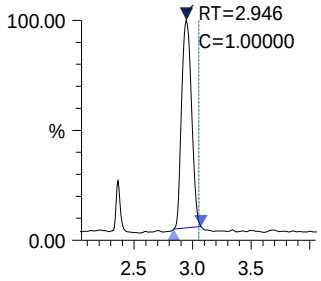
Q 99.00>83.00 (-) 2.82e3



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

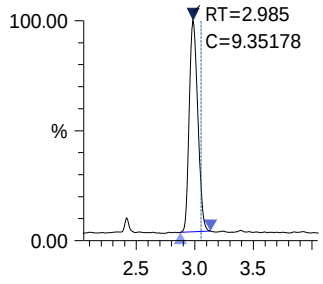
PERCHLORATE7

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

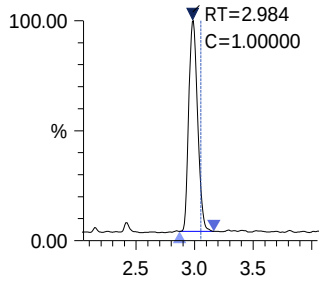
Perchlorate

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

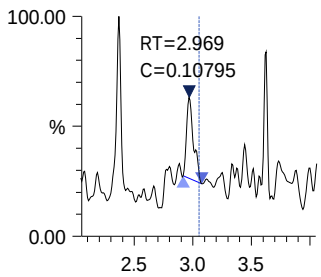
EQ2000251-02

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

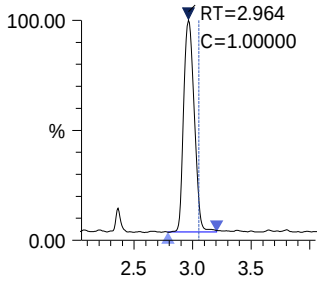
Perchlorate

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

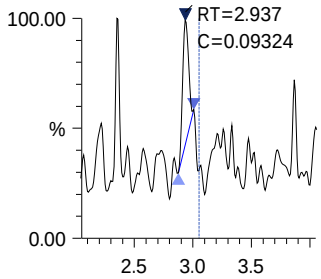
EQ2000251-03

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

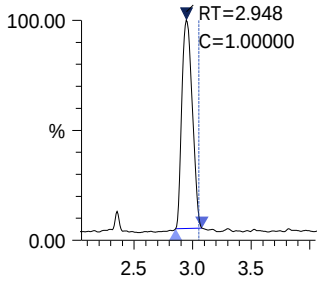
Perchlorate

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

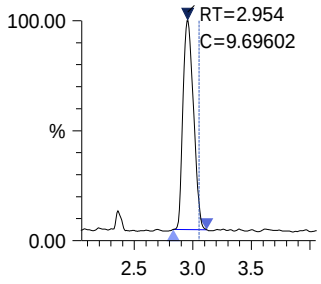
PERCHLORATE7

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

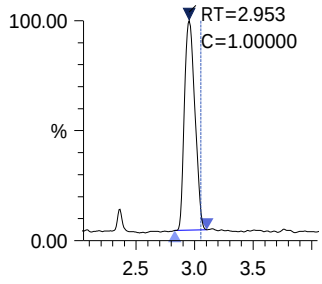
Perchlorate

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

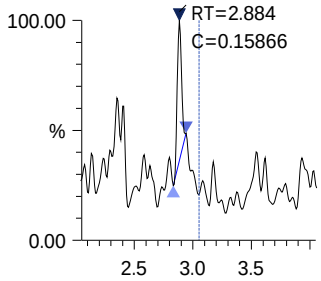
Name	Sample ID	Acquired Date	Area	Conc.	Data Filename	Found RT	Inj Vol	ISTD Amount	Vial
Perchlorate	EQ2000251-04	6/27/2020 2:51:33 PM	4142	0.15866	20200627_033	2.884	25.0000	1.0000	35
Sodium Perchlorate-18O4_IS	EQ2000251-04	6/27/2020 2:51:33 PM	192307	1.00000	20200627_033	2.905	25.0000	1.0000	35

Perchlorate

Conc 0.15866

Area 4142

Q 99.00>83.00 (-) 2.57e3

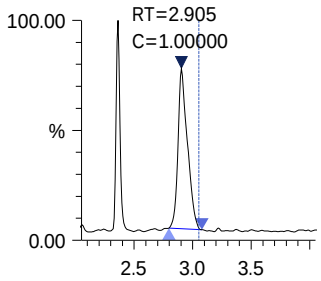


Sodium Perchlorate-18O4_IS

Conc 1.00000

Area 192307

ISTD 107.00>89.00 (-) 4.58e4



ALS Group Houston

EQ2000251-05

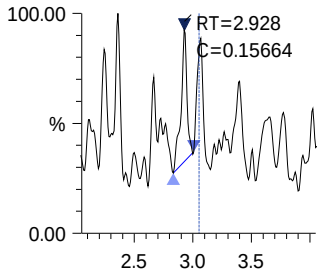
Date acquired: 6/27/2020 2:59:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20200627\20200627_034.lcd
Vial: 36 | Inj. Volume: 25.0000uL | Tray: 1

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

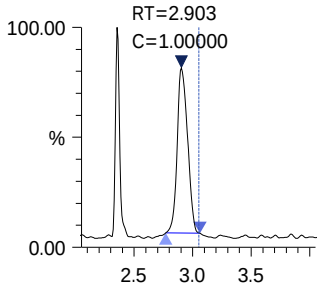
Q 99.00>83.00 (-) 1.75e3



Sodium Perchlorate-18O4 _IS

Conc 1.00000
Area 179413

ISTD 107.00>89.00 (-) 3.75e4



ALS Group Houston

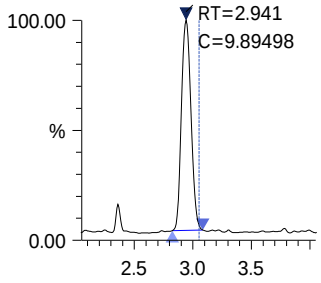
PERCHLORATE7

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

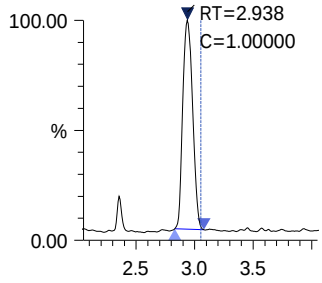
Perchlorate

Conc 9.89498
Area 324365
Q 99.00>83.00 (-) 5.74e4



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 241448
ISTD 107.00>89.00 (-) 4.23e4



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

July 06, 2020

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

Work Order: **HS20060898**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 4 sample(s) on Jun 18, 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: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060898

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS20060898-01	MW19_061620	Groundwater		16-Jun-2020 09:35	18-Jun-2020 08:55	☐
HS20060898-02	18CPTMW15_061620	Groundwater		16-Jun-2020 10:50	18-Jun-2020 08:55	☐
HS20060898-03	18CPTMW16_061720	Groundwater		17-Jun-2020 10:55	18-Jun-2020 08:55	☐
HS20060898-04	Trip Blank	Water	CG 032420 -137	17-Jun-2020 00:00	18-Jun-2020 08:55	☐

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060898

CASE NARRATIVE

Work Order Comments

- The analysis for Perchlorate was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 154701

Sample ID: LCSD-154701

- The RPD between the LCS and LCSD was outside of the control limit.

GCMS Volatiles by Method SW8260

Batch ID: R363974

Sample ID: HS20060849-01MS)

- MS and MSD are for an unrelated sample

Metals by Method SW7470

Batch ID: 154667

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

Metals by Method SW6020

Batch ID: 154644

Sample ID: HS20060849-01MS

- MS/MSD and DUPs are for an unrelated sample

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW19_061620
Collection Date: 16-Jun-2020 09:35

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-01
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	25-Jun-2020 20:16
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,2-Dichloroethane	**0.52**	J	**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 20:16
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 20:16
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 20:16
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 20:16
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 20:16
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 20:16
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW19_061620
Collection Date: 16-Jun-2020 09:35

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-01
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	25-Jun-2020 20:16
cis-1,2-Dichloroethene	**3.7**		**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 20:16
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 20:16
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 20:16
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 20:16
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:16
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
Trichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 20:16
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:16
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:16
Surr: 1,2-Dichloroethane-d4	*95.3*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 20:16*
Surr: 4-Bromofluorobenzene	*96.0*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 20:16*
Surr: Dibromofluoromethane	*95.6*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 20:16*
Surr: Toluene-d8	*101*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 20:16*

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW19_061620
Collection Date: 16-Jun-2020 09:35

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 19-Jun-2020		Analyst: JC
Aluminum	**0.731**		**0.00180**	**0**	**0.0100**	**mg/L**	1	30-Jun-2020 16:42
Antimony	0.00100	U	0.000400	0.00100	0.00500	mg/L	1	30-Jun-2020 16:42
Arsenic	**0.00601**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Barium	**0.547**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:42
Cadmium	**0.000316**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	30-Jun-2020 16:42
Calcium	**126**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	30-Jun-2020 16:42
Chromium	**0.0358**		**0.000400**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Cobalt	**0.00846**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Copper	**0.00362**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Iron	**94.6**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:42
Lead	**0.000683**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Magnesium	**71.3**		**0.0100**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:42
Manganese	**2.66**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	30-Jun-2020 17:05
Nickel	**0.0465**		**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Potassium	**4.79**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	30-Jun-2020 16:42
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	30-Jun-2020 16:42
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	30-Jun-2020 16:42
Sodium	**1,030**		**0.280**	**1.00**	**4.00**	**mg/L**	20	30-Jun-2020 17:05
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	30-Jun-2020 16:42
Vanadium	**0.00204**	J	**0.000600**	**0.00100**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
Zinc	**0.00900**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	30-Jun-2020 16:42
MERCURY BY SW7470A		**Method:SW7470**				Prep:SW7470 / 19-Jun-2020		Analyst: FO
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	19-Jun-2020 16:08
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW15_061620
Collection Date: 16-Jun-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-02
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	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 20:40
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 20:40
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 20:40
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 20:40
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 20:40
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW15_061620
Collection Date: 16-Jun-2020 10:50

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-02
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	25-Jun-2020 20:40
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 20:40
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 20:40
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 20:40
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 20:40
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
Trichloroethene	**2.4**		**0.20**	**0.50**	**1.0**	**UG/L**	1	25-Jun-2020 20:40
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 20:40
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 20:40
Surr: 1,2-Dichloroethane-d4	*95.1*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 20:40*
Surr: 4-Bromofluorobenzene	*94.0*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 20:40*
Surr: Dibromofluoromethane	*96.6*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 20:40*
Surr: Toluene-d8	*100*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 20:40*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Jun-2020		Analyst: GEY
1,4-Dioxane	**0.090**		**0.010**	**0.010**	**0.010**	**ug/L**	1	05-Jul-2020 14:02
Surr: 2-Fluorobiphenyl	*47.0*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 14:02*
Surr: 4-Terphenyl-d14	*57.9*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 14:02*
Surr: Nitrobenzene-d5	*42.7*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 14:02*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW16_061720
Collection Date: 17-Jun-2020 10:55

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Jun-2020		Analyst: GEY
1,4-Dioxane	**0.080**		**0.010**	**0.010**	**0.010**	**ug/L**	1	05-Jul-2020 14:21
Surr: 2-Fluorobiphenyl	*56.4*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 14:21*
Surr: 4-Terphenyl-d14	*48.0*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 14:21*
Surr: Nitrobenzene-d5	*43.3*			**0**	*40-140*	*%REC*	*1*	*05-Jul-2020 14:21*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: GR
Subcontract Analysis	See Attached		0	0		NA	1	30-Jun-2020 10:44

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 17-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
2-Butanone	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 14:41
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
2-Hexanone	2.0	U	1.0	2.0	2.0	UG/L	1	25-Jun-2020 14:41
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
4-Methyl-2-pentanone	2.0	U	0.70	2.0	2.0	UG/L	1	25-Jun-2020 14:41
Acetone	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 14:41
Benzene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Bromobenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Bromochloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Bromodichloromethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Bromoform	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Bromomethane	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Carbon disulfide	1.0	U	0.60	1.0	2.0	UG/L	1	25-Jun-2020 14:41
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Chlorobenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Chloroethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Chloroform	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41

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

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 17-Jun-2020 00:00

ANALYTICAL REPORT
WorkOrder:HS20060898
Lab ID:HS20060898-04
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	25-Jun-2020 14:41
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Dibromochloromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Dibromomethane	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Ethylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Isopropylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
m,p-Xylene	1.0	U	0.50	1.0	2.0	UG/L	1	25-Jun-2020 14:41
Methylene chloride	1.0	U	0.40	1.0	2.0	UG/L	1	25-Jun-2020 14:41
n-Butylbenzene	1.0	U	0.40	1.0	1.0	UG/L	1	25-Jun-2020 14:41
n-Propylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Naphthalene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
o-Xylene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Styrene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Tetrachloroethene	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Toluene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Trichloroethene	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	UG/L	1	25-Jun-2020 14:41
Vinyl chloride	0.50	U	0.20	0.50	1.0	UG/L	1	25-Jun-2020 14:41
Surr: 1,2-Dichloroethane-d4	*91.0*			**0**	*81-118*	*%REC*	*1*	*25-Jun-2020 14:41*
Surr: 4-Bromofluorobenzene	*88.6*			**0**	*85-114*	*%REC*	*1*	*25-Jun-2020 14:41*
Surr: Dibromofluoromethane	*92.4*			**0**	*80-119*	*%REC*	*1*	*25-Jun-2020 14:41*
Surr: Toluene-d8	*95.5*			**0**	*89-112*	*%REC*	*1*	*25-Jun-2020 14:41*

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

ALS Houston, US Date: 06-Jul-20

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

Batch ID: 154644 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060898-01		10 (mL)	10 (mL)	1

Batch ID: 154667 **Start Date:** 19 Jun 2020 10:00 **End Date:** 19 Jun 2020 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS20060898-01		10 (mL)	10 (mL)	1

Batch ID: 154701 **Start Date:** 22 Jun 2020 08:30 **End Date:** 22 Jun 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
HS20060898-02	1	1000 (mL)	1 (mL)	0.001
HS20060898-03	1	1000 (mL)	1 (mL)	0.001

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 154644 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS20060898-01	MW19_061620	16 Jun 2020 09:35		19 Jun 2020 14:00	30 Jun 2020 17:05	20
HS20060898-01	MW19_061620	16 Jun 2020 09:35		19 Jun 2020 14:00	30 Jun 2020 16:42	1
Batch ID: 154667 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS20060898-01	MW19_061620	16 Jun 2020 09:35		19 Jun 2020 10:00	19 Jun 2020 16:08	1
Batch ID: 154701 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS20060898-02	18CPTMW15_061620	16 Jun 2020 10:50		22 Jun 2020 12:19	05 Jul 2020 14:02	1
HS20060898-03	18CPTMW16_061720	17 Jun 2020 10:55		22 Jun 2020 12:19	05 Jul 2020 14:21	1
Batch ID: R363974 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS20060898-04	Trip Blank	17 Jun 2020 00:00			25 Jun 2020 14:41	1
Batch ID: R363974 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS20060898-01	MW19_061620	16 Jun 2020 09:35			25 Jun 2020 20:16	1
HS20060898-02	18CPTMW15_061620	16 Jun 2020 10:50			25 Jun 2020 20:40	1
Batch ID: R364186 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS20060898-01	MW19_061620	16 Jun 2020 09:35			30 Jun 2020 10:44	1
HS20060898-02	18CPTMW15_061620	16 Jun 2020 10:50			30 Jun 2020 10:44	1
HS20060898-03	18CPTMW16_061720	17 Jun 2020 10:55			30 Jun 2020 10:44	1

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-154644** Units: **mg/L** Analysis Date: **30-Jun-2020 12:35**
Client ID: Run ID: **ICPMS06_364203** SeqNo: **5644505** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
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
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00100	0.00500								U
Magnesium	0.0500	0.200								U
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	0.02725	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00100	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-154644** Units: **mg/L** Analysis Date: **30-Jun-2020 17:16**
Client ID: Run ID: **ICPMS06_364203** SeqNo: **5645150** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.09745	0.0100	0.1	0	97.4	84 - 117				
Antimony	0.04999	0.00500	0.05	0	100.0	85 - 117				
Arsenic	0.04857	0.00500	0.05	0	97.1	84 - 116				
Barium	0.05015	0.00500	0.05	0	100	86 - 114				
Beryllium	0.05405	0.00200	0.05	0	108	83 - 121				
Cadmium	0.0508	0.00200	0.05	0	102	87 - 115				
Calcium	4.5	0.500	5	0	90.0	87 - 118				
Chromium	0.04789	0.00500	0.05	0	95.8	85 - 116				
Cobalt	0.04984	0.00500	0.05	0	99.7	86 - 115				
Copper	0.05076	0.00500	0.05	0	102	85 - 118				
Iron	4.713	0.200	5	0	94.3	87 - 118				
Lead	0.04798	0.00500	0.05	0	96.0	88 - 115				
Magnesium	4.432	0.200	5	0	88.6	83 - 118				
Manganese	0.04867	0.00500	0.05	0	97.3	87 - 115				
Nickel	0.04872	0.00500	0.05	0	97.4	85 - 117				
Potassium	4.5	0.200	5	0	90.0	87 - 115				
Selenium	0.04919	0.00500	0.05	0	98.4	80 - 120				
Silver	0.05125	0.00500	0.05	0	103	85 - 116				
Sodium	4.458	0.200	5	0	89.2	85 - 117				
Thallium	0.04922	0.00200	0.05	0	98.4	82 - 116				
Vanadium	0.04694	0.00500	0.05	0	93.9	86 - 115				
Zinc	0.05127	0.00500	0.05	0	103	83 - 119				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS20060849-01MS** Units: **mg/L** Analysis Date: **30-Jun-2020 16:11**
Client ID: Run ID: **ICPMS04_364260** SeqNo: **5644978** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.121	0.0100	0.1	0.04196	79.0	84 - 117				S
Antimony	0.04511	0.00500	0.05	0.000444	89.3	85 - 117				
Arsenic	0.05388	0.00500	0.05	0.006666	94.4	84 - 116				
Barium	0.596	0.00500	0.05	0.5398	112	86 - 114				O
Beryllium	0.04872	0.00200	0.05	0.000095	97.3	83 - 121				
Cadmium	0.04668	0.00200	0.05	0.000128	93.1	87 - 115				
Calcium	132.2	0.500	5	128.6	71.3	87 - 118				SO
Chromium	0.5892	0.00500	0.05	0.6712	-164	85 - 116				SO
Cobalt	0.05992	0.00500	0.05	0.01442	91.0	86 - 115				
Copper	0.05708	0.00500	0.05	0.01247	89.2	85 - 118				
Iron	32.33	0.200	5	27.85	89.5	87 - 118				O
Lead	0.04728	0.00500	0.05	0.000251	94.0	88 - 115				
Magnesium	87.75	0.200	5	83.87	77.6	83 - 118				SO
Manganese	1.508	0.00500	0.05	1.475	65.9	87 - 115				SO
Nickel	0.4505	0.00500	0.05	0.4117	77.6	85 - 117				SO
Potassium	7.137	0.200	5	2.134	100	87 - 115				
Selenium	0.04916	0.00500	0.05	0.000219	97.9	80 - 120				
Silver	0.04509	0.00500	0.05	0.000009	90.2	85 - 116				
Sodium	516.5	0.200	5	511.6	98.7	85 - 117				EO
Thallium	0.04911	0.00200	0.05	0.000027	98.2	82 - 116				
Vanadium	0.0504	0.00500	0.05	0.001881	97.0	86 - 115				
Zinc	0.05648	0.00500	0.05	0.01186	89.2	83 - 119				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS20060849-01MSD** Units: **mg/L** Analysis Date: **30-Jun-2020 16:13**
Client ID: Run ID: **ICPMS04_364260** SeqNo: **5644979** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1326	0.0100	0.1	0.04196	90.6	84 - 117	0.121	9.17	20	
Antimony	0.04785	0.00500	0.05	0.000444	94.8	85 - 117	0.04511	5.9	20	
Arsenic	0.05725	0.00500	0.05	0.006666	101	84 - 116	0.05388	6.07	20	
Barium	0.6092	0.00500	0.05	0.5398	139	86 - 114	0.596	2.19	20	SO
Beryllium	0.04971	0.00200	0.05	0.000095	99.2	83 - 121	0.04872	2	20	
Cadmium	0.04794	0.00200	0.05	0.000128	95.6	87 - 115	0.04668	2.66	20	
Calcium	139	0.500	5	128.6	208	87 - 118	132.2	5.05	20	SO
Chromium	0.6918	0.00500	0.05	0.6712	41.1	85 - 116	0.5892	16	20	SO
Cobalt	0.06272	0.00500	0.05	0.01442	96.6	86 - 115	0.05992	4.57	20	
Copper	0.05993	0.00500	0.05	0.01247	94.9	85 - 118	0.05708	4.88	20	
Iron	33.79	0.200	5	27.85	119	87 - 118	32.33	4.42	20	SO
Lead	0.04949	0.00500	0.05	0.000251	98.5	88 - 115	0.04728	4.57	20	
Magnesium	91.21	0.200	5	83.87	147	83 - 118	87.75	3.87	20	SO
Manganese	1.597	0.00500	0.05	1.475	244	87 - 115	1.508	5.75	20	SO
Nickel	0.4717	0.00500	0.05	0.4117	120	85 - 117	0.4505	4.6	20	SO
Potassium	7.464	0.200	5	2.134	107	87 - 115	7.137	4.48	20	
Selenium	0.05018	0.00500	0.05	0.000219	99.9	80 - 120	0.04916	2.06	20	
Silver	0.04657	0.00500	0.05	0.000009	93.1	85 - 116	0.04509	3.23	20	
Sodium	538.1	0.200	5	511.6	530	85 - 117	516.5	4.09	20	SEO
Thallium	0.05114	0.00200	0.05	0.000027	102	82 - 116	0.04911	4.05	20	
Vanadium	0.0527	0.00500	0.05	0.001881	102	86 - 115	0.0504	4.47	20	
Zinc	0.05859	0.00500	0.05	0.01186	93.5	83 - 119	0.05648	3.66	20	

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS20060849-01PDS** Units: **mg/L** Analysis Date: **30-Jun-2020 16:15**
Client ID: Run ID: **ICPMS04_364260** SeqNo: **5644980** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1329	0.0100	0.1	0.04196	90.9	80 - 120				
Antimony	0.08682	0.00500	0.1	0.000444	86.4	80 - 120				
Arsenic	0.1005	0.00500	0.1	0.006666	93.9	80 - 120				
Barium	0.6224	0.00500	0.1	0.5398	82.6	80 - 120				O
Beryllium	0.09479	0.00200	0.1	0.000095	94.7	80 - 120				
Cadmium	0.08929	0.00200	0.1	0.000128	89.2	80 - 120				
Calcium	137.8	0.500	10	128.6	91.6	80 - 120				O
Chromium	0.8376	0.00500	0.1	0.6712	166	80 - 120				SO
Cobalt	0.1031	0.00500	0.1	0.01442	88.6	80 - 120				
Copper	0.1003	0.00500	0.1	0.01247	87.8	80 - 120				
Iron	36.76	0.200	10	27.85	89.1	80 - 120				
Lead	0.09417	0.00500	0.1	0.000251	93.9	80 - 120				
Magnesium	91.41	0.200	10	83.87	75.4	80 - 120				SO
Manganese	1.558	0.00500	0.1	1.475	83.2	80 - 120				O
Nickel	0.4923	0.00500	0.1	0.4117	80.6	80 - 120				O
Potassium	11.83	0.200	10	2.134	97.0	80 - 120				
Selenium	0.09473	0.00500	0.1	0.000219	94.5	80 - 120				
Silver	0.0925	0.00500	0.1	0.000009	92.5	80 - 120				
Thallium	0.09544	0.00200	0.1	0.000027	95.4	80 - 120				
Vanadium	0.0974	0.00500	0.1	0.001881	95.5	80 - 120				
Zinc	0.1002	0.00500	0.1	0.01186	88.3	80 - 120				

PDS Sample ID: **HS20060849-01PDS** Units: **mg/L** Analysis Date: **30-Jun-2020 17:20**
Client ID: Run ID: **ICPMS04_364260** SeqNo: **5645199** PrepDate: **19-Jun-2020** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	1048	10.0	500	518.1	106	80 - 120				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154644 (0) **Instrument: ICPMS06** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS20060849-01SD** Units: **mg/L** Analysis Date: **30-Jun-2020 16:09**
Client ID: Run ID: **ICPMS04_364260** SeqNo: **5644977** PrepDate: **19-Jun-2020** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.04692	0.0500					0.04196	0	10	J
Antimony	0.002248	0.0250					0.000444	0	10	J
Arsenic	0.006484	0.0250					0.006666	0	10	J
Barium	0.5172	0.0250					0.5398	4.19	10	
Beryllium	0.00250	0.0100					0.000095	0	10	U
Cadmium	0.00250	0.0100					0.000128	0	10	U
Calcium	124.5	2.50					128.6	3.16	10	
Chromium	0.6614	0.0250					0.6712	1.46	10	
Cobalt	0.01472	0.0250					0.01442	0	10	J
Copper	0.01369	0.0250					0.01247	0	10	J
Iron	28.13	1.00					27.85	1.01	10	
Lead	0.00500	0.0250					0.000251	0	10	U
Magnesium	82.72	1.00					83.87	1.38	10	
Manganese	1.48	0.0250					1.475	0.358	10	
Nickel	0.4248	0.0250					0.4117	3.18	10	
Potassium	2.101	1.00					2.134	1.55	10	
Selenium	0.0125	0.0250					0.000219	0	10	U
Silver	0.00250	0.0250					0.000009	0	10	U
Thallium	0.00250	0.0100					0.000027	0	10	U
Vanadium	0.00500	0.0250					0.001881	0	10	U
Zinc	0.01547	0.0250					0.01186	0	10	J

SD Sample ID: **HS20060849-01SD** Units: **mg/L** Analysis Date: **30-Jun-2020 17:18**
Client ID: Run ID: **ICPMS04_364260** SeqNo: **5645198** PrepDate: **19-Jun-2020** DF: **250**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Sodium	550.1	50.0					518.1	6.18	10	

The following samples were analyzed in this batch: HS20060898-01

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154667 (0) **Instrument: HG03** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:43**
Client ID: Run ID: **HG03_363622** SeqNo: **5627969** PrepDate: **19-Jun-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-154667** Units: **mg/L** Analysis Date: **19-Jun-2020 15:45**
Client ID: Run ID: **HG03_363622** SeqNo: **5627970** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00496	0.000200	0.005	0	99.2	82 - 119				

MS Sample ID: **HS20060498-07MS** Units: **mg/L** Analysis Date: **19-Jun-2020 15:48**
Client ID: Run ID: **HG03_363622** SeqNo: **5627972** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00516	0.000200	0.005	0.00001600	103	82 - 119				

MSD Sample ID: **HS20060498-07MSD** Units: **mg/L** Analysis Date: **19-Jun-2020 15:50**
Client ID: Run ID: **HG03_363622** SeqNo: **5627973** PrepDate: **19-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00512	0.000200	0.005	0.00001600	102	82 - 119	0.005160	0.778	20	

The following samples were analyzed in this batch: HS20060898-01

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: 154701 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-154701** Units: **ug/L** Analysis Date: **01-Jul-2020 19:47**
Client ID: Run ID: **SV-6_364333** SeqNo: **5648925** PrepDate: **22-Jun-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	*0.04239*	*0*	*0.08*	*0*	*53.0*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04658*	*0*	*0.08*	*0*	*58.2*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.03853*	*0*	*0.08*	*0*	*48.2*	*40 - 140*				

LCS Sample ID: **LCS-154701** Units: **ug/L** Analysis Date: **01-Jul-2020 20:07**
Client ID: Run ID: **SV-6_364333** SeqNo: **5648926** PrepDate: **22-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.05939	0.010	0.08	0	74.2	40 - 140				
Surr: 2-Fluorobiphenyl	*0.03816*	*0*	*0.08*	*0*	*47.7*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04582*	*0*	*0.08*	*0*	*57.3*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.05267*	*0*	*0.08*	*0*	*65.8*	*40 - 140*				

LCSD Sample ID: **LCSD-154701** Units: **ug/L** Analysis Date: **01-Jul-2020 20:26**
Client ID: Run ID: **SV-6_364333** SeqNo: **5648927** PrepDate: **22-Jun-2020** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.08379	0.010	0.08	0	105	40 - 140	0.05939	34.1	20	R
Surr: 2-Fluorobiphenyl	*0.04813*	*0*	*0.08*	*0*	*60.2*	*40 - 140*	*0.03816*	*23.1*	*20*	R
Surr: 4-Terphenyl-d14	*0.03781*	*0*	*0.08*	*0*	*47.3*	*40 - 140*	*0.04582*	*19.2*	*20*	
Surr: Nitrobenzene-d5	*0.0622*	*0*	*0.08*	*0*	*77.8*	*40 - 140*	*0.05267*	*16.6*	*20*	

The following samples were analyzed in this batch: HS20060898-02 HS20060898-03

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:54**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637176** 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: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:54**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637176** 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	*43.85*	*1.0*	*50*	*0*	*87.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.42*	*1.0*	*50*	*0*	*88.8*	*85 - 114*				
Surr: Dibromofluoromethane	*44.44*	*1.0*	*50*	*0*	*88.9*	*80 - 119*				
Surr: Toluene-d8	*48.03*	*1.0*	*50*	*0*	*96.1*	*89 - 112*				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:06**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637175** 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	21.14	1.0	20	0	106	74 - 131				
1,1,2,2-Tetrachloroethane	20.49	1.0	20	0	102	71 - 121				
1,1,2-Trichloroethane	20.61	1.0	20	0	103	80 - 119				
1,1-Dichloroethane	20.69	1.0	20	0	103	77 - 125				
1,1-Dichloroethene	21.09	1.0	20	0	105	71 - 131				
1,1-Dichloropropene	19.82	1.0	20	0	99.1	78 - 125				
1,2,3-Trichlorobenzene	24.8	1.0	20	0	124	69 - 129				
1,2,3-Trichloropropane	19.19	1.0	20	0	96.0	73 - 122				
1,2,4-Trichlorobenzene	23.88	1.0	20	0	119	69 - 130				
1,2,4-Trimethylbenzene	20.31	1.0	20	0	102	76 - 124				
1,2-Dibromo-3-chloropropane	18.35	1.0	20	0	91.7	62 - 128				
1,2-Dibromoethane	20.49	1.0	20	0	102	77 - 121				
1,2-Dichlorobenzene	20.33	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	20.81	1.0	20	0	104	73 - 128				
1,2-Dichloropropane	21.48	1.0	20	0	107	78 - 122				
1,3,5-Trimethylbenzene	20.95	1.0	20	0	105	75 - 124				
1,3-Dichlorobenzene	20.59	1.0	20	0	103	80 - 119				
1,3-Dichloropropane	20.15	1.0	20	0	101	80 - 119				
1,4-Dichlorobenzene	19.8	1.0	20	0	99.0	79 - 118				
2,2-Dichloropropane	21.25	1.0	20	0	106	60 - 139				
2-Butanone	37.81	2.0	40	0	94.5	56 - 143				
2-Chlorotoluene	19.69	1.0	20	0	98.4	79 - 122				
2-Hexanone	39.32	2.0	40	0	98.3	57 - 139				
4-Chlorotoluene	19.95	1.0	20	0	99.7	78 - 122				
4-Isopropyltoluene	20.49	1.0	20	0	102	77 - 127				
4-Methyl-2-pentanone	38.41	2.0	40	0	96.0	67 - 130				
Acetone	44.25	2.0	40	0	111	39 - 160				
Benzene	20.92	1.0	20	0	105	79 - 120				
Bromobenzene	20.15	1.0	20	0	101	80 - 120				
Bromochloromethane	19.73	1.0	20	0	98.7	78 - 123				
Bromodichloromethane	21.24	1.0	20	0	106	79 - 125				
Bromoform	19.92	1.0	20	0	99.6	66 - 130				
Bromomethane	20.82	1.0	20	0	104	53 - 141				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-200625** Units: **UG/L** Analysis Date: **25-Jun-2020 13:06**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637175** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	42.38	2.0	40	0	106	64 - 133				
Carbon tetrachloride	19.95	1.0	20	0	99.7	72 - 136				
Chlorobenzene	20.28	1.0	20	0	101	82 - 118				
Chloroethane	22.04	1.0	20	0	110	60 - 138				
Chloroform	21.25	1.0	20	0	106	79 - 124				
Chloromethane	20.47	1.0	20	0	102	50 - 139				
cis-1,2-Dichloroethene	21.53	1.0	20	0	108	78 - 123				
cis-1,3-Dichloropropene	21.26	1.0	20	0	106	75 - 124				
Dibromochloromethane	20.12	1.0	20	0	101	74 - 126				
Dibromomethane	20.34	1.0	20	0	102	79 - 123				
Dichlorodifluoromethane	19.06	1.0	20	0	95.3	32 - 152				
Ethylbenzene	20.21	1.0	20	0	101	79 - 121				
Hexachlorobutadiene	26.32	1.0	20	0	132	66 - 134				
Isopropylbenzene	20.33	1.0	20	0	102	72 - 131				
m,p-Xylene	40.45	2.0	40	0	101	80 - 121				
Methylene chloride	20.24	2.0	20	0	101	74 - 124				
Naphthalene	21.84	1.0	20	0	109	61 - 128				
n-Butylbenzene	21.01	1.0	20	0	105	75 - 128				
n-Propylbenzene	20.45	1.0	20	0	102	76 - 126				
o-Xylene	20.08	1.0	20	0	100	78 - 122				
sec-Butylbenzene	20.58	1.0	20	0	103	77 - 126				
Styrene	20.34	1.0	20	0	102	78 - 123				
tert-Butylbenzene	20.62	1.0	20	0	103	78 - 124				
Tetrachloroethene	20.22	1.0	20	0	101	74 - 129				
Toluene	20.34	1.0	20	0	102	80 - 121				
trans-1,2-Dichloroethene	22.07	1.0	20	0	110	75 - 124				
trans-1,3-Dichloropropene	20.97	1.0	20	0	105	73 - 127				
Trichloroethene	20.75	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	21.46	1.0	20	0	107	65 - 141				
Vinyl chloride	19.92	1.0	20	0	99.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*50.87*	*1.0*	*50*	*0*	*102*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.57*	*1.0*	*50*	*0*	*93.1*	*85 - 114*				
Surr: Dibromofluoromethane	*51.34*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*47.53*	*1.0*	*50*	*0*	*95.1*	*89 - 112*				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060849-01MS** Units: **UG/L** Analysis Date: **25-Jun-2020 15:29**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637180** 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	20.1	1.0	20	0	100	78 - 124				
1,1,1-Trichloroethane	20.36	1.0	20	0	102	74 - 131				
1,1,2,2-Tetrachloroethane	19.92	1.0	20	0	99.6	71 - 121				
1,1,2-Trichloroethane	19.56	1.0	20	0	97.8	80 - 119				
1,1-Dichloroethane	18.76	1.0	20	0	93.8	77 - 125				
1,1-Dichloroethene	20.02	1.0	20	0	100	71 - 131				
1,1-Dichloropropene	20.34	1.0	20	0	102	78 - 125				
1,2,3-Trichlorobenzene	15.15	1.0	20	0	75.8	69 - 129				
1,2,3-Trichloropropane	18.93	1.0	20	0	94.7	73 - 122				
1,2,4-Trichlorobenzene	15.3	1.0	20	0	76.5	69 - 130				
1,2,4-Trimethylbenzene	21.27	1.0	20	0	106	76 - 124				
1,2-Dibromo-3-chloropropane	18.51	1.0	20	0	92.6	62 - 128				
1,2-Dibromoethane	19.8	1.0	20	0	99.0	77 - 121				
1,2-Dichlorobenzene	20.5	1.0	20	0	102	80 - 119				
1,2-Dichloroethane	19.46	1.0	20	0	97.3	73 - 128				
1,2-Dichloropropane	20.31	1.0	20	0	102	78 - 122				
1,3,5-Trimethylbenzene	21.67	1.0	20	0	108	75 - 124				
1,3-Dichlorobenzene	20.43	1.0	20	0	102	80 - 119				
1,3-Dichloropropane	19.36	1.0	20	0	96.8	80 - 119				
1,4-Dichlorobenzene	20.7	1.0	20	0	103	79 - 118				
2,2-Dichloropropane	19.8	1.0	20	0	99.0	60 - 139				
2-Butanone	32.48	2.0	40	0	81.2	56 - 143				
2-Chlorotoluene	20.43	1.0	20	0	102	79 - 122				
2-Hexanone	38.45	2.0	40	0	96.1	57 - 139				
4-Chlorotoluene	20.97	1.0	20	0	105	78 - 122				
4-Isopropyltoluene	22.2	1.0	20	0	111	77 - 127				
4-Methyl-2-pentanone	38.43	2.0	40	0	96.1	67 - 130				
Acetone	31.7	2.0	40	0	79.2	39 - 160				
Benzene	20.31	1.0	20	0	102	79 - 120				
Bromobenzene	20.62	1.0	20	0	103	80 - 120				
Bromochloromethane	17.79	1.0	20	0	88.9	78 - 123				
Bromodichloromethane	19.92	1.0	20	0	99.6	79 - 125				
Bromoform	19.55	1.0	20	0	97.8	66 - 130				
Bromomethane	17.9	1.0	20	0	89.5	53 - 141				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS20060849-01MS** Units: **UG/L** Analysis Date: **25-Jun-2020 15:29**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637180** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	39.16	2.0	40	0	97.9	64 - 133				
Carbon tetrachloride	20.54	1.0	20	0	103	72 - 136				
Chlorobenzene	19.96	1.0	20	0	99.8	82 - 118				
Chloroethane	19.09	1.0	20	0	95.4	60 - 138				
Chloroform	18.95	1.0	20	0	94.7	79 - 124				
Chloromethane	15.77	1.0	20	0	78.8	50 - 139				
cis-1,2-Dichloroethene	19.27	1.0	20	0	96.3	78 - 123				
cis-1,3-Dichloropropene	20.08	1.0	20	0	100	75 - 124				
Dibromochloromethane	19.16	1.0	20	0	95.8	74 - 126				
Dibromomethane	19.57	1.0	20	0	97.8	79 - 123				
Dichlorodifluoromethane	14.08	1.0	20	0	70.4	32 - 152				
Ethylbenzene	20.78	1.0	20	0	104	79 - 121				
Hexachlorobutadiene	18.84	1.0	20	0	94.2	66 - 134				
Isopropylbenzene	21.51	1.0	20	0	108	72 - 131				
m,p-Xylene	42.08	2.0	40	0	105	80 - 121				
Methylene chloride	17.38	2.0	20	0	86.9	74 - 124				
Naphthalene	15.4	1.0	20	0	77.0	61 - 128				
n-Butylbenzene	22.02	1.0	20	0	110	75 - 128				
n-Propylbenzene	22.16	1.0	20	0	111	76 - 126				
o-Xylene	20.49	1.0	20	0	102	78 - 122				
sec-Butylbenzene	22.28	1.0	20	0	111	77 - 126				
Styrene	20.08	1.0	20	0	100	78 - 123				
tert-Butylbenzene	21.97	1.0	20	0	110	78 - 124				
Tetrachloroethene	21.59	1.0	20	0	108	74 - 129				
Toluene	20.73	1.0	20	0	104	80 - 121				
trans-1,2-Dichloroethene	20.42	1.0	20	0	102	75 - 124				
trans-1,3-Dichloropropene	19.57	1.0	20	0	97.9	73 - 127				
Trichloroethene	20.71	1.0	20	0	104	79 - 123				
Trichlorofluoromethane	20.53	1.0	20	0	103	65 - 141				
Vinyl chloride	17.65	1.0	20	0	88.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.29*	*1.0*	*50*	*0*	*92.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.88*	*1.0*	*50*	*0*	*93.8*	*85 - 114*				
Surr: Dibromofluoromethane	*45.86*	*1.0*	*50*	*0*	*91.7*	*80 - 119*				
Surr: Toluene-d8	*49.57*	*1.0*	*50*	*0*	*99.1*	*89 - 112*				

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060849-01MSD** Units: **UG/L** Analysis Date: **25-Jun-2020 15:53**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637181** 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	19.85	1.0	20	0	99.2	78 - 124	20.1	1.25	20	
1,1,1-Trichloroethane	19.82	1.0	20	0	99.1	74 - 131	20.36	2.69	20	
1,1,2,2-Tetrachloroethane	20.26	1.0	20	0	101	71 - 121	19.92	1.67	20	
1,1,2-Trichloroethane	19.62	1.0	20	0	98.1	80 - 119	19.56	0.312	20	
1,1-Dichloroethane	17.89	1.0	20	0	89.4	77 - 125	18.76	4.75	20	
1,1-Dichloroethene	19.91	1.0	20	0	99.5	71 - 131	20.02	0.558	20	
1,1-Dichloropropene	20.5	1.0	20	0	103	78 - 125	20.34	0.786	20	
1,2,3-Trichlorobenzene	18.02	1.0	20	0	90.1	69 - 129	15.15	17.3	20	
1,2,3-Trichloropropane	18.77	1.0	20	0	93.8	73 - 122	18.93	0.874	20	
1,2,4-Trichlorobenzene	18.51	1.0	20	0	92.5	69 - 130	15.3	19	20	
1,2,4-Trimethylbenzene	21.64	1.0	20	0	108	76 - 124	21.27	1.77	20	
1,2-Dibromo-3-chloropropane	18.27	1.0	20	0	91.3	62 - 128	18.51	1.33	20	
1,2-Dibromoethane	19.45	1.0	20	0	97.2	77 - 121	19.8	1.81	20	
1,2-Dichlorobenzene	20.76	1.0	20	0	104	80 - 119	20.5	1.26	20	
1,2-Dichloroethane	19.07	1.0	20	0	95.4	73 - 128	19.46	1.99	20	
1,2-Dichloropropane	19.85	1.0	20	0	99.2	78 - 122	20.31	2.32	20	
1,3,5-Trimethylbenzene	22.39	1.0	20	0	112	75 - 124	21.67	3.25	20	
1,3-Dichlorobenzene	20.84	1.0	20	0	104	80 - 119	20.43	2.02	20	
1,3-Dichloropropane	19.47	1.0	20	0	97.3	80 - 119	19.36	0.562	20	
1,4-Dichlorobenzene	20.7	1.0	20	0	103	79 - 118	20.7	0.00374	20	
2,2-Dichloropropane	19.38	1.0	20	0	96.9	60 - 139	19.8	2.14	20	
2-Butanone	30.88	2.0	40	0	77.2	56 - 143	32.48	5.06	20	
2-Chlorotoluene	21.23	1.0	20	0	106	79 - 122	20.43	3.86	20	
2-Hexanone	38.3	2.0	40	0	95.7	57 - 139	38.45	0.413	20	
4-Chlorotoluene	21.06	1.0	20	0	105	78 - 122	20.97	0.449	20	
4-Isopropyltoluene	23.42	1.0	20	0	117	77 - 127	22.2	5.36	20	
4-Methyl-2-pentanone	38.25	2.0	40	0	95.6	67 - 130	38.43	0.479	20	
Acetone	30.49	2.0	40	0	76.2	39 - 160	31.7	3.89	20	
Benzene	19.76	1.0	20	0	98.8	79 - 120	20.31	2.71	20	
Bromobenzene	19.65	1.0	20	0	98.2	80 - 120	20.62	4.83	20	
Bromochloromethane	17.01	1.0	20	0	85.0	78 - 123	17.79	4.48	20	
Bromodichloromethane	19.12	1.0	20	0	95.6	79 - 125	19.92	4.12	20	
Bromoform	19.53	1.0	20	0	97.7	66 - 130	19.55	0.0937	20	
Bromomethane	17.22	1.0	20	0	86.1	53 - 141	17.9	3.87	20	

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS20060849-01MSD** Units: **UG/L** Analysis Date: **25-Jun-2020 15:53**
Client ID: Run ID: **VOA6_363974** SeqNo: **5637181** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	37.83	2.0	40	0	94.6	64 - 133	39.16	3.45	20	
Carbon tetrachloride	20.65	1.0	20	0	103	72 - 136	20.54	0.522	20	
Chlorobenzene	19.88	1.0	20	0	99.4	82 - 118	19.96	0.385	20	
Chloroethane	18.34	1.0	20	0	91.7	60 - 138	19.09	4.02	20	
Chloroform	18.25	1.0	20	0	91.3	79 - 124	18.95	3.72	20	
Chloromethane	15.01	1.0	20	0	75.0	50 - 139	15.77	4.94	20	
cis-1,2-Dichloroethene	18.5	1.0	20	0	92.5	78 - 123	19.27	4.08	20	
cis-1,3-Dichloropropene	19.1	1.0	20	0	95.5	75 - 124	20.08	5.01	20	
Dibromochloromethane	19.09	1.0	20	0	95.4	74 - 126	19.16	0.398	20	
Dibromomethane	18.86	1.0	20	0	94.3	79 - 123	19.57	3.67	20	
Dichlorodifluoromethane	14.21	1.0	20	0	71.0	32 - 152	14.08	0.865	20	
Ethylbenzene	21.24	1.0	20	0	106	79 - 121	20.78	2.19	20	
Hexachlorobutadiene	19.24	1.0	20	0	96.2	66 - 134	18.84	2.08	20	
Isopropylbenzene	22.35	1.0	20	0	112	72 - 131	21.51	3.85	20	
m,p-Xylene	42.77	2.0	40	0	107	80 - 121	42.08	1.62	20	
Methylene chloride	16.49	2.0	20	0	82.4	74 - 124	17.38	5.26	20	
Naphthalene	18.88	1.0	20	0	94.4	61 - 128	15.4	20.3	20	R
n-Butylbenzene	23.43	1.0	20	0	117	75 - 128	22.02	6.23	20	
n-Propylbenzene	22.89	1.0	20	0	114	76 - 126	22.16	3.22	20	
o-Xylene	20.97	1.0	20	0	105	78 - 122	20.49	2.32	20	
sec-Butylbenzene	23.65	1.0	20	0	118	77 - 126	22.28	5.96	20	
Styrene	20.08	1.0	20	0	100	78 - 123	20.08	0.0111	20	
tert-Butylbenzene	22.85	1.0	20	0	114	78 - 124	21.97	3.93	20	
Tetrachloroethene	22.18	1.0	20	0	111	74 - 129	21.59	2.71	20	
Toluene	20.7	1.0	20	0	104	80 - 121	20.73	0.111	20	
trans-1,2-Dichloroethene	19.34	1.0	20	0	96.7	75 - 124	20.42	5.41	20	
trans-1,3-Dichloropropene	19.02	1.0	20	0	95.1	73 - 127	19.57	2.85	20	
Trichloroethene	20.59	1.0	20	0	103	79 - 123	20.71	0.584	20	
Trichlorofluoromethane	20.08	1.0	20	0	100	65 - 141	20.53	2.18	20	
Vinyl chloride	17.04	1.0	20	0	85.2	58 - 137	17.65	3.47	20	
Surr: 1,2-Dichloroethane-d4	*44.05*	*1.0*	*50*	*0*	*88.1*	*81 - 118*	*46.29*	*4.96*	*20*	
Surr: 4-Bromofluorobenzene	*47.26*	*1.0*	*50*	*0*	*94.5*	*85 - 114*	*46.88*	*0.794*	*20*	
Surr: Dibromofluoromethane	*44.6*	*1.0*	*50*	*0*	*89.2*	*80 - 119*	*45.86*	*2.79*	*20*	
Surr: Toluene-d8	*50.24*	*1.0*	*50*	*0*	*100*	*89 - 112*	*49.57*	*1.34*	*20*	

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS20060898

QC BATCH REPORT

Batch ID: R363974 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch: HS20060898-01 HS20060898-02 HS20060898-04

ALS Houston, US Date: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS20060898**

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: 06-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: 06-Jul-20

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS20060898

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS20060898-01	MW19_061620	Login	6/18/2020 2:49:31 PM	JRM	MET105
HS20060898-01	MW19_061620	Login	6/18/2020 2:49:31 PM	JRM	Sub
HS20060898-01	MW19_061620	Login	6/18/2020 2:49:31 PM	JRM	EXT154
HS20060898-01	MW19_061620	Login	6/18/2020 2:49:31 PM	JRM	VOA195
HS20060898-02	18CPTMW15_061620	Login	6/18/2020 2:49:31 PM	JRM	Sub
HS20060898-02	18CPTMW15_061620	Login	6/18/2020 2:49:31 PM	JRM	EXT154
HS20060898-02	18CPTMW15_061620	Login	6/18/2020 2:49:31 PM	JRM	VOA195
HS20060898-03	18CPTMW16_061720	Login	6/18/2020 2:49:31 PM	JRM	MET105
HS20060898-03	18CPTMW16_061720	Login	6/18/2020 2:49:31 PM	JRM	Sub
HS20060898-03	18CPTMW16_061720	Login	6/18/2020 2:49:31 PM	JRM	EXT154
HS20060898-03	18CPTMW16_061720	Login	6/18/2020 2:49:31 PM	JRM	VOA195
HS20060898-04	Trip Blank	Login	6/18/2020 2:49:31 PM	JRM	VOA195

00974291

ALS Houston, US Date: 06-Jul-20

Sample Receipt Checklist

Work Order ID: HS20060898 **Date/Time Received:** 18-Jun-2020 08:55

Client Name: Bhate Environmental **Received by:** Paresh M. Giga

Completed By:	/S/ Jared R. Makan	18-Jun-2020 14:56	**Reviewed by:**	/S/ Corey Grandits	19-Jun-2020 10:13
	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 ☐	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):	1.1°C/1.1°C UC/C	IR25	
Cooler(s)/Kit(s):	44975		
Date/Time sample(s) sent to storage:	06/18/2020 14:57		
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:

00974292

bhate

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

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

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	1,4 - DIOXANE							Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
MW19-061620	16Jun2020	0935	-	N		WG	5	X	X	X											
18SPTMW5-061620	16Jun2020	1055	-	N		WG	5	X	X		X										
18SPTMW6-061720	17Jun2020	1055	-	N		WG	2		X		X										
TRIP BLANK	17Jun2020			TB		W	2	X													
			-																		
			-																		
			-																		
			-																		
			-																		
			-																		

Quality Assurance Samples (5)

HS20060898
Bhate Environmental Associates, Inc.
LHAAP 18 24

COMMENTS: ____

Custody Transfers Prior to Receipt By Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	6/17/20	1430	1.	6/18/20	0855
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, 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

44975

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

44975

CUSTODY SEAL

Date: 6/17/20 Time: 1430
Name: Scott Beesinger
Company: BHATE

Seal Broken By: SM
Date: 06/18/20

44975 JUN 18 2020

Must Deliver Next Business Day
Time and Tempature Sensitive!

44975

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINGER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE.
PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 18MAY20
ACTWGT: 1.00 LB MAN
CAD: 3001307CAFE3211
DIMS: 26x14x14 IN

TO **CLIENT SERVICES**
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP - 18/24 - RI - BO 71031
RMA:

FedEx Express

FedEx
TRK# 0221 1251 0297 2072

THU - 18 JUN 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH

June 30, 2020 Service Request No:E2000563

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

Laboratory Results for: HS20060898

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory June 19, 2020
For your reference, these analyses have been assigned our service request number **E2000563.**

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.:**	E2000563
Project:	HS20060898	**Date Received:**	06/19/20
Sample Matrix:	Water		

CASE NARRATIVE

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

Sample Receipt

Three samples were received for analysis at ALS Environmental in Houston on 06/19/20.

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:

EQ2000251: 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 & LCSD recoveries are within QC limits; 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:**E2000563
Project: HS20060898

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2000563-001	MW19_061620	6/16/2020	0935
E2000563-002	18CPTMW15_061620	6/16/2020	1050
E2000563-003	18CPTMW16_061720	6/17/2020	1055

Service Request Summary

Folder #: **E2000563**
Client Name: ALS Environmental - US
Project Name: HS20060898
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: 06/19/20
Internal Due Date: 7/2/2020
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS20060898
EDD: No EDD Specified

3 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved
Location: EHRMS-AirArch 4
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2000563-001	MW19_061620	Ground Water	06/16/20 0935	**IV**
E2000563-002	18CPTMW15_061620	Ground Water	06/16/20 1050	**IV**
E2000563-003	18CPTMW16_061720	Ground Water	06/17/20 1055	**IV**

Service Request Summary

Folder #:	**E2000563**
Client Name:	ALS Environmental - US
Project Name:	HS20060898
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:	06/19/20
Internal Due Date:	7/2/2020
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS20060898
EDD:	No EDD Specified

3 250 mL-Plastic Bottle HDPE WM CLEAR Unpreserved

Location: EHRMS-AirArch 4

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	3	Level IV due 7/9,level II 7/2

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
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
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E2000563 5
ALS Laboratory Group
HS20060898

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Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **14150**

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:	HS20060898
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS20060898-01**	**MW19_061620**	**Groundwater**	**16 Jun 2020 09:35**
	SUB_Perch-6850			26 Jun 2020
2.	**HS20060898-02**	**18CPTMW15_061620**	**Groundwater**	**16 Jun 2020 10:50**
	SUB_Perch-6850			26 Jun 2020
3.	**HS20060898-03**	**18CPTMW16_061720**	**Groundwater**	**17 Jun 2020 10:55**
	SUB_Perch-6850			26 Jun 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: 06/19/20

Received By: CA Date/Time: 6/19/20 2000

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS-H

Thermometer ID 1811

Date/Time Received: 6/19/20 Initials: CH Date/Time Logged in: 6/19/20 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 — 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?
—		6/19/20	1000	CH	1.7	☐
						☐
						☐
						☐

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: E2000563 5
ALS Laboratory Group
HS20060898

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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
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Preparation Information Benchsheet

Prep Run#: 360389 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/GRIVERA **Prep Method:** Method **Prep Date/Time:** 6/19/20 15:44

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2000562-001	17WW08_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2000562-002	18CPTMW10DW_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2000562-003	18CPTMW10DW_061520_a	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2000562-004	18CPTMW10SW_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2000562-005	18WW06_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2000562-006	18WW02_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2000562-007	AWD4_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2000562-008	18WW18_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2000562-009	18WW17_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2000562-010	125_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2000562-011	18WW16_061520	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2000563-001	MW19_061620	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2000563-002	18CPTMW15_061620	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2000563-003	18CPTMW16_061720	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2000564-001	LH18/24-SP650_061620_BIX	.01	6850/ClO4 DOD			Ground Water	10mL	
16	EQ2000251-01	MB		6850/ClO4 DOD			Liquid	10mL	
17	EQ2000251-02	LCS		6850/ClO4 DOD			Liquid	10mL	
18	EQ2000251-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
19	EQ2000251-04	17WW08_061520 MS	.01	6850/ClO4 DOD			Liquid	10mL	
20	EQ2000251-05	17WW08_061520 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

E2000562-001	100.00µL	E2000562-002	100.00µL	E2000562-003	100.00µL	E2000562-004	100.00µL	E2000562-005	100.00µL	E2000562-006	100.00µL
E2000562-007	100.00µL	E2000562-008	100.00µL	E2000562-009	100.00µL	E2000562-010	100.00µL	E2000562-011	100.00µL	E2000563-001	100.00µL
E2000563-002	100.00µL	E2000563-003	100.00µL	E2000564-001	100.00µL	EQ2000251-01	100.00µL	EQ2000251-02	100.00µL	EQ2000251-03	100.00µL
EQ2000251-04	100.00µL	EQ2000251-05	100.00µL								

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

EQ2000251-02	1.00µL	EQ2000251-03	1.00µL	EQ2000251-04	1.00µL	EQ2000251-05	1.00µL

Preparation Information Benchsheet

Prep Run#: 360389
Team: Semivoa GCMS/GRIVERA

Prep WorkFlow: GenExt28Day
Prep Method: Method

Status: Prepped
Prep Date/Time: 6/19/20 15:44

Preparation Steps

Step: Preparation
Started: 6/19/20 15:44
Finished: 6/19/20 17:00
By: GRIVERA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Collected:**	6/16/20 0935
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	MW19_061620	**Units:**	µg/L
Lab Code:	E2000563-001	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.936**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 16:41	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Collected:**	6/16/20 1050
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18CPTMW15_061620	**Units:**	µg/L
Lab Code:	E2000563-002	**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	**274**		1.00	0.500	0.250	10	6/19/20	6/29/20 11:41	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Collected:**	6/17/20 1055
Sample Matrix:	Ground Water	**Date Received:**	6/19/20
Sample Name:	18CPTMW16_061720	**Units:**	µg/L
Lab Code:	E2000563-003	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/29/20 11:48	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2000251-01	**Basis:**	NA

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

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	6/19/20	6/27/20 14:27	360389	685428	

Accuracy & Precision

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Analyzed:**	6/29/20
Sample Matrix:	Ground Water		

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

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	360389

	Lab Control Sample EQ2000251-02			Duplicate Lab Control Sample EQ2000251-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.108	0.100	108	0.0932	0.100	93	84 - 119	15	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:**	E2000563
Project:	HS20060898	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000251-02	**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	**0.108**		0.100	0.0500	0.0250	1	6/19/20	6/29/20 10:44	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2000251-03	**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	**0.0932**	J	0.100	0.0500	0.0250	1	6/19/20	6/29/20 10:52	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	6/27/20

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:	E2000562-001	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		Batch QCMS Matrix Spike EQ2000251-04				Batch QCDMS Duplicate Matrix Spike EQ2000251-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0450	0.159	0.100	114	0.157	0.100	112	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:**	E2000563
Project:	HS20060898	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000251-04	**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	**0.159**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 14:51	360389	685428	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2000563
Project:	HS20060898	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Batch QC	**Units:**	µg/L
Lab Code:	EQ2000251-05	**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	**0.157**		0.100	0.0500	0.0250	1	6/19/20	6/27/20 14:59	360389	685428	

Initial Calibration

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20200625

1st Review: Kneir
2nd Review: Hvan

ALS Environmental

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

ALS Group Houston

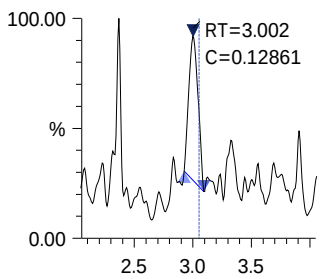
PERCHLORATE1

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

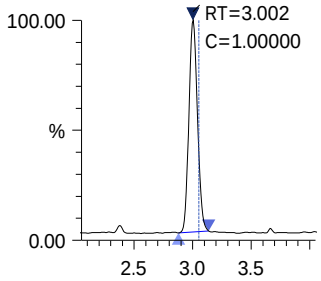
Perchlorate

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

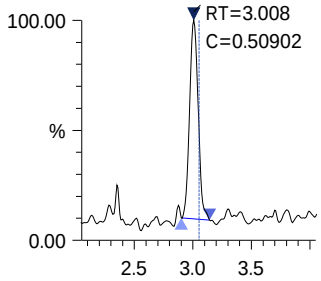
PERCHLORATE2

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

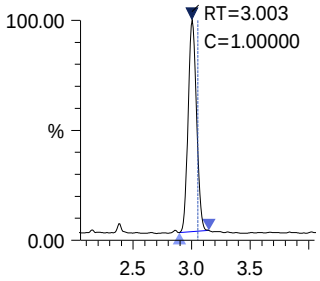
Perchlorate

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

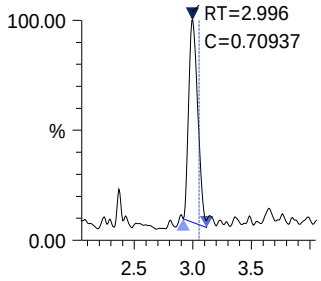
PERCHLORATE3

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

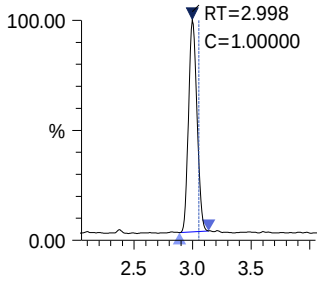
Perchlorate

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

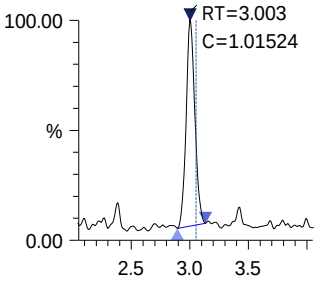
PERCHLORATE4

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

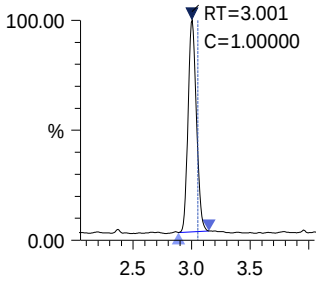
Perchlorate

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



ALS Group Houston

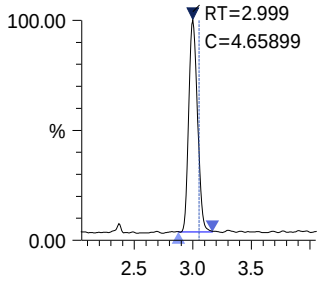
PERCHLORATE5

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

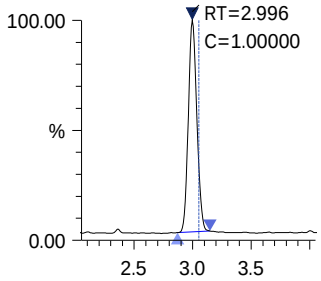
Perchlorate

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



ALS Group Houston

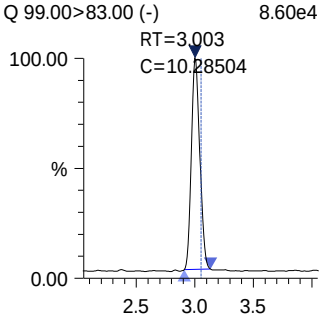
PERCHLORATE6

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

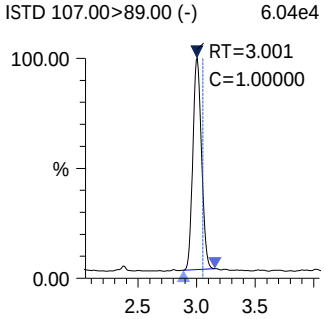
Perchlorate

Conc 10.28504
Area 427451



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 309038



ALS Group Houston

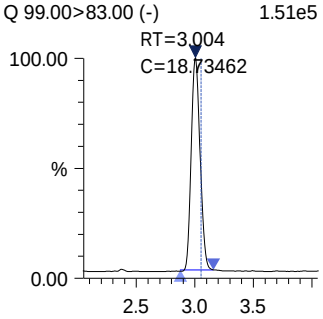
PERCHLORATE7

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

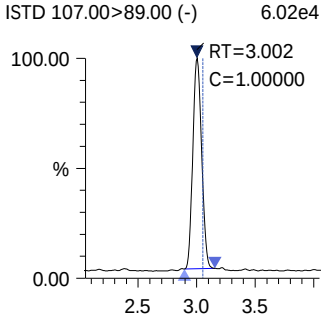
Perchlorate

Conc 18.73462
Area 786893



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 312322



ALS Group Houston

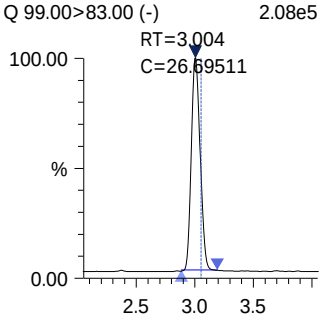
PERCHLORATE8

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

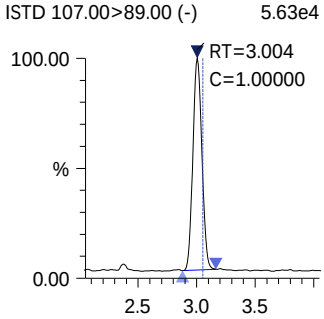
Perchlorate

Conc 26.69511
Area 1075993



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 299716



ALS Group Houston

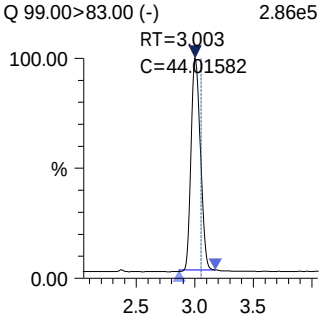
PERCHLORATE9

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

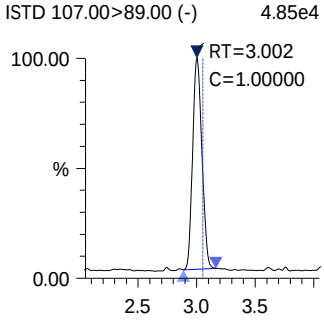
Perchlorate

Conc 44.01582
Area 1567374



Sodium Perchlorate-18O4_IS

Conc 1.00000
Area 264786



ALS Group Houston

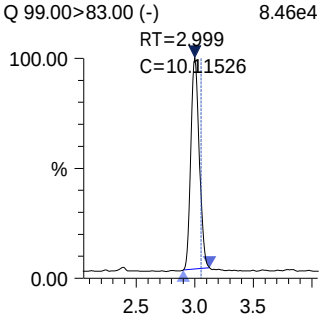
PERCHLORATEICV

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

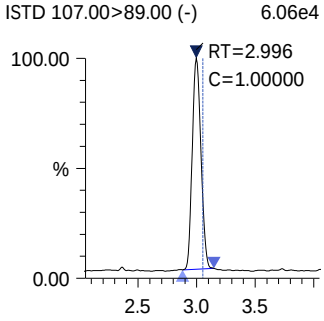
Perchlorate

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

20200627

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
1	IB		20200627_001	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:30
2	IB		20200627_002	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:38
3	IB		20200627_003	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:46
4	LODV		20200627_004	Perchlorate6850b.lcm	1x	☒		6/27/2020 10:54
5	ICS		20200627_005	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:02
6	PERCHLORATE7		20200627_006	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 11:09
7	E2000539-007X50		20200627_007	Perchlorate6850b.lcm	50x	☒		6/27/2020 11:17
8	E2000536-004X100		20200627_008	Perchlorate6850b.lcm	100x	☒	do not use	6/27/2020 11:25
9	E2000541-005		20200627_009	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:33
10	E2000541-010		20200627_010	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:41
11	E2000536-004X200		20200627_011	Perchlorate6850b.lcm	200x	☒		6/27/2020 11:50
12	E2000541-011		20200627_012	Perchlorate6850b.lcm	1x	☒		6/27/2020 11:58
13	E2000541-013		20200627_013	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:05
14	E2000541-014		20200627_014	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:13
15	PERCHLORATE7		20200627_015	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 12:21
16	EQ2000245-01		20200627_016	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:30
17	EQ2000245-02		20200627_017	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:37
18	EQ2000245-03		20200627_018	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:45
19	E2000542-001		20200627_019	Perchlorate6850b.lcm	1x	☒		6/27/2020 12:53
20	E2000542-002		20200627_020	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:01
21	E2000542-003		20200627_021	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:09
22	E2000542-004		20200627_022	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:17
23	E2000542-005		20200627_023	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:25
24	E2000542-006		20200627_024	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:33
25	E2000542-007		20200627_025	Perchlorate6850b.lcm	1x	☒		6/27/2020 13:41
26	PERCHLORATE7		20200627_026	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 13:49
27	E2000542-008		20200627_027	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:04
28	E2000542-009		20200627_028	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:12
29	E2000542-010		20200627_029	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:19
30	EQ2000251-01		20200627_030	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:27
31	EQ2000251-02		20200627_031	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:35
32	EQ2000251-03		20200627_032	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:43
33	EQ2000251-04		20200627_033	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:51
34	EQ2000251-05		20200627_034	Perchlorate6850b.lcm	1x	☒		6/27/2020 14:59
35	E2000562-001		20200627_035	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:07
36	E2000562-002		20200627_036	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:15
37	PERCHLORATE7		20200627_037	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 15:23
38	E2000562-003		20200627_038	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:31
39	E2000562-004		20200627_039	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:38
40	E2000562-005		20200627_040	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:46
41	E2000562-006		20200627_041	Perchlorate6850b.lcm	1x	☒		6/27/2020 15:54
42	E2000562-007		20200627_042	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:02
43	E2000562-008		20200627_043	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:10
44	E2000562-009		20200627_044	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:18
45	E2000562-010		20200627_045	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:26
46	E2000562-011		20200627_046	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:34
47	E2000563-001		20200627_047	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:41
48	PERCHLORATE7		20200627_048	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 16:49
49	E2000563-002		20200627_049	Perchlorate6850b.lcm	1x	☒		6/27/2020 16:57
50	E2000563-003		20200627_050	Perchlorate6850b.lcm	1x	☒		6/27/2020 17:05
51	E2000564-001		20200627_051	Perchlorate6850b.lcm	1x	☒		6/27/2020 17:13
52	E2000541-017X1000		20200627_052	Perchlorate6850b.lcm	1000x	☒		6/27/2020 17:21
54	E2000541-018X1000		20200627_053	Perchlorate6850b.lcm	1000x	☒		6/27/2020 17:29
55	E2000541-019X1000		20200627_054	Perchlorate6850b.lcm	1000x	☒		6/27/2020 17:37

20200627

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
56	E2000539-004X50000		20200627_055	Perchlorate6850b.lcm	50000x	☒		6/27/2020 17:45
57	E2000539-005X100000		20200627_056	Perchlorate6850b.lcm	100000x	☒		6/27/2020 17:53
58	PERCHLORATE7		20200627_057	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 18:01
59	EQ2000245-01		20200627_058	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:08
60	EQ2000245-02		20200627_059	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:16
61	EQ2000245-03		20200627_060	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:24
62	E2000542-006		20200627_061	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:32
63	E2000542-007		20200627_062	Perchlorate6850b.lcm	1x	☒		6/27/2020 18:40
64	PERCHLORATE7		20200627_065	Perchlorate6850b.lcm	1x	☒	3100807-04	6/27/2020 18:48

20200629

1st Review: Kneir
2nd Review: Hvan

ALS Environmental

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
1	null		20200629_001	Perchlorate6850b.lcm	1x	☒		6/29/2020 8:43
2	null		20200629_002	Perchlorate6850b.lcm	1x	☒		6/29/2020 8:48
3	IB		20200629_003	Perchlorate6850b.lcm	1x	☒		6/29/2020 8:54
4	IB		20200629_004	Perchlorate6850b.lcm	1x	☒		6/29/2020 9:01
5	LODV		20200629_005	Perchlorate6850b.lcm	1x	☒		6/29/2020 9:09
6	ICS		20200629_006	Perchlorate6850b.lcm	1x	☒		6/29/2020 9:17
7	PERCHLORATE7		20200629_007	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 10:05
8	EQ2000245-01		20200629_008	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:13
9	EQ2000245-02		20200629_009	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:21
10	EQ2000245-03		20200629_010	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:29
11	EQ2000251-01		20200629_011	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:37
12	EQ2000251-02		20200629_012	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:44
13	EQ2000251-03		20200629_013	Perchlorate6850b.lcm	1x	☒		6/29/2020 10:52
14	E2000562-009		20200629_014	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:00
15	E2000562-010X10		20200629_015	Perchlorate6850b.lcm	10x	☒		6/29/2020 11:08
16	EQ2000245-02		20200629_016	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:17
17	EQ2000245-03		20200629_017	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:25
18	PERCHLORATE7		20200629_018	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 11:33
19	E2000563-002X10		20200629_019	Perchlorate6850b.lcm	10x	☒		6/29/2020 11:41
20	E2000563-003		20200629_020	Perchlorate6850b.lcm	1x	☒		6/29/2020 11:48
21	E2000562-009		20200629_021	Perchlorate6850b.lcm	1x	☒		6/29/2020 13:10
22	E2000542-004X100		20200629_022	Perchlorate6850b.lcm	100x	☒		6/29/2020 13:18
23	E2000542-005X100		20200629_023	Perchlorate6850b.lcm	100x	☒		6/29/2020 13:26
24	E2000562-009X10000		20200629_024	Perchlorate6850b.lcm	10000x	☒		6/29/2020 13:53
25	E2000562-009X20000		20200629_025	Perchlorate6850b.lcm	20000x	☒		6/29/2020 14:07
26	IB		20200629_026	Perchlorate6850b.lcm	1x	☒		6/29/2020 14:15
27	E2000512-011confirmation		20200629_027	Perchlorate6850b.lcm	1x	☒	confirmation only	6/29/2020 14:24
28	PERCHLORATE7		20200629_028	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 14:32
29	EQ2000245-02		20200629_029	Perchlorate6850b.lcm	1x	☒		6/29/2020 14:40
30	EQ2000245-03		20200629_030	Perchlorate6850b.lcm	1x	☒		6/29/2020 14:48
31	PERCHLORATE7		20200629_031	Perchlorate6850b.lcm	1x	☒	3100807-04	6/29/2020 14:56

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

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

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\20200627\20200627_026	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.2	0.1345	0.1388	3.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

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

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\20200627\20200627_037	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.89	0.1345	0.1343	-0.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

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

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\20200627\20200627_048	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.2	0.1345	0.1384	2.9	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

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

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\20200627\20200627_057	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.80	0.1345	0.1331	-1.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

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

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\20200629\20200629_007	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.35	0.1345	0.1270	-5.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

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

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\20200629\20200629_018	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.70	0.1345	0.1316	-2.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

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

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\20200629\20200629_028	**Calibration ID:**	EC2000009
		Analysis Lot:	685428
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.62	0.1345	0.1294	-3.8	NA	± 15 %	Average RF