

Appendix A

Report of Analytical Results

**WORK ORDER NUMBER: 18-11-2057***The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For**Client:** AECOS, Inc.**Client Project Name:** 36914**Attention:** Ann Mello
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

A handwritten signature in black ink, reading "Julie Lam".

Approved for release on 12/10/2018 by:
Julie Lam
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: 36914
Work Order Number: 18-11-2057

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 610 Polynuclear Aromatic Hydrocarbons (Aqueous).	5
	3.2 EPA 608 Pesticides and PCBs (Aqueous).	7
	3.3 EPA 624 Volatile Organics (Aqueous).	9
	3.4 Combined Inorganic Tests.	13
4	Quality Control Sample Data.	14
	4.1 MS/MSD.	14
	4.2 LCS/LCSD.	19
5	Sample Analysis Summary.	28
6	Glossary of Terms and Qualifiers.	29
7	Chain-of-Custody/Sample Receipt Form.	30

Work Order Narrative

Work Order: 18-11-2057

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/28/18. They were assigned to Work Order 18-11-2057.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.



Calscience

Sample Summary

Client: AECOS, Inc.	Work Order:	18-11-2057
45-939 Kamehameha Hwy #104	Project Name:	36914
Kaneohe, HI 96744-3221	PO Number:	
	Date/Time Received:	11/28/18 10:45
	Number of Containers:	13

Attn: Ann Mello

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
Bridge	18-11-2057-1	11/26/18 10:47	13	Aqueous


Return to Contents



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: EPA 610
Method: EPA 610
Units: ug/L

Project: 36914

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Bridge	18-11-2057-1-J	11/26/18 10:47	Aqueous	HPLC 5	12/01/18	12/03/18 19:30	181201L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Naphthalene	ND	0.96	0.074	0.999	
Acenaphthylene	ND	0.96	0.049	0.999	
Acenaphthene	ND	0.96	0.036	0.999	
Fluorene	ND	0.96	0.042	0.999	
Phenanthrene	ND	0.96	0.038	0.999	
Anthracene	ND	0.96	0.042	0.999	
Fluoranthene	ND	0.96	0.033	0.999	
Pyrene	ND	0.96	0.044	0.999	
Benzo (a) Anthracene	ND	0.96	0.034	0.999	
Chrysene	ND	0.96	0.031	0.999	
Benzo (b) Fluoranthene	ND	0.96	0.033	0.999	
Benzo (k) Fluoranthene	ND	0.96	0.034	0.999	
Benzo (a) Pyrene	ND	0.19	0.027	0.999	
Dibenz (a,h) Anthracene	ND	0.96	0.041	0.999	
Benzo (g,h,i) Perylene	ND	0.96	0.040	0.999	
Indeno (1,2,3-c,d) Pyrene	ND	0.96	0.051	0.999	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decafluorobiphenyl	72	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: EPA 610
Method: EPA 610
Units: ug/L

Project: 36914

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-07-025-115	N/A	Aqueous	HPLC 5	12/01/18	12/03/18 17:52	181201L01

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Naphthalene	ND	1.0	0.077	1.00	
Acenaphthylene	ND	1.0	0.051	1.00	
Acenaphthene	ND	1.0	0.038	1.00	
Fluorene	ND	1.0	0.044	1.00	
Phenanthrene	ND	1.0	0.040	1.00	
Anthracene	ND	1.0	0.044	1.00	
Fluoranthene	ND	1.0	0.035	1.00	
Pyrene	ND	1.0	0.046	1.00	
Benzo (a) Anthracene	ND	1.0	0.036	1.00	
Chrysene	ND	1.0	0.033	1.00	
Benzo (b) Fluoranthene	ND	1.0	0.034	1.00	
Benzo (k) Fluoranthene	ND	1.0	0.036	1.00	
Benzo (a) Pyrene	ND	0.20	0.028	1.00	
Dibenz (a,h) Anthracene	ND	1.0	0.042	1.00	
Benzo (g,h,i) Perylene	ND	1.0	0.041	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	1.0	0.053	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decafluorobiphenyl	78	40-160	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: EPA 608
Method: EPA 608
Units: ug/L

Project: 36914

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Bridge	18-11-2057-1-K	11/26/18 10:47	Aqueous	GC 51	11/29/18	12/04/18 14:37	181129L16A

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	0.096	0.026	1.00	
Alpha Chlordane	ND	0.096	0.026	1.00	
Alpha-BHC	ND	0.096	0.027	1.00	
Aroclor-1016	ND	0.96	0.28	1.00	
Aroclor-1221	ND	0.96	0.27	1.00	
Aroclor-1232	ND	0.96	0.24	1.00	
Aroclor-1242	ND	0.96	0.17	1.00	
Aroclor-1248	ND	0.96	0.19	1.00	
Aroclor-1254	ND	0.96	0.22	1.00	
Aroclor-1260	ND	0.96	0.25	1.00	
Aroclor-1262	ND	0.96	0.25	1.00	
Beta-BHC	ND	0.096	0.029	1.00	
Chlordane	ND	0.96	0.32	1.00	
4,4'-DDD	ND	0.096	0.026	1.00	
4,4'-DDE	ND	0.096	0.026	1.00	
4,4'-DDT	ND	0.096	0.026	1.00	
Delta-BHC	ND	0.096	0.027	1.00	
Dieldrin	ND	0.096	0.027	1.00	
Endosulfan I	ND	0.096	0.027	1.00	
Endosulfan II	ND	0.096	0.026	1.00	
Endosulfan Sulfate	ND	0.096	0.028	1.00	
Endrin	ND	0.096	0.029	1.00	
Endrin Aldehyde	ND	0.096	0.025	1.00	
Endrin Ketone	ND	0.096	0.023	1.00	
Gamma Chlordane	ND	0.096	0.026	1.00	
Gamma-BHC	ND	0.096	0.029	1.00	
Heptachlor	ND	0.096	0.025	1.00	
Heptachlor Epoxide	ND	0.096	0.024	1.00	
Methoxychlor	ND	0.096	0.024	1.00	
Toxaphene	ND	1.9	0.57	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	83	50-135			
2,4,5,6-Tetrachloro-m-Xylene	65	50-135			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: EPA 608
Method: EPA 608
Units: ug/L

Project: 36914

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-731-611	N/A	Aqueous	GC 51	11/29/18	12/04/18 13:12	181129L16A

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	0.10	0.027	1.00	
Alpha Chlordane	ND	0.10	0.027	1.00	
Alpha-BHC	ND	0.10	0.028	1.00	
Aroclor-1016	ND	1.0	0.29	1.00	
Aroclor-1221	ND	1.0	0.28	1.00	
Aroclor-1232	ND	1.0	0.25	1.00	
Aroclor-1242	ND	1.0	0.18	1.00	
Aroclor-1248	ND	1.0	0.20	1.00	
Aroclor-1254	ND	1.0	0.23	1.00	
Aroclor-1260	ND	1.0	0.26	1.00	
Aroclor-1262	ND	1.0	0.26	1.00	
Beta-BHC	ND	0.10	0.030	1.00	
Chlordane	ND	1.0	0.33	1.00	
4,4'-DDD	ND	0.10	0.027	1.00	
4,4'-DDE	ND	0.10	0.027	1.00	
4,4'-DDT	ND	0.10	0.027	1.00	
Delta-BHC	ND	0.10	0.029	1.00	
Dieldrin	ND	0.10	0.029	1.00	
Endosulfan I	ND	0.10	0.028	1.00	
Endosulfan II	ND	0.10	0.027	1.00	
Endosulfan Sulfate	ND	0.10	0.029	1.00	
Endrin	ND	0.10	0.031	1.00	
Endrin Aldehyde	ND	0.10	0.026	1.00	
Endrin Ketone	ND	0.10	0.024	1.00	
Gamma Chlordane	ND	0.10	0.027	1.00	
Gamma-BHC	ND	0.10	0.030	1.00	
Heptachlor	ND	0.10	0.026	1.00	
Heptachlor Epoxide	ND	0.10	0.025	1.00	
Methoxychlor	ND	0.10	0.025	1.00	
Toxaphene	ND	2.0	0.59	1.00	
Surrogate	Rec. (%)	Control Limits	Qualifiers		
Decachlorobiphenyl	79	50-135			
2,4,5,6-Tetrachloro-m-Xylene	62	50-135			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 624
Units: ug/L

Project: 36914

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Bridge	18-11-2057-1-A	11/26/18 10:47	Aqueous	GC/MS WW	11/29/18	11/29/18 19:18	181129L015

Comment(s): - The compound 2-chloroethylvinyl ether hydrolyzes under acidic conditions. Acrolein and acrylonitrile have been documented to be acid sensitive. The sample has been acid preserved and therefore, these compounds may be biased low.

- Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
1,1,1,2-Tetrachloroethane	ND	1.0	0.40	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	4.0	1.00	
Naphthalene	ND	10	2.5	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	4.0	1.00	
Isopropanol	ND	50	20	1.00	
Acetone	ND	50	20	1.00	
Benzene	ND	0.50	0.20	1.00	
Bromodichloromethane	ND	1.0	0.40	1.00	
Bromoform	ND	1.0	0.40	1.00	
Bromomethane	ND	1.0	0.81	1.00	
2-Butanone	ND	5.0	3.3	1.00	
Carbon Disulfide	ND	20	8.0	1.00	
Carbon Tetrachloride	ND	0.50	0.20	1.00	
Chlorobenzene	ND	1.0	0.40	1.00	
Chloroethane	ND	1.0	0.40	1.00	
Chloromethane	ND	1.0	0.40	1.00	
2-Chloroethyl Vinyl Ether	ND	2.0	0.80	1.00	
Chloroform	ND	1.0	0.40	1.00	
1,3-Dichlorobenzene	ND	1.0	0.40	1.00	
1,4-Dichlorobenzene	ND	1.0	0.40	1.00	
1,2-Dichlorobenzene	ND	1.0	0.40	1.00	
Dibromochloromethane	ND	1.0	0.40	1.00	
Dichlorodifluoromethane	ND	1.0	0.40	1.00	
1,1-Dichloroethane	ND	1.0	0.40	1.00	
1,2-Dichloroethane	ND	0.50	0.40	1.00	
1,1-Dichloroethene	ND	1.0	0.40	1.00	
c-1,2-Dichloroethene	ND	1.0	0.40	1.00	
t-1,2-Dichloroethene	ND	1.0	0.40	1.00	
1,2-Dichloropropane	ND	1.0	0.40	1.00	
c-1,3-Dichloropropene	ND	0.50	0.20	1.00	
t-1,3-Dichloropropene	ND	0.50	0.20	1.00	
Ethylbenzene	ND	1.0	0.40	1.00	
2-Hexanone	ND	20	8.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 624
Units: ug/L

Project: 36914

Page 2 of 4

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	2.0	0.86	1.00	
4-Methyl-2-Pentanone	ND	10	4.0	1.00	
Styrene	ND	1.0	0.40	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	0.40	1.00	
Tetrachloroethene	ND	1.0	0.40	1.00	
Toluene	ND	1.0	0.40	1.00	
1,1,1-Trichloroethane	ND	1.0	0.40	1.00	
1,1,2-Trichloroethane	ND	1.0	0.40	1.00	
Trichloroethene	ND	1.0	0.40	1.00	
Trichlorofluoromethane	ND	5.0	2.0	1.00	
Vinyl Acetate	ND	5.0	2.5	1.00	
Vinyl Chloride	ND	0.50	0.20	1.00	
o-Xylene	ND	1.0	0.40	1.00	
p/m-Xylene	ND	1.0	0.40	1.00	
1,2-Dibromoethane	ND	1.0	0.40	1.00	
Acrylonitrile	ND	2.0	1.7	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0.40	1.00	
Acrolein	ND	5.0	3.8	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,2-Dichloroethane-d4	114	80-134	
Toluene-d8	102	80-120	
1,4-Bromofluorobenzene	115	80-120	
Dibromofluoromethane	97	80-126	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 624
Units: ug/L

Project: 36914

Page 3 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-681-1055	N/A	Aqueous	GC/MS WW	11/29/18	11/29/18 17:35	181129L015

Comment(s): - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
1,1,1,2-Tetrachloroethane	ND	1.0	0.40	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	4.0	1.00	
Naphthalene	ND	10	2.5	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	4.0	1.00	
Isopropanol	ND	50	20	1.00	
Acetone	ND	50	20	1.00	
Benzene	ND	0.50	0.20	1.00	
Bromodichloromethane	ND	1.0	0.40	1.00	
Bromoform	ND	1.0	0.40	1.00	
Bromomethane	ND	1.0	0.81	1.00	
2-Butanone	ND	5.0	3.3	1.00	
Carbon Disulfide	ND	20	8.0	1.00	
Carbon Tetrachloride	ND	0.50	0.20	1.00	
Chlorobenzene	ND	1.0	0.40	1.00	
Chloroethane	ND	1.0	0.40	1.00	
Chloromethane	ND	1.0	0.40	1.00	
2-Chloroethyl Vinyl Ether	ND	2.0	0.80	1.00	
Chloroform	ND	1.0	0.40	1.00	
1,3-Dichlorobenzene	ND	1.0	0.40	1.00	
1,4-Dichlorobenzene	ND	1.0	0.40	1.00	
1,2-Dichlorobenzene	ND	1.0	0.40	1.00	
Dibromochloromethane	ND	1.0	0.40	1.00	
Dichlorodifluoromethane	ND	1.0	0.40	1.00	
1,1-Dichloroethane	ND	1.0	0.40	1.00	
1,2-Dichloroethane	ND	0.50	0.40	1.00	
1,1-Dichloroethene	ND	1.0	0.40	1.00	
c-1,2-Dichloroethene	ND	1.0	0.40	1.00	
t-1,2-Dichloroethene	ND	1.0	0.40	1.00	
1,2-Dichloropropane	ND	1.0	0.40	1.00	
c-1,3-Dichloropropene	ND	0.50	0.20	1.00	
t-1,3-Dichloropropene	ND	0.50	0.20	1.00	
Ethylbenzene	ND	1.0	0.40	1.00	
2-Hexanone	ND	20	8.0	1.00	
Methylene Chloride	ND	2.0	0.86	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

AECOS, Inc.
 45-939 Kamehameha Hwy #104
 Kaneohe, HI 96744-3221

Date Received: 11/28/18
 Work Order: 18-11-2057
 Preparation: N/A
 Method: EPA 624
 Units: ug/L

Project: 36914

Page 4 of 4

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
4-Methyl-2-Pentanone	ND	10	4.0	1.00	
Styrene	ND	1.0	0.40	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	0.40	1.00	
Tetrachloroethene	ND	1.0	0.40	1.00	
Toluene	ND	1.0	0.40	1.00	
1,1,1-Trichloroethane	ND	1.0	0.40	1.00	
1,1,2-Trichloroethane	ND	1.0	0.40	1.00	
Trichloroethene	ND	1.0	0.40	1.00	
Trichlorofluoromethane	ND	5.0	2.0	1.00	
Vinyl Acetate	ND	5.0	2.5	1.00	
Vinyl Chloride	ND	0.50	0.20	1.00	
o-Xylene	ND	1.0	0.40	1.00	
p/m-Xylene	ND	1.0	0.40	1.00	
1,2-Dibromoethane	ND	1.0	0.40	1.00	
Acrylonitrile	ND	2.0	1.7	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	0.40	1.00	
Acrolein	ND	5.0	3.8	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,2-Dichloroethane-d4	114	80-134	
Toluene-d8	101	80-120	
1,4-Bromofluorobenzene	116	80-120	
Dibromofluoromethane	97	80-126	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221
Project: 36914

Date Received: 11/28/18
Work Order: 18-11-2057

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix
Bridge	18-11-2057-1	11/26/18 10:47	Aqueous

Comment(s): (24) - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Results	RL	MDL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease (24)	ND	1.0	0.80	1.00		mg/L	11/29/18	11/29/18	EPA 1664A
Ammonia (as N) (24)	ND	0.050	0.0086	1.00		mg/L	N/A	12/06/18	EPA 350.1
Total Kjeldahl Nitrogen (24)	0.17	0.20	0.047	1.00	J	mg/L	N/A	12/05/18	EPA 351.2
Phosphorus, Total (24)	0.028	0.050	0.020	1.00	J	mg/L	N/A	12/01/18	EPA 365.1
Nitrate-Nitrite (as N) (24)	0.54	0.10	0.029	1.00		mg/L	12/03/18	12/03/18	SM 4500-NO3 E
Total Nitrogen (24)	0.71	0.10	0.10	1.00		mg/L	N/A	12/06/18	Total Nitrogen by Calc

Method Blank	N/A	Aqueous
---------------------	------------	----------------

Comment(s): (24) - Results were evaluated to the MDL (DL), concentrations $\geq$ to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Results	RL	MDL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease (24)	ND	1.0	0.80	1.00		mg/L	11/29/18	11/29/18	EPA 1664A
Ammonia (as N) (24)	ND	0.050	0.0086	1.00		mg/L	N/A	12/06/18	EPA 350.1
Total Kjeldahl Nitrogen (24)	ND	0.20	0.047	1.00		mg/L	N/A	12/05/18	EPA 351.2
Phosphorus, Total (24)	ND	0.050	0.020	1.00		mg/L	N/A	12/01/18	EPA 365.1
Nitrate-Nitrite (as N) (24)	ND	0.10	0.029	1.00		mg/L	12/03/18	12/03/18	SM 4500-NO3 E

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 1664A

Project: 36914

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-11-2130-1	Sample	Aqueous	N/A	11/29/18	11/29/18 19:30	I1129HEMS2
18-11-2130-1	Matrix Spike	Aqueous	N/A	11/29/18	11/29/18 19:30	I1129HEMS2
18-11-2130-1	Matrix Spike Duplicate	Aqueous	N/A	11/29/18	11/29/18 19:30	I1129HEMS2

Parameter	Sample Conc.	MS Spike	MS Conc.	MS %Rec.	MSD Spike	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
HEM: Oil and Grease	ND	38.46	35.19	91	38.46	35.87	93	78-114	2	0-18	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 350.1

Project: 36914

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-11-2368-1	Sample	Aqueous	ACA 1	N/A	12/06/18 14:16	181206S01
18-11-2368-1	Matrix Spike	Aqueous	ACA 1	N/A	12/06/18 14:16	181206S01
18-11-2368-1	Matrix Spike Duplicate	Aqueous	ACA 1	N/A	12/06/18 14:16	181206S01

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Ammonia (as N)	ND	0.5000	0.3851	77	0.4063	81	90-110	5	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 351.2

Project: 36914

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-11-2254-3	Sample	Aqueous	ACA 1	N/A	12/05/18 11:58	181205S01
18-11-2254-3	Matrix Spike	Aqueous	ACA 1	N/A	12/05/18 11:58	181205S01
18-11-2254-3	Matrix Spike Duplicate	Aqueous	ACA 1	N/A	12/05/18 11:58	181205S01

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Total Kjeldahl Nitrogen	2.705	1.000	3.560	85	3.575	87	90-110	0	0-20	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 365.1

Project: 36914

Page 4 of 5

Quality Control Sample ID	Type		Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number			
Bridge	Sample		Aqueous	ACA 1	N/A	12/01/18 12:47	181201S02			
Bridge	Matrix Spike		Aqueous	ACA 1	N/A	12/01/18 12:47	181201S02			
Bridge	Matrix Spike Duplicate		Aqueous	ACA 1	N/A	12/01/18 12:47	181201S02			
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Phosphorus, Total	ND	0.2000	0.2282	114	0.2227	111	90-110	2	0-25	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18

Work Order: 18-11-2057

Preparation: N/A

Method: SM 4500-NO3 E

Project: 36914

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-11-2368-2	Sample	Aqueous	UV 7	12/03/18	12/03/18 20:37	I1203NO3S2
18-11-2368-2	Matrix Spike	Aqueous	UV 7	12/03/18	12/03/18 20:37	I1203NO3S2
18-11-2368-2	Matrix Spike Duplicate	Aqueous	UV 7	12/03/18	12/03/18 20:37	I1203NO3S2

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Nitrate-Nitrite (as N)	ND	0.5000	0.5266	105	0.5238	105	70-130	1	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: EPA 610
Method: EPA 610

Project: 36914

Page 1 of 9

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-07-025-115	LCS	Aqueous	HPLC 5	12/01/18	12/03/18 18:25	181201L01			
099-07-025-115	LCSD	Aqueous	HPLC 5	12/01/18	12/03/18 18:57	181201L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzo (b) Fluoranthene	2.000	1.803	90	1.778	89	40-160	1	0-20	
Benzo (k) Fluoranthene	2.000	1.846	92	1.839	92	40-160	0	0-20	
Benzo (a) Pyrene	2.000	1.644	82	1.627	81	40-160	1	0-20	
Dibenz (a,h) Anthracene	2.000	1.818	91	1.718	86	40-160	6	0-20	
Benzo (g,h,i) Perylene	2.000	1.887	94	1.820	91	40-160	4	0-20	
Indeno (1,2,3-c,d) Pyrene	2.000	1.856	93	1.880	94	40-160	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 1664A

Project: 36914

Page 2 of 9

Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-16-923-517	LCS	Aqueous		N/A	11/29/18	11/29/18 19:30	I1129HEML2			
099-16-923-517	LCSD	Aqueous		N/A	11/29/18	11/29/18 19:30	I1129HEML2			
Parameter	Spike Added	LCS	Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
HEM: Oil and Grease	40.00	36.90		92	37.10	93	78-114	1	0-18	

[Return to Contents](#)

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.	Date Received:	11/28/18
45-939 Kamehameha Hwy #104	Work Order:	18-11-2057
Kaneohe, HI 96744-3221	Preparation:	N/A
	Method:	EPA 350.1
Project: 36914		Page 3 of 9

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-735-419	LCS	Aqueous	ACA 1	N/A	12/06/18 14:16	181206L01			
099-12-735-419	LCSD	Aqueous	ACA 1	N/A	12/06/18 14:16	181206L01			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Ammonia (as N)	0.5000	0.5365	107	0.5417	108	90-110	1	0-20	

[Return to Contents](#)

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.	Date Received:	11/28/18
45-939 Kamehameha Hwy #104	Work Order:	18-11-2057
Kaneohe, HI 96744-3221	Preparation:	N/A
	Method:	EPA 351.2
Project: 36914		Page 4 of 9

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-741-335	LCS	Aqueous	ACA 1	N/A	12/05/18 11:58	181205L01			
099-12-741-335	LCSD	Aqueous	ACA 1	N/A	12/05/18 11:58	181205L01			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Total Kjeldahl Nitrogen	1.000	1.024	102	1.008	101	90-110	2	0-20	

[Return to Contents](#)

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 365.1

Project: 36914

Page 5 of 9

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-739-261	LCS	Aqueous	ACA 1	N/A	12/01/18 12:47	181201L02			
099-12-739-261	LCSD	Aqueous	ACA 1	N/A	12/01/18 12:47	181201L02			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Phosphorus, Total	0.2000	0.2059	103	0.2065	103	90-110	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: SM 4500-NO3 E

Project: 36914

Page 6 of 9

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-14-282-702	LCS	Aqueous	UV 7	12/03/18	12/03/18 20:37	I1203NO3L2			
099-14-282-702	LCSD	Aqueous	UV 7	12/03/18	12/03/18 20:37	I1203NO3L2			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Nitrate-Nitrite (as N)	0.5000	0.5040	101	0.5038	101	80-120	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: EPA 608
Method: EPA 608

Project: 36914

Page 7 of 9

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-731-611	LCS	Aqueous	GC 51	11/29/18	12/04/18 17:19	181129L16A
099-12-731-611	LCSD	Aqueous	GC 51	11/29/18	12/04/18 17:34	181129L16A

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	0.5000	0.2924	58	0.2250	45	50-135	36-149	26	0-25	X,ME
Alpha Chlordane	0.5000	0.3254	65	0.2534	51	50-135	36-149	25	0-25	
Alpha-BHC	0.5000	0.3651	73	0.2761	55	50-135	36-149	28	0-25	X
Aroclor-1016	2.000	2.210	110	2.260	113	50-135	36-149	2	0-25	
Aroclor-1260	2.000	1.820	91	1.950	98	50-135	36-149	7	0-25	
Beta-BHC	0.5000	0.3945	79	0.2665	53	50-135	36-149	39	0-25	X
4,4'-DDD	0.5000	0.3518	70	0.2762	55	50-135	36-149	24	0-25	
4,4'-DDE	0.5000	0.3321	66	0.2650	53	50-135	36-149	22	0-25	
4,4'-DDT	0.5000	0.3098	62	0.2511	50	50-135	36-149	21	0-25	
Delta-BHC	0.5000	0.3715	74	0.2759	55	50-135	36-149	30	0-25	X
Dieldrin	0.5000	0.3462	69	0.2685	54	50-135	36-149	25	0-25	
Endosulfan I	0.5000	0.3595	72	0.2780	56	50-135	36-149	26	0-25	X
Endosulfan II	0.5000	0.4183	84	0.3272	65	50-135	36-149	24	0-25	
Endosulfan Sulfate	0.5000	0.3375	68	0.2534	51	50-135	36-149	28	0-25	X
Endrin	0.5000	0.3475	70	0.2707	54	50-135	36-149	25	0-25	
Endrin Aldehyde	0.5000	0.3651	73	0.2871	57	50-135	36-149	24	0-25	
Gamma Chlordane	0.5000	0.3122	62	0.2453	49	50-135	36-149	24	0-25	ME
Gamma-BHC	0.5000	0.3604	72	0.2784	56	50-135	36-149	26	0-25	X
Heptachlor	0.5000	0.3488	70	0.2655	53	50-135	36-149	27	0-25	X
Heptachlor Epoxide	0.5000	0.3400	68	0.2646	53	50-135	36-149	25	0-25	
Methoxychlor	0.5000	0.3610	72	0.2814	56	50-135	36-149	25	0-25	

Total number of LCS compounds: 21

Total number of ME compounds: 2

Total number of ME compounds allowed: 1

LCS ME CL validation result: 'Not Pass (See Narrative)

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 11/28/18
Work Order: 18-11-2057
Preparation: N/A
Method: EPA 624

Project: 36914

Page 8 of 9

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-681-1055	LCS	Aqueous	GC/MS WW	11/29/18	11/29/18 13:32	181129L015
099-15-681-1055	LCSD	Aqueous	GC/MS WW	11/29/18	11/29/18 14:04	181129L015

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	54.93	110	55.69	111	37-151	18-170	1	0-30	
Bromodichloromethane	50.00	61.42	123	60.92	122	35-155	15-175	1	0-30	
Bromoform	50.00	53.39	107	55.20	110	45-169	24-190	3	0-30	
Bromomethane	50.00	73.64	147	67.41	135	1-243	0-283	9	0-30	
Carbon Tetrachloride	50.00	58.81	118	55.66	111	60-140	47-153	6	0-30	
Chlorobenzene	50.00	57.50	115	56.03	112	37-160	16-180	3	0-30	
Chloroethane	50.00	33.43	67	31.57	63	14-230	0-266	6	0-30	
Chloromethane	50.00	54.29	109	47.01	94	1-273	0-318	14	0-30	
2-Chloroethyl Vinyl Ether	50.00	15.66	31	17.51	35	1-305	0-356	11	0-30	
Chloroform	50.00	64.81	130	63.07	126	51-138	36-152	3	0-30	
1,3-Dichlorobenzene	50.00	55.08	110	53.71	107	59-156	43-172	3	0-30	
1,4-Dichlorobenzene	50.00	54.47	109	51.83	104	18-190	0-219	5	0-30	
1,2-Dichlorobenzene	50.00	54.23	108	52.88	106	18-190	0-219	3	0-30	
Dibromochloromethane	50.00	58.50	117	59.08	118	53-149	37-165	1	0-30	
1,1-Dichloroethane	50.00	48.35	97	45.99	92	1-234	0-273	5	0-30	
1,2-Dichloroethane	50.00	57.02	114	58.20	116	49-155	31-173	2	0-30	
1,1-Dichloroethene	50.00	60.23	120	55.52	111	59-155	43-171	8	0-30	
t-1,2-Dichloroethene	50.00	57.11	114	55.88	112	54-156	37-173	2	0-30	
1,2-Dichloropropane	50.00	45.17	90	45.82	92	1-210	0-245	1	0-30	
c-1,3-Dichloropropene	50.00	60.21	120	58.83	118	1-227	0-265	2	0-30	
t-1,3-Dichloropropene	50.00	68.58	137	68.76	138	17-183	0-211	0	0-30	
Ethylbenzene	50.00	61.19	122	58.03	116	37-162	16-183	5	0-30	
Methylene Chloride	50.00	48.40	97	48.17	96	1-221	0-258	0	0-30	
1,1,2,2-Tetrachloroethane	50.00	52.02	104	54.75	110	46-157	28-176	5	0-30	
Tetrachloroethene	50.00	62.29	125	58.88	118	64-148	50-162	6	0-30	
Toluene	50.00	52.95	106	51.14	102	47-150	30-167	3	0-30	
1,1,1-Trichloroethane	50.00	65.24	130	62.95	126	52-162	34-180	4	0-30	
1,1,2-Trichloroethane	50.00	60.39	121	62.10	124	52-150	36-166	3	0-30	
Trichloroethene	50.00	57.11	114	54.75	109	71-157	57-171	4	0-30	
Trichlorofluoromethane	50.00	65.47	131	58.65	117	17-181	0-208	11	0-30	
Vinyl Chloride	50.00	48.67	97	42.07	84	1-251	0-293	15	0-30	
o-Xylene	50.00	60.42	121	57.60	115	60-140	47-153	5	0-30	
p/m-Xylene	100.0	124.3	124	119.4	119	60-140	47-153	4	0-30	
Acrylonitrile	50.00	39.98	80	44.90	90	40-160	20-180	12	0-30	
Methyl-t-Butyl Ether (MTBE)	50.00	54.65	109	54.68	109	60-130	48-142	0	0-30	
Acrolein	100.0	94.47	94	98.72	99	40-160	20-180	4	0-30	

RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS/LCSD

AECOS, Inc.	Date Received:	11/28/18
45-939 Kamehameha Hwy #104	Work Order:	18-11-2057
Kaneohe, HI 96744-3221	Preparation:	N/A
	Method:	EPA 624
Project: 36914		Page 9 of 9

Total number of LCS compounds: 36
Total number of ME compounds: 0
Total number of ME compounds allowed: 2
LCS ME CL validation result: Pass


Return to Contents



Calscience

Sample Analysis Summary Report

Work Order: 18-11-2057

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 1664A	N/A	784	N/A	1
EPA 350.1	N/A	1086	ACA 1	1
EPA 351.2	N/A	1086	ACA 1	1
EPA 365.1	N/A	1086	ACA 1	1
EPA 608	EPA 608	669	GC 51	1
EPA 610	EPA 610	1037	HPLC 5	1
EPA 624	N/A	1179	GC/MS WW	2
SM 4500-NO3 E	N/A	1139	UV 7	1
Total Nitrogen by Calc	N/A	92	N/A	1


Return to Contents

Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 18-11-2057

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



AECOS, Inc.

45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

SUB CHAIN OF CUSTODY FORM

PROJECT
FILE No.

18-11-2057

LOG NUMBER

[36914]

CLIENT: AECOS, Inc.
ADDRESS: (see above)

CONTACT: Ann Mello amello@aecos.com
PHONE No.:
Purchase Order No.:

☐ RUSH
☐ SEE REVERSE

SPECIAL INSTRUCTIONS

SAMPLED									
	☒	SAMPLE ID	DATE	TIME	SAMPLE TYPE	CONTAINER(S)		REQUESTED ANALYSES	PRESERVATION
1		Bridge	11-26-18	1047	Stream	2	1L poly	NO ₃ NO ₂ (sm4500 NO ₃ E), TN (EPA 351.2 TKN by SFA) NH ₃ (EPA 350.1 by SFA), TP (EPA 365.1 by SFA)	H ₂ SO ₄
2						1	1L amber glass	Oil and Grease (EPA 1664A) (DL 4mg/L)	H ₂ SO ₄
3						3	40ml VOA	EPA 624	HCl
4						3	40ml VOA	EPA 624	e
5						1	1L amber glass	EPA 610 (PAH)	e
6						1	1L amber glass	EPA 608 (Pesticides)	e
7						1	1L amber glass	Spore	e
8									
9									
10									

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE. NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY:	DATE 11-26
C. Linebaugh, N. Schrader	2018
PRINT NAME	
RELINQUISHED:	DATE 11-26
	2018
SIGNATURE CL (Aecos)	TIME 1215

COMMENTS:

RECEIVED BY:	DATE 11-26
	2018
SIGNATURE CL (Aecos)	TIME 1215
RELINQUISHED:	DATE 11-27
	2018
SIGNATURE OR INITIALS [Signature]	TIME 1200

PRECAUTIONS:

RECEIVED FOR LABORATORY:	DATE 11/28
	2018
SIGNATURE [Signature]	TIME 1045
RELINQUISHED:	DATE
	20
SIGNATURE OR INITIALS [Signature]	TIME

* Please Report down to MOL!

200 ug/L RL / 47 ug/L MOL requested for TN



AECOS, Inc.
45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

2057

Subcontractor:

EC

Requested By:

Jessica Withrow

Date Requested:

11-27-18

Send results to:

amello@aecos.com

Turnaround Time Requested : Normal TAT

Log No.	# of samples	# of bottles	Sample Type	Analysis requested	Date collected	Sample Prep / preservation
[360914]	1	2	stream	NH ₃ , NO ₃ NO ₂ , T.N.TP	11-26-18	H ₂ SO ₄
	1	1	stream	Oil and Grease	11-26-18	H ₂ SO ₄
	1	3	stream	EPA 624	11-26-18	HCL
	1	3	stream	EPA 624	11-26-18	⊖
	1	1	stream	EPA 610 (PAH)	11-26-18	⊖
	1	1	stream	EPA 608 (Pesticides)	11-26-18	⊖
	1	1	stream	Spore	11-26-18	⊖

PLEASE RETURN AECOS COOLERS with replacement bottles:

YES

NO

OTHER SPECIAL NOTES/INSTRUCTIONS:

ORIGIN ID: HNLA (808) 234-7770
AECOS, INC
AECOS, INC
45-939 KAMEHAMEHA HIGHWAY, #104

KANE OHE, HI 96744
UNITED STATES US

SHIP DATE: 27NOV18
ACTWGT: 35.00 LB
CAD: 3872316/NET4040
DIMS: 22x15x15 IN

BILL SENDER

TO **JULIE LAM**
EUROFINS CALSCIENCE
7440 LINCOLN WAY

GARDEN GROVE CA 92841

(714) 895-5494

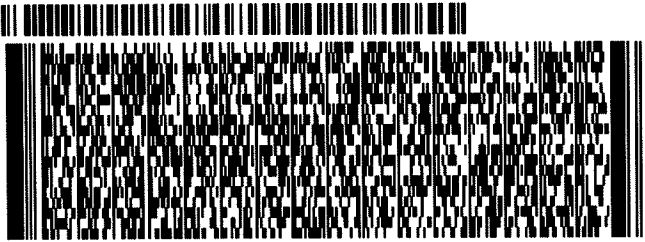
REF: [36914]

INV:

PO:

DEPT:

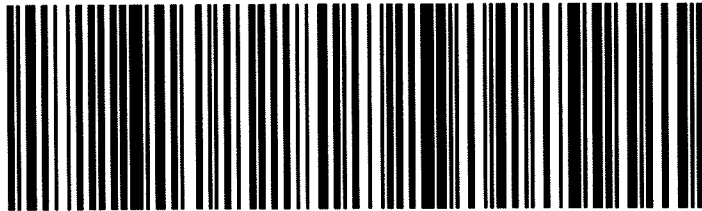
552.02E4AFDC45



WED - 28 NOV 10:30A
PRIORITY OVERNIGHT

TRK# 7738 1533 8457
0201

WZ APVA
CA-US 92841 SNA



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

2057

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: AECOS, Inc.

DATE: 11/28/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: 0.0°C); Temperature (w/o CF): 3.9 °C (w/ CF): 3.9 °C; ☐ Blank ☒ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter

Checked by: WFO

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: WFO

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: WFO

SAMPLE CONDITION:

Chain-of-Custody (COC) document(s) received with samples ☒ Yes ☐ No ☐ N/A

COC document(s) received complete ☒ Yes ☐ No ☐ N/A

☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers

☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time

Sampler's name indicated on COC ☒ Yes ☐ No ☐ N/A

Sample container label(s) consistent with COC ☐ Yes ☒ No ☐ N/A

Sample container(s) intact and in good condition ☒ Yes ☐ No ☐ N/A

Proper containers for analyses requested ☒ Yes ☐ No ☐ N/A

Sufficient volume/mass for analyses requested ☒ Yes ☐ No ☐ N/A

Samples received within holding time ☒ Yes ☐ No ☐ N/A

Aqueous samples for certain analyses received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen ☐ Yes ☐ No ☒ N/A

Proper preservation chemical(s) noted on COC and/or sample container ☒ Yes ☐ No ☐ N/A

Unpreserved aqueous sample(s) received for certain analyses

☒ Volatile Organics ☐ Total Metals ☐ Dissolved Metals

Acid/base preserved samples - pH within acceptable range ☒ Yes ☐ No ☐ N/A

Container(s) for certain analysis free of headspace ☒ Yes ☐ No ☐ N/A

☒ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)

☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation ☐ Yes ☐ No ☒ N/A

CONTAINER TYPE: ③

(Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☒ VOAh ☐ VOAna₂ ☐ 100PJ ☐ 100PJna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBs (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB

☒ 1AGB ☐ 1AGBna₂ ☐ 1AGBs (pH__2) ☒ 1AGBs (O&G) ☒ 1PBs ☐ 1PBna (pH__12) ☒ 250 PJ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® (____) ☐ TerraCores® (____) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ Other Matrix (____): ☐ _____ ☐ _____ ☐ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: WFO

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, znna = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: WFO

SAMPLE ANOMALY REPORT

DATE: 11 / 28 / 2018

SAMPLES, CONTAINERS, AND LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ pH outside acceptable range (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☒ Client sample label(s) do not match COC (comment)
 - ☐ Project information
 - ☐ Client sample ID
 - ☐ Sampling date and/or time
 - ☒ Number of container(s)
 - ☒ Requested analysis
- ☐ Sample container(s) compromised (comment)
 - ☐ Broken
 - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
 - ☐ Flat
 - ☐ Very low in volume
 - ☐ Leaking (not transferred; duplicate bag submitted)
 - ☐ Leaking (transferred into ECI Tedlar™ bags*)
 - ☐ Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

Comments

Received 13 - containers instead of 12, see container type

Received 1-250 ml plastic container unpreserved analysis not requested on COC.

MISCELLANEOUS: (Describe)

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments: _____

Reported by: WJS
Reviewed by: TLS

** Record the total number of containers (i.e., vials or bottles) for the affected sample.