AECOM
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Project name: Del Amo Superfund Site

Project ref: 60487624

Date: September 8, 2017

Mr. Anhtu Nguyen
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CC: Carol Campagna, Shell Oil Products US
Safouh Sayed, DTSC

TECHNICAL MEMORANDUM
SUB-SLAB VAPOR AND OUTDOOR AIR SAMPLING
PROPERTY 23
PRE-DESIGN INVESTIGATION
SOIL AND NAPL OPERABLE UNIT
DEL AMO SUPERFUND SITE
September 8, 2017

INTRODUCTION

This Technical Memorandum presents results of sub-slab vapor and outdoor air sampling completed at Property 23 at the Del Amo Superfund Site (Site), as shown on Figure 1. The investigation was completed as part of the pre-design investigation for soil vapor extraction (SVE) under the building, as described in the Remedial Design (RD) Work Plan for the Soil and NAPL Operable Unit[1]. The purpose of the investigation was to determine the potential need for the SVE-under building remedy component, and if needed, the extent of the area over which it would be implemented. In accordance with Section 12.4.2 of the Record of Decision (ROD)[2], "If new analytical data for one or more of the identified areas demonstrate that the described cleanup goal has been met prior to implementation of the remedy through natural attenuation or other mechanisms, the intent of this ROD will have been met and active remediation will not be required." This Technical Memorandum is being submitted as part of the Pre-Design Investigation Report.

FIELD INVESTIGATION

The initial field investigation was undertaken on May 9th – 10th 2017, and included sub-slab and outdoor air sampling. An additional day to perform resampling of sub-slab vapor at two locations to allow collection of duplicate samples by USEPA occurred on May 26th 2017. The investigation included collection of sub-slab vapor samples at five locations in the southeast portion of the building and two outdoor air samples along the western (upwind) side of the building to establish background conditions. Sub-slab vapor and outdoor air sampling locations are indicated on Figure 2.

Vapor Pin® technology was approved by USEPA[3] to collect the sub-slab vapor samples as an alternative to the traditional vapor probe sampling procedures presented in the Field Sampling Plan (FSP; Appendix F of the RD Work Plan). Vapor Pin®

[1] AECOM, 2016. Remedial Design Work Plan for the Soil and NAPL Operable Unit, Del Amo Superfund Site, Los Angeles, California. December 2, 2016.
[2] USEA, 2011. Record of Decision, Del Amo Facility Superfund Site, Soil and NAPL Operable Unit, Los Angeles, CA. Revised July 26, 2013
[3] USEPA, 2016. Email from Anhtu Nguyen of USEPA to Julie-Doane Allmon of AECOM; November 16, 2016

sampling probes were installed in holes cut into the concrete slab and sealed with silicone tubing to prevent leakage. Leak testing, purging and vapor sample collection were completed in general accordance with the FSP. Sample collection occurred 24 hours after Vapor Pin installation, allowing sufficient time for equilibration. A minimum of 3 system volumes were purged prior to sample collection and silicone sleeves were not reused. Outdoor air sampling was completed using Summa canisters in accordance with the RD Work Plan and FSP.

The field investigation also included out-of-scope collection of a sub-slab vapor sample using high purge volume (HPV) sampling methods. However, excessive vacuum levels were required to achieve the desired high flow rates from the fine grained soil present under the slab for this sample, and as a result, insufficient vacuum was present in the Summa canister alone to allow sample collection. While the HPV sample was subsequently collected from the outflow of an auxiliary pump, the pump was unable to be adequately disassembled for decontamination in the field. The HPV sample is therefore not evaluated in this memorandum.

LABORATORY ANALYSES AND RESULTS

Sub-slab vapor and outdoor air samples were analyzed for volatile organic compounds (VOC) by EPA Method TO-15 and TO-15 SIM, respectively. VOC concentrations detected in sub-slab vapor samples and outdoor air are summarized in Table 1 and on Figure 2. Comprehensive laboratory reports are presented electronically in Attachment 2. For sub-slab vapor sampling locations SGL00934 and SGL00939, where resampling occurred, data for both sampling events are presented in Table 1 and Figure 2.

The significance of the detected concentrations in sub-slab vapor can be evaluated through comparison with ROD-specified action levels/cleanup goals (action levels and cleanup goals are identical). As described in the ROD, action levels are determined by dividing either the compound-specific industrial air regional screening level (RSL) or the background air concentration (whichever is higher) by an attenuation factor. RSLs used in the calculation for this evaluation are listed in Table 12-4.2 of the ROD. For compounds for which an RSL is not listed in the ROD table, November 2012 USEPA industrial air RSL values were used. An attenuation factor of 0.0011 was used, which is consistent with the USEPA-approved Baseline Risk Assessment[4], and the evaluation process included in RD work Plan. The calculated action levels/cleanup goals are included in Table 1.

As indicated in Table 1, detected VOC concentrations in sub-slab vapor are all less than their respective action levels/ cleanup goals.

QUALITY ASSURRANCE/QUALITY CONTROL

Data validation results indicate that the sub-slab vapor and outdoor air data presented in this memorandum are usable for their intended purpose. Comprehensive data validation results are presented under separate cover[5].

CONCLUSIONS

Detected VOC concentrations in sub-slab vapor at Property 23 are uniformly below calculated action levels/cleanup goals. The data indicate that action levels/clean-up goals have been met, and in accordance with the ROD, implementation of the SVE-under building remedy component is not required.

[4] Geosyntec/URS 2006. Baseline Risk Assessment Report, Del Amo Superfund Site, Los Angeles, California. September 7, 2006.
[5] AECOM, 2017. Data Validation Memorandum Summary of Data Validation for Eurofins/Calscience Reports: 17-05-0697, 17-05-0828, and 17-05-2091, Del Amo Superfund Site, Los Angeles, California. July 14, 2017.

FIGURES

0 300 600 Feet

SCALE: 1" = 600 FEET (1:7,200)

Figure 1

LOCATION MAP

Property 23

Pre-Design Investigation
Del Amo Superfund Site

AECOM

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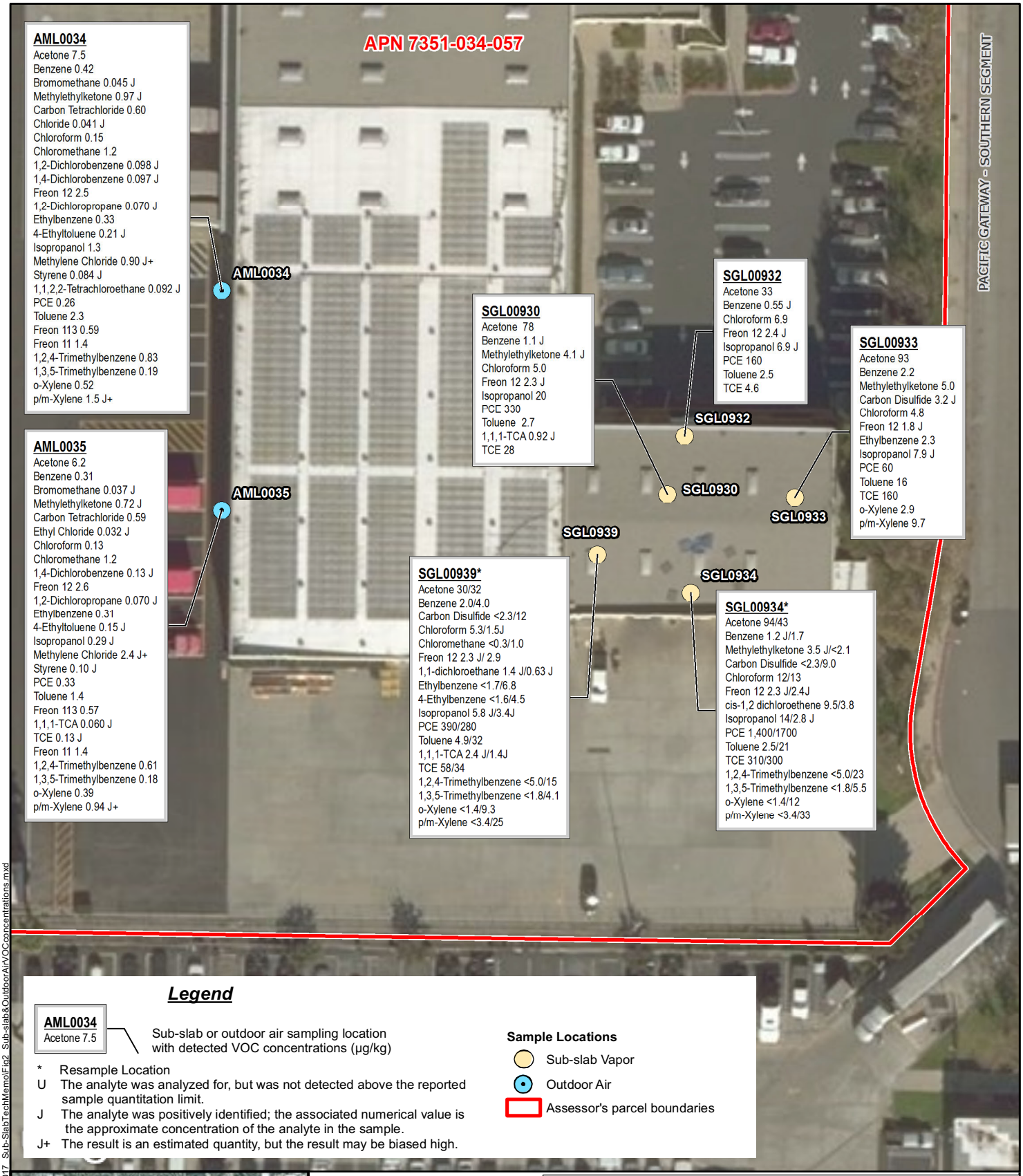

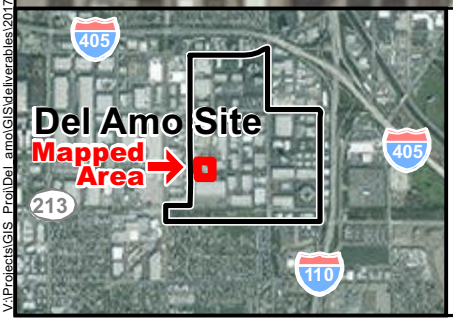

0 25 50 Feet

SCALE: 1" = 50 FEET (1:600)

Figure 2

Sub-slab and Outdoor Air VOC Concentrations

Pre-Design Investigation
Del Amo Superfund Site

AECOM

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TABLES

TABLE 1
SUMMARY OF SUB-SLAB VAPOR AND OUTDOOR AIR ANALYTICAL RESULTS
PROPERTY 23
PREDESIGN INVESTIGATION
SOIL AND NAPL OPERABLE UNIT
DEL AMO SUPERFUND SITE

Detected VOCs	Sub-slab Vapor Sampling Locations, Sample Number, Date, and Concentrations (µg/m^3)							Outdoor Air Sampling Location, Sample Number, Date, and Concentrations (µg/m^3)		Action Level / Cleanup Goal[1] (µg/m^3)
	SGL00930	SGL00932	SGL00933	SGL00934		SGL00939		AML0034	AML0035	
	VSS01310	VSS01312	VSS01313	VSS01314	VSS01318	VSS01315	VSS01317	AAS00318	AAS00319	
	5/9/17	5/9/17	5/9/17	5/9/17	5/26/17	5/9/17	5/26/17	5/9/17	5/9/17	
Acetone	**78**	**33**	**93**	**94**	**43**	**30**	**32**	**7.5**	**6.2**	130,000,000
Benzene	**1.1 J**	**0.55 J**	**2.2**	**1.2 J**	**1.7**	**2.0**	**4.0**	**0.42**	**0.31**	1,500
Bromomethane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.045 J**	**0.037 J**	20,000
2-Butanone (Methylethylketone)	**4.1 J**	<2.1	**5.0**	**3.5 J**	<2.1	<2.1	<2.1	**0.97 J**	**0.72 J**	20,000,000
Carbon Disulfide	<2.3	<2.3	**3.2 J**	<2.3	**9.0**	<2.3	**12**	<0.19	<0.19	2,800,000
Carbon Tetrachloride	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	<0.61	**0.60**	**0.59**	1,800
Chlorobenzene	<0.46	<0.46	<0.46	<0.46	<0.46	<0.46	<0.46	<0.074 U	<0.076 U	200,000
Chloroethane (Ethyl Chloride)	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	**0.041 J**	**0.032 J**	40,000,000
Chloroform	**5.0**	**6.9**	**4.8**	**12**	**13**	**5.3**	**1.5 J**	**0.15**	**0.13**	480
Chloromethane	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	**1.0**	**1.2**	**1.2**	350,000
1,2-Dibromoethane	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<0.098 U	<0.091 U	83[2]
1,2-Dichlorobenzene	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	**0.098 J**	<0.094	800,000
1,4-Dichlorobenzene	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	**0.097 J**	**0.13 J**	1,000
Dichlorodifluoromethane (Freon 12)	**2.3 J**	**2.4 J**	**1.8 J**	**2.3 J**	**2.4 J**	**2.3 J**	**2.9**	**2.5**	**2.6**	400,000
1,1-dichloroethane	<0.39	<0.39	<0.39	<0.39	<0.39	**1.4 J**	**0.63 J**	<0.054	<0.054	7,000
1,2-dichloroethane	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54	<0.14 U	<0.14 U	430
cis-1,2 dichloroethene	<1.1	<1.1	<1.1	**9.5**	**3.8**	<1.1	<1.1	<0.050	<0.050	none
1,2-Dichloropropane	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	**0.070 J**	**0.070 J**	1,100
Ethylbenzene	<1.7	<1.7	**2.3**	<1.7	7.0	<1.7	**6.8**	**0.33**	**0.31**	4,500
4-Ethyltoluene	<1.6	<1.6	<1.6	<1.6	7.0	<1.6	**4.5**	**0.21 J**	**0.15 J**	none
Isopropanol	**20**	**6.9 J**	**7.9 J**	**14**	**2.8 J**	**5.8 J**	**3.4 J**	**1.3**	**0.29 J**	28,000,000
Methylene Chloride	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	**0.90 J+**	**2.4 J+**	1,100,000
Styrene	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	**0.084 J**	**0.10 J**	4,000,000
1,1,2,2-Tetrachloroethane	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	**0.092 J**	<0.084	190
Tetrachloroethene (PCE)	**330**	**160**	**60**	**1,400**	**1,700**	**390**	**280**	**0.26**	**0.33**	1,900
Toluene	**2.7**	**2.5**	**16**	**2.5**	**21**	**4.9**	**32**	**2.3**	**1.4**	20,000,000
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	**0.59**	**0.57**	120,000,000
1,1,1-Trichloroethane (1,1,1-TCA)	**0.92 J**	<0.61	<0.61	<0.61	<0.61	**2.4 J**	**1.4 J**	<0.056	**0.060 J**	20,000,000
Trichloroethene (TCE)	**28**	**4.6**	**160**	**310**	**300**	**58**	**34**	<0.084	**0.13 J**	2,700
Trichlorofluoromethane (Freon 11)	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	**1.4**	**1.4**	2,800,000
1,2,4-Trimethylbenzene	<5.0	<5.0	<5.0	<5.0	**23**	<5.0	**15**	**0.83**	**0.61**	28,000
1,3,5-Trimethylbenzene	<1.8	<1.8	<1.8	<1.8	**5.5**	<1.8	**4.1**	**0.19**	**0.18**	none
o-Xylene	<1.4	<1.4	**2.9**	<1.4	**12**	<1.4	**9.3**	**0.52**	**0.39**	400,000
p/m-Xylene	<3.4	<3.4	**9.7**	<3.4	**33**	<3.4	**25**	**1.5 J+**	**0.94 J+**	400,000

Notes:
All non-detects reported as < Method Detection Limit (MDL)
(µg/m3) - micrograms per cubic meter
VOC - Volatile Organic Compound
Table includes data from Eurofins lab reports 17-05-0697, -0828 and -2091

1 Action level/cleanup goal calculated by dividing the higher of the industrial air Regional Screening Level (from ROD Table 12-4.2 or USEPA November 2012 RSLs) by an attenuation factor of 0.0011

2 Outdoor air (background or ambient) concentration exceeds the 2012 RSL for this compound; therefore, the action level/cleanup goal is calculated by dividing the background concentration (0.091µg/m^3) by the attenuation factor (0.0011).

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity, but the result may be biased high.

ATTACHMENT 1

LABORATORY ANALYTICAL REPORTS

eurofins | Calscience

WORK ORDER NUMBER: 17-05-0697

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: AECOM

Client Project Name: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4

Attention: Julie Doane-Allmon
130 Robin Hill Road
Suite 100
Santa Barbara, CA 93117-3153

Approved for release on 05/25/2017 by:
Vikas Patel
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC 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.

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Work Order Number: 17-05-0697

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Work Order Narrative

Work Order: 17-05-0697 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 05/09/17. They were assigned to Work Order 17-05-0697.

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.

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Sample Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-0697
		Project Name:	Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
		PO Number:	88412
		Date/Time Received:	05/09/17 17:44
		Number of Containers:	7
Attn:	Julie Doane-Allmon		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
VSS01310	17-05-0697-1	05/09/17 11:19	1	Air
VSS01311	17-05-0697-2	05/09/17 11:19	1	Air
VSS01309	17-05-0697-3	05/09/17 10:10	1	Air
VSS01312	17-05-0697-4	05/09/17 13:25	1	Air
VSS01313	17-05-0697-5	05/09/17 14:08	1	Air
VSS01314	17-05-0697-6	05/09/17 14:51	1	Air
VSS01315	17-05-0697-7	05/09/17 15:21	1	Air

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QC Association Summary

Work Order: 17-05-0697

Client Sample ID	Method Name	Type	Ext Name	Instrument	MS/MSD/SDP	LCS/LCSD
VSS01310	EPA TO-15 Full List		N/A	GC/MS ZZ	*2	170510L03
VSS01311	EPA TO-15 Full List		N/A	GC/MS ZZ	*2	170510L03
VSS01312	EPA TO-15 Full List		N/A	GC/MS ZZ	*2	170510L03
VSS01313	EPA TO-15 Full List		N/A	GC/MS ZZ	*2	170510L03
VSS01314	EPA TO-15 Full List		N/A	GC/MS ZZ	*2	170510L03
VSS01314	EPA TO-15 Full List	R	N/A	GC/MS ZZ	*2	170511L01
VSS01315	EPA TO-15 Full List		N/A	GC/MS ZZ	*2	170510L03

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2 = Limited sample received, no MS/MSD performed

R = Rerun

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Detections Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-0697
		Project Name:	Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
		Received:	05/09/17
Attn:	Julie Doane-Allmon		Page 1 of 3

Client SampleID Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VSS01310 (17-05-0697-1)						
Acetone	78		4.8	ug/m3	EPA TO-15	N/A
Benzene	1.1	J	0.27*	ug/m3	EPA TO-15	N/A
2-Butanone	4.1	J	2.1*	ug/m3	EPA TO-15	N/A
Chloroform	5.0		2.4	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	2.3	J	1.0*	ug/m3	EPA TO-15	N/A
Isopropanol	20		12	ug/m3	EPA TO-15	N/A
Tetrachloroethene	330		3.4	ug/m3	EPA TO-15	N/A
Toluene	2.7		1.9	ug/m3	EPA TO-15	N/A
1,1,1-Trichloroethane	0.92	J	0.61*	ug/m3	EPA TO-15	N/A
Trichloroethene	28		2.7	ug/m3	EPA TO-15	N/A
VSS01311 (17-05-0697-2)						
Acetone	78		4.8	ug/m3	EPA TO-15	N/A
Benzene	0.99	J	0.27*	ug/m3	EPA TO-15	N/A
2-Butanone	4.6		4.4	ug/m3	EPA TO-15	N/A
Chloroform	4.9		2.4	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	2.4	J	1.0*	ug/m3	EPA TO-15	N/A
Isopropanol	19		12	ug/m3	EPA TO-15	N/A
Tetrachloroethene	320		3.4	ug/m3	EPA TO-15	N/A
Toluene	2.5		1.9	ug/m3	EPA TO-15	N/A
1,1,1-Trichloroethane	0.90	J	0.61*	ug/m3	EPA TO-15	N/A
Trichloroethene	21		2.7	ug/m3	EPA TO-15	N/A
VSS01312 (17-05-0697-4)						
Acetone	33		4.8	ug/m3	EPA TO-15	N/A
Benzene	0.55	J	0.27*	ug/m3	EPA TO-15	N/A
Chloroform	6.9		2.4	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	2.4	J	1.0*	ug/m3	EPA TO-15	N/A
Isopropanol	6.9	J	2.6*	ug/m3	EPA TO-15	N/A
Tetrachloroethene	160		3.4	ug/m3	EPA TO-15	N/A
Toluene	2.5		1.9	ug/m3	EPA TO-15	N/A
Trichloroethene	4.6		2.7	ug/m3	EPA TO-15	N/A

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* MDL is shown

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Detections Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-0697
		Project Name:	Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
		Received:	05/09/17
Attn:	Julie Doane-Allmon		Page 2 of 3

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VSS01313 (17-05-0697-5)						
Acetone	93		4.8	ug/m3	EPA TO-15	N/A
Benzene	2.2		1.6	ug/m3	EPA TO-15	N/A
2-Butanone	5.0		4.4	ug/m3	EPA TO-15	N/A
Carbon Disulfide	3.2	J	2.3*	ug/m3	EPA TO-15	N/A
Chloroform	4.8		2.4	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	1.8	J	1.0*	ug/m3	EPA TO-15	N/A
Ethylbenzene	2.3		2.2	ug/m3	EPA TO-15	N/A
Isopropanol	7.9	J	2.6*	ug/m3	EPA TO-15	N/A
Tetrachloroethene	60		3.4	ug/m3	EPA TO-15	N/A
Toluene	16		1.9	ug/m3	EPA TO-15	N/A
Trichloroethene	160		2.7	ug/m3	EPA TO-15	N/A
o-Xylene	2.9		2.2	ug/m3	EPA TO-15	N/A
p/m-Xylene	9.7		8.7	ug/m3	EPA TO-15	N/A
VSS01314 (17-05-0697-6)						
Acetone	94		4.8	ug/m3	EPA TO-15	N/A
Benzene	1.2	J	0.27*	ug/m3	EPA TO-15	N/A
2-Butanone	3.5	J	2.1*	ug/m3	EPA TO-15	N/A
Chloroform	12		2.4	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	2.3	J	1.0*	ug/m3	EPA TO-15	N/A
c-1,2-Dichloroethene	9.5		2.0	ug/m3	EPA TO-15	N/A
Isopropanol	14		12	ug/m3	EPA TO-15	N/A
Tetrachloroethene	1400		15	ug/m3	EPA TO-15	N/A
Toluene	2.5		1.9	ug/m3	EPA TO-15	N/A
Trichloroethene	310		2.7	ug/m3	EPA TO-15	N/A
VSS01315 (17-05-0697-7)						
Acetone	30		4.8	ug/m3	EPA TO-15	N/A
Benzene	2.0		1.6	ug/m3	EPA TO-15	N/A
Chloroform	5.3		2.4	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	2.3	J	1.0*	ug/m3	EPA TO-15	N/A
1,1-Dichloroethane	1.4	J	0.39*	ug/m3	EPA TO-15	N/A
Isopropanol	5.8	J	2.6*	ug/m3	EPA TO-15	N/A
Tetrachloroethene	390		3.4	ug/m3	EPA TO-15	N/A
Toluene	4.9		1.9	ug/m3	EPA TO-15	N/A
1,1,1-Trichloroethane	2.4	J	0.61*	ug/m3	EPA TO-15	N/A
Trichloroethene	58		2.7	ug/m3	EPA TO-15	N/A

* MDL is shown

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Detections Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-0697
		Project Name:	Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
		Received:	05/09/17
Attn:	Julie Doane-Allmon		Page 3 of 3

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 1 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01310	**17-05-0697-1-A**	**05/09/17 11:19**	**Air**	**GC/MS ZZ**	**N/A**	**05/10/17 20:13**	**170510L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	78	4.8	2.6	1.00	
Benzene	1.1	1.6	0.27	1.00	J
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	4.1	4.4	2.1	1.00	J
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	ND	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	5.0	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	2.3	2.5	1.0	1.00	J
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	ND	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 2 of 16

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	20	12	2.6	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	330	3.4	0.74	1.00	
Toluene	2.7	1.9	1.4	1.00	
1,1,1-Trichloroethane	0.92	2.7	0.61	1.00	J
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	28	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	ND	2.2	1.4	1.00	
p/m-Xylene	ND	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	68-134	
1,2-Dichloroethane-d4	103	67-133	
Toluene-d8	97	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 3 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01311	**17-05-0697-2-A**	**05/09/17 11:19**	**Air**	**GC/MS ZZ**	**N/A**	**05/10/17 22:44**	**170510L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	78	4.8	2.6	1.00	
Benzene	0.99	1.6	0.27	1.00	J
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	4.6	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	ND	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	4.9	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	2.4	2.5	1.0	1.00	J
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	ND	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 4 of 16

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	19	12	2.6	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	320	3.4	0.74	1.00	
Toluene	2.5	1.9	1.4	1.00	
1,1,1-Trichloroethane	0.90	2.7	0.61	1.00	J
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	21	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	ND	2.2	1.4	1.00	
p/m-Xylene	ND	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	68-134	
1,2-Dichloroethane-d4	102	67-133	
Toluene-d8	98	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 5 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01312	**17-05-0697-4-A**	**05/09/17 13:25**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 00:22**	**170510L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	33	4.8	2.6	1.00	
Benzene	0.55	1.6	0.27	1.00	J
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	ND	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	ND	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	6.9	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	2.4	2.5	1.0	1.00	J
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	ND	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 6 of 16

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	6.9	12	2.6	1.00	J
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	160	3.4	0.74	1.00	
Toluene	2.5	1.9	1.4	1.00	
1,1,1-Trichloroethane	ND	2.7	0.61	1.00	
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	4.6	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	ND	2.2	1.4	1.00	
p/m-Xylene	ND	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	104	67-133	
Toluene-d8	99	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 7 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01313	**17-05-0697-5-A**	**05/09/17 14:08**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 01:11**	**170510L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	93	4.8	2.6	1.00	
Benzene	2.2	1.6	0.27	1.00	
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	5.0	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	3.2	6.2	2.3	1.00	J
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	4.8	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	1.8	2.5	1.0	1.00	J
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	2.3	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 8 of 16

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	7.9	12	2.6	1.00	J
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	60	3.4	0.74	1.00	
Toluene	16	1.9	1.4	1.00	
1,1,1-Trichloroethane	ND	2.7	0.61	1.00	
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	160	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	2.9	2.2	1.4	1.00	
p/m-Xylene	9.7	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	103	68-134	
1,2-Dichloroethane-d4	104	67-133	
Toluene-d8	99	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 9 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01314	**17-05-0697-6-A**	**05/09/17 14:51**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 02:03**	**170510L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	94	4.8	2.6	1.00	
Benzene	1.2	1.6	0.27	1.00	J
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	3.5	4.4	2.1	1.00	J
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	ND	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	12	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	2.3	2.5	1.0	1.00	J
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	9.5	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	ND	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 10 of 16

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	14	12	2.6	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Toluene	2.5	1.9	1.4	1.00	
1,1,1-Trichloroethane	ND	2.7	0.61	1.00	
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	310	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	ND	2.2	1.4	1.00	
p/m-Xylene	ND	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	102	67-133	
Toluene-d8	98	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 11 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01314	**17-05-0697-6-A**	**05/09/17 14:51**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 18:18**	**170511L01**

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

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	1400	15	3.2	4.38	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	104	68-134	
1,2-Dichloroethane-d4	108	67-133	
Toluene-d8	100	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 12 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01315	**17-05-0697-7-A**	**05/09/17 15:21**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 02:55**	**170510L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	30	4.8	2.6	1.00	
Benzene	2.0	1.6	0.27	1.00	
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	ND	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	ND	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	5.3	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	2.3	2.5	1.0	1.00	J
1,1-Dichloroethane	1.4	2.0	0.39	1.00	J
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	ND	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 13 of 16

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	5.8	12	2.6	1.00	J
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	390	3.4	0.74	1.00	
Toluene	4.9	1.9	1.4	1.00	
1,1,1-Trichloroethane	2.4	2.7	0.61	1.00	J
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	58	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	ND	2.2	1.4	1.00	
p/m-Xylene	ND	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	68-134	
1,2-Dichloroethane-d4	101	67-133	
Toluene-d8	98	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4		Page 14 of 16	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-18510**	**N/A**	**Air**	**GC/MS ZZ**	**N/A**	**05/10/17 13:53**	**170510L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	ND	4.8	2.6	1.00	
Benzene	ND	1.6	0.27	1.00	
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	ND	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	ND	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	ND	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	ND	2.5	1.0	1.00	
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	ND	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 15 of 16

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	ND	12	2.6	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	ND	3.4	0.74	1.00	
Toluene	ND	1.9	1.4	1.00	
1,1,1-Trichloroethane	ND	2.7	0.61	1.00	
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	ND	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	ND	2.2	1.4	1.00	
p/m-Xylene	ND	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	68-134	
1,2-Dichloroethane-d4	104	67-133	
Toluene-d8	99	70-130	

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

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Analytical Report

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 16 of 16

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-18508**	**N/A**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 14:22**	**170511L01**

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

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	ND	3.4	0.74	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	109	67-133	
Toluene-d8	100	70-130	

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

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Quality Control - LCS/LCSD

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 1 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18510	**LCS**	**Air**	**GC/MS ZZ**	**N/A**	**05/10/17 11:11**	**170510L03**
095-01-021-18510	**LCSD**	**Air**	**GC/MS ZZ**	**N/A**	**05/10/17 11:55**	**170510L03**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,2,4-Trichlorobenzene	185.5	184.8	100	185.2	100	31-151	11-171	0	0-30	
Acetone	59.39	61.79	104	61.07	103	67-133	56-144	1	0-30	
Benzene	79.87	77.98	98	77.42	97	70-130	60-140	1	0-30	
Benzyl Chloride	129.4	133.3	103	132.4	102	38-158	18-178	1	0-30	
Bromodichloromethane	167.5	170.9	102	169.4	101	70-130	60-140	1	0-30	
Bromoform	258.4	259.2	100	257.1	99	63-147	49-161	1	0-30	
Bromomethane	97.08	92.16	95	92.26	95	70-139	58-150	0	0-30	
2-Butanone	73.73	78.22	106	77.55	105	66-132	55-143	1	0-30	
n-Butylbenzene	137.2	138.2	101	136.6	100	50-150	33-167	1	0-30	
sec-Butylbenzene	137.2	135.9	99	134.8	98	50-150	33-167	1	0-30	
tert-Butylbenzene	137.2	135.0	98	134.2	98	50-150	33-167	1	0-30	
Carbon Disulfide	77.85	73.66	95	73.66	95	68-146	55-159	0	0-30	
Carbon Tetrachloride	157.3	163.9	104	162.3	103	70-136	59-147	1	0-30	
Chlorobenzene	115.1	114.9	100	114.0	99	70-130	60-140	1	0-30	
Chloroethane	65.96	64.50	98	63.38	96	65-149	51-163	2	0-30	
Chloroform	122.1	120.1	98	119.5	98	70-130	60-140	1	0-30	
Chloromethane	51.63	53.28	103	53.13	103	69-141	57-153	0	0-30	
Dibromochloromethane	213.0	216.8	102	214.6	101	70-138	59-149	1	0-30	
1,2-Dibromoethane	192.1	193.4	101	191.4	100	70-133	60-144	1	0-30	
1,2-Dichlorobenzene	150.3	147.2	98	146.0	97	48-138	33-153	1	0-30	
1,3-Dichlorobenzene	150.3	143.8	96	143.3	95	56-134	43-147	0	0-30	
1,4-Dichlorobenzene	150.3	142.4	95	141.6	94	52-136	38-150	1	0-30	
Dichlorodifluoromethane	123.6	125.0	101	123.6	100	67-139	55-151	1	0-30	
1,1-Dichloroethane	101.2	100.2	99	99.50	98	70-130	60-140	1	0-30	
1,2-Dichloroethane	101.2	103.8	103	102.4	101	70-132	60-142	1	0-30	
1,1-Dichloroethene	99.12	98.95	100	98.27	99	70-135	59-146	1	0-30	
c-1,2-Dichloroethene	99.12	95.71	97	95.65	96	70-130	60-140	0	0-30	
t-1,2-Dichloroethene	99.12	96.45	97	96.45	97	70-130	60-140	0	0-30	
1,2-Dichloropropane	115.5	115.3	100	114.2	99	70-130	60-140	1	0-30	
c-1,3-Dichloropropene	113.5	117.4	103	116.0	102	70-130	60-140	1	0-30	
t-1,3-Dichloropropene	113.5	120.9	107	119.2	105	70-147	57-160	1	0-30	
Dichlorotetrafluoroethane	174.8	173.7	99	171.8	98	51-135	37-149	1	0-30	
1,1-Difluoroethane	67.54	69.45	103	69.27	103	70-131	60-141	0	0-30	
Ethylbenzene	108.6	106.9	98	106.0	98	70-130	60-140	1	0-30	
4-Ethyltoluene	122.9	119.4	97	118.6	97	68-130	58-140	1	0-30	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 2 of 6

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Hexachloro-1,3-Butadiene	266.6	257.8	97	256.5	96	44-146	27-163	0	0-30	
2-Hexanone	102.4	104.1	102	102.9	100	70-136	59-147	1	0-30	
Isopropanol	61.45	63.13	103	62.61	102	57-135	44-148	1	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	89.80	100	89.61	99	68-130	58-140	0	0-30	
Methylene Chloride	86.84	84.36	97	84.20	97	69-130	59-140	0	0-30	
4-Methyl-2-Pentanone	102.4	105.2	103	104.7	102	70-130	60-140	0	0-30	
Styrene	106.5	106.1	100	105.4	99	65-131	54-142	1	0-30	
1,1,2,2-Tetrachloroethane	171.6	168.1	98	166.8	97	63-130	52-141	1	0-30	
Tetrachloroethene	169.6	166.2	98	165.2	97	70-130	60-140	1	0-30	
Toluene	94.21	88.67	94	87.91	93	70-130	60-140	1	0-30	
1,1,1-Trichloroethane	136.4	137.8	101	136.9	100	70-130	60-140	1	0-30	
1,1,2-Trichloroethane	136.4	137.4	101	136.2	100	70-130	60-140	1	0-30	
Trichloroethene	134.3	131.6	98	131.1	98	70-130	60-140	0	0-30	
Trichlorofluoromethane	140.5	136.1	97	135.4	96	63-141	50-154	0	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	186.8	98	186.5	97	70-136	59-147	0	0-30	
1,2,4-Trimethylbenzene	122.9	124.7	101	123.1	100	60-132	48-144	1	0-30	
1,3,5-Trimethylbenzene	122.9	120.9	98	119.8	97	62-130	51-141	1	0-30	
Vinyl Acetate	88.03	89.80	102	89.33	101	58-130	46-142	1	0-30	
Vinyl Chloride	63.91	64.16	100	64.42	101	70-134	59-145	0	0-30	
o-Xylene	108.6	103.3	95	102.4	94	69-130	59-140	1	0-30	
p/m-Xylene	217.1	208.4	96	206.6	95	70-132	60-142	1	0-30	

Total number of LCS compounds: 56
Total number of ME compounds: 0
Total number of ME compounds allowed: 3
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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LCS/LCSD - Surrogate

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 3 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18510	**LCS**	**Air**	**GC/MS ZZ**	**N/A**	**05/10/17 11:11**	**170510L03**
095-01-021-18510	**LCSD**	**Air**	**GC/MS ZZ**	**N/A**	**05/10/17 11:55**	**170510L03**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	Qualifiers
1,4-Bromofluorobenzene	178.9	180.4	101	178.8	100	68-134	
1,2-Dichloroethane-d4	105.3	109.1	104	108.0	103	67-133	
Toluene-d8	102.4	102.4	100	102.5	100	70-130	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 4 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18508	**LCS**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 11:55**	**170511L01**
095-01-021-18508	**LCSD**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 12:40**	**170511L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,2,4-Trichlorobenzene	185.5	186.7	101	186.5	101	31-151	11-171	0	0-30	
Acetone	59.39	66.44	112	65.92	111	67-133	56-144	1	0-30	
Benzene	79.87	81.07	102	79.81	100	70-130	60-140	2	0-30	
Benzyl Chloride	129.4	135.5	105	133.3	103	38-158	18-178	2	0-30	
Bromodichloromethane	167.5	177.6	106	175.9	105	70-130	60-140	1	0-30	
Bromoform	258.4	264.0	102	261.9	101	63-147	49-161	1	0-30	
Bromomethane	97.08	94.74	98	94.82	98	70-139	58-150	0	0-30	
2-Butanone	73.73	82.35	112	82.31	112	66-132	55-143	0	0-30	
n-Butylbenzene	137.2	144.2	105	142.2	104	50-150	33-167	1	0-30	
sec-Butylbenzene	137.2	139.1	101	137.8	100	50-150	33-167	1	0-30	
tert-Butylbenzene	137.2	136.9	100	136.1	99	50-150	33-167	1	0-30	
Carbon Disulfide	77.85	75.39	97	75.30	97	68-146	55-159	0	0-30	
Carbon Tetrachloride	157.3	168.6	107	167.0	106	70-136	59-147	1	0-30	
Chlorobenzene	115.1	117.3	102	116.2	101	70-130	60-140	1	0-30	
Chloroethane	65.96	68.57	104	67.53	102	65-149	51-163	2	0-30	
Chloroform	122.1	122.7	101	122.6	100	70-130	60-140	0	0-30	
Chloromethane	51.63	58.08	113	57.90	112	69-141	57-153	0	0-30	
Dibromochloromethane	213.0	225.5	106	221.8	104	70-138	59-149	2	0-30	
1,2-Dibromoethane	192.1	199.6	104	196.7	102	70-133	60-144	1	0-30	
1,2-Dichlorobenzene	150.3	149.4	99	147.8	98	48-138	33-153	1	0-30	
1,3-Dichlorobenzene	150.3	145.0	96	144.2	96	56-134	43-147	1	0-30	
1,4-Dichlorobenzene	150.3	142.8	95	141.9	94	52-136	38-150	1	0-30	
Dichlorodifluoromethane	123.6	134.0	108	134.1	108	67-139	55-151	0	0-30	
1,1-Dichloroethane	101.2	102.4	101	102.5	101	70-130	60-140	0	0-30	
1,2-Dichloroethane	101.2	107.5	106	107.3	106	70-132	60-142	0	0-30	
1,1-Dichloroethene	99.12	102.5	103	102.3	103	70-135	59-146	0	0-30	
c-1,2-Dichloroethene	99.12	96.24	97	96.02	97	70-130	60-140	0	0-30	
t-1,2-Dichloroethene	99.12	96.60	97	96.29	97	70-130	60-140	0	0-30	
1,2-Dichloropropane	115.5	120.4	104	119.0	103	70-130	60-140	1	0-30	
c-1,3-Dichloropropene	113.5	122.2	108	120.1	106	70-130	60-140	2	0-30	
t-1,3-Dichloropropene	113.5	125.1	110	122.9	108	70-147	57-160	2	0-30	
Dichlorotetrafluoroethane	174.8	180.4	103	180.2	103	51-135	37-149	0	0-30	
1,1-Difluoroethane	67.54	71.73	106	71.95	107	70-131	60-141	0	0-30	
Ethylbenzene	108.6	110.5	102	109.1	101	70-130	60-140	1	0-30	
4-Ethyltoluene	122.9	121.3	99	120.4	98	68-130	58-140	1	0-30	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 5 of 6

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Hexachloro-1,3-Butadiene	266.6	267.6	100	264.2	99	44-146	27-163	1	0-30	
2-Hexanone	102.4	109.1	106	108.0	105	70-136	59-147	1	0-30	
Isopropanol	61.45	66.18	108	66.33	108	57-135	44-148	0	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	89.79	100	90.39	100	68-130	58-140	1	0-30	
Methylene Chloride	86.84	87.13	100	86.38	99	69-130	59-140	1	0-30	
4-Methyl-2-Pentanone	102.4	108.2	106	107.7	105	70-130	60-140	0	0-30	
Styrene	106.5	107.1	101	106.3	100	65-131	54-142	1	0-30	
1,1,2,2-Tetrachloroethane	171.6	176.6	103	174.1	101	63-130	52-141	1	0-30	
Tetrachloroethene	169.6	166.5	98	165.8	98	70-130	60-140	0	0-30	
Toluene	94.21	91.89	98	90.64	96	70-130	60-140	1	0-30	
1,1,1-Trichloroethane	136.4	137.4	101	137.8	101	70-130	60-140	0	0-30	
1,1,2-Trichloroethane	136.4	142.2	104	140.7	103	70-130	60-140	1	0-30	
Trichloroethene	134.3	132.2	98	132.3	98	70-130	60-140	0	0-30	
Trichlorofluoromethane	140.5	138.4	99	138.2	98	63-141	50-154	0	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	185.8	97	187.3	98	70-136	59-147	1	0-30	
1,2,4-Trimethylbenzene	122.9	127.9	104	125.9	102	60-132	48-144	2	0-30	
1,3,5-Trimethylbenzene	122.9	122.9	100	121.7	99	62-130	51-141	1	0-30	
Vinyl Acetate	88.03	94.67	108	93.90	107	58-130	46-142	1	0-30	
Vinyl Chloride	63.91	66.92	105	67.41	105	70-134	59-145	1	0-30	
o-Xylene	108.6	106.5	98	105.7	97	69-130	59-140	1	0-30	
p/m-Xylene	217.1	214.2	99	212.6	98	70-132	60-142	1	0-30	

Total number of LCS compounds: 56
Total number of ME compounds: 0
Total number of ME compounds allowed: 3
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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LCS/LCSD - Surrogate

AECOM		Date Received:	05/09/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0697
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 6 of 6

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18508	**LCS**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 11:55**	**170511L01**
095-01-021-18508	**LCSD**	**Air**	**GC/MS ZZ**	**N/A**	**05/11/17 12:40**	**170511L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	Qualifiers
1,4-Bromofluorobenzene	178.9	182.2	102	182.7	102	68-134	
1,2-Dichloroethane-d4	105.3	113.7	108	113.6	108	67-133	
Toluene-d8	102.4	102.7	100	103.0	101	70-130	

RPD: Relative Percent Difference. CL: Control Limits

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Summa Canister Vacuum Summary

Work Order: 17-05-0697

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
VSS01310	-29.50 in Hg	-3.20 in Hg	LC739	Summa Canister 1L
VSS01311	-29.50 in Hg	-4.00 in Hg	LC982	Summa Canister 1L
VSS01309	-29.50 in Hg	-5.40 in Hg	LC898	Summa Canister 1L
VSS01312	-29.50 in Hg	-3.00 in Hg	LC956	Summa Canister 1L
VSS01313	-29.50 in Hg	-2.00 in Hg	LC930	Summa Canister 1L
VSS01314	-29.50 in Hg	-4.00 in Hg	SLC124	Summa Canister 1L
VSS01315	-29.50 in Hg	-3.20 in Hg	LC1197	Summa Canister 1L

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Sample Analysis Summary Report

Work Order: 17-05-0697

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA TO-15	N/A	1087	GC/MS ZZ	2

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Glossary of Terms and Qualifiers

Work Order: 17-05-0697

Qualifiers	Definition
*	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.

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Vikas Patel

From: Pittman, Margaret <Margaret.Pittman@aecom.com>
Sent: Thursday, May 11, 2017 10:51 AM
To: Erick Ovalle
Cc: Doane-Allmon, Julie; Cole, Steve; Francis, Jude; Vikas Patel; Weaver, Erich; Stempson, Bryan; Correia, Daniel
Subject: RE: Sample receipt confirmation / 17-05-0697 / Del Amo Superfund Site, Torrance

Hi Erick,

Please place Sample VSS01309 on hold only.

Samples VSS01310 through VSS01315 can be run.

Thanks!
Maggie

Margaret Pittman
Staff Engineer
D 1-805-692-0681
C 1-805-245-2630
margaret.pittman@aecom.com

AECOM
130 Robin Hill Road Suite 100, Santa Barbara, California 93117
T 1-805-692-0600 F 1-805-964-0259
www.aecom.com

From: Stempson, Bryan
Sent: Wednesday, May 10, 2017 8:14 PM
To: Erick Ovalle
Cc: Doane-Allmon, Julie; Weaver, Erich; Cole, Steve; Francis, Jude; Pittman, Margaret; Vikas Patel
Subject: Re: Sample receipt confirmation / 17-05-0697 / Del Amo Superfund Site, Torrance

Erick - Please place all samples on hold.

Thanks,
Bryan M. Stempson, PG
Cell: (562) 209-4816

On May 10, 2017, at 9:45 AM, Erick Ovalle <ErickOvalle@eurofinsUS.com> wrote:

> Sample receipt confirmation attached. **Please review and advise of any changes required.**
>
> Please call with any questions or concerns.
>
> Best Regards,
> Erick Ovalle
> Project Manager Assistant
>
> Eurofins Calscience,Inc.

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Shell Oil Products US Chain Of Custody Record

AECOM

LAB (LOCATION)
- [ ] ACCUTEST ( )
- [x] CALSCIENCE ( )
- [ ] TESTAMERICA ( )
- [ ] Other ( )

Lab Vendor # 1080777 (CalScience)

Please Check Appropriate Box:
- [x] SGW FDG
- [ ] MOTIVA RETAIL
- [ ] SHELL RETAIL
- [ ] MOTIVA SD&CM
- [ ] CONSULTANT
- [ ] LUBES
- [ ] SHELL PIPELINE
- [ ] OTHER

Print Bill To Contact Name: Julie Doane-Allmon

PlaNet Project ID: IDEA000680

PO #: 962220

GSAP Project ID: USCH/00305

[ ] CHECK IF NO INCIDENT # APPLIES

DATE: 5-9-17

PAGE: 1 of 1

SAMPLING COMPANY: AECOM

LOG CODE:

SITE ADDRESS: Street and City: Del Amo Superfund Site, 20245 S. Vermont Ave., Torrance

State: CA

AECOM Project / Task Number: 60487624.2017.1.2.4

ADDRESS: 130 Robin Hill Road, Suite 100, Santa Barbara CA, 93117

EDF DELIVERABLE TO (Name, Company, Office Location): Steve Cole, AECOM, 300 S. Grand Ave., Ste. 800, LA, CA 90071

PHONE NO.: Direct: 213-996-2398

E-MAIL: steve.j.cole@aecom.com

CONSULTANT PROJECT NO.:

PROJECT CONTACT (Hardcopy or PDF Report to): Julie Doane-Allmon, Erich Weaver

TELEPHONE: 805 692 0618 or 805-692-0648

FAX: 805-964-0259

Bill To Contact E-MAIL: julie.doane-allmon@aecom.com

SAMPLER NAME(S) (Print): Maggie Pittman / Bryan Stempson / Colin Eckert

LAB USE ONLY: 17-05-0697

TURNAROUND TIME (CALENDAR DAYS):
- [x] STANDARD (14 DAY)
- [ ] 5 DAYS
- [ ] 3 DAYS
- [ ] 2 DAYS
- [ ] 24 HOURS
- [ ] RESULTS NEEDED ON WEEKEND

- [ ] LA - RWQCB REPORT FORMAT
- [ ] UST AGENCY:

DELIVERABLES:
- [ ] LEVEL 1
- [ ] LEVEL 2
- [ ] LEVEL 3
- [x] LEVEL 4
- [ ] OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
Email results to: julie.doane-allmon@aecom.com; erich.weaver@aecom.com; steve.j.cole@aecom.com; jude.francis@aecom.com; and margaret.pittman@aecom.com

- [x] SHELL CONTRACT RATE APPLIES
- [ ] STATE REIMBURSEMENT RATE APPLIES
- [ ] EDD NOT NEEDED
- [x] RECEIPT VERIFICATION REQUESTED
- [ ] PROVIDE LEDD DISK

REQUESTED ANALYSIS

UNIT COST: (SI LAB-127) VOCs full list + MTBE EPA TO-15; (SI LAB-127) VOCs full list EPA TO-15 SIM

NON-UNIT COST

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	(SI LAB-127) VOCs full list + MTBE EPA TO-15	(SI LAB-127) VOCs full list EPA TO-15 SIM	Container PID Readings or Laboratory Notes
	~~AAS00318~~ MP	~~5/9/17~~	~~0834~~	~~air~~						~~1~~		~~X~~ MP	
	~~AAS00319~~	~~5/9/17~~	~~0833~~	~~air~~						~~1~~		~~X~~ MP	
1	VSS01310	5/9/17	1119	air						1	X		
2	VSS01311	5/9/17	1119	air						1	X		
3	VSS01309	5/9/17	1010	air						1	X		
4	VSS01312	5/9/17	1325	air						1	X		
5	VSS01313	5/9/17	1408	air						1	X		
6	VSS01314	5/9/17	1451	air						1	X		
7	VSS01315	5/9/17	1521	air						1	X		

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
B. Stempson		5/9/17	1744

Version: 11Dec15

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WORK ORDER NUMBER: 17-05- 0697

SAMPLE RECEIPT CHECKLIST

COOLER 0 OF 0

CLIENT: AECOM

DATE: 05 / 09 / 2017

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

Thermometer ID: SC3 (CF: 0.0°C); Temperature (w/o CF): _____°C (w/ CF): _____°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: 836

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☐ Not Present	☑ N/A	Checked by: 836
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 1017

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ 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	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ 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	☐	☐	☑

CONTAINER TYPE: **(Trip Blank Lot Number:** _____**)**

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

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** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 1017

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: 459

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Supplemental Report 2

The original report has been revised/corrected.

WORK ORDER NUMBER: 17-05-0828

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: AECOM

Client Project Name: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4

Attention: Julie Doane-Allmon
130 Robin Hill Road
Suite 100
Santa Barbara, CA 93117-3153

Approved for release on 06/27/2017 by:
Vikas Patel
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC 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.

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Client Project Name: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
Work Order Number: 17-05-0828

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Work Order Narrative

Work Order: 17-05-0828 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 05/11/17. They were assigned to Work Order 17-05-0828.

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.

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Sample Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-0828
		Project Name:	Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
		PO Number:	88412
		Date/Time Received:	05/11/17 09:25
		Number of Containers:	3
Attn:	Julie Doane-Allmon		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
AAS00318	17-05-0828-1	05/09/17 08:34	1	Air
AAS00319	17-05-0828-2	05/09/17 08:33	1	Air

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QC Association Summary

Work Order: 17-05-0828

Client Sample ID	Method Name	Type	Ext Name	Instrument	MS/MSD/SDP	LCS/LCSD
AAS00318	EPA TO-15 SIM		N/A	GC/MS DD	*2	170511L03
AAS00319	EPA TO-15 SIM		N/A	GC/MS DD	*2	170511L03

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2 = Limited sample received, no MS/MSD performed

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Detections Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-0828
		Project Name:	Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
		Received:	05/11/17
Attn:	Julie Doane-Allmon		Page 1 of 2

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
AAS00318 (17-05-0828-1)						
Acetone	7.5		1.2	ug/m3	EPA TO-15 SIM	N/A
Benzene	0.42		0.080	ug/m3	EPA TO-15 SIM	N/A
Bromomethane	0.045	J	0.028*	ug/m3	EPA TO-15 SIM	N/A
2-Butanone	0.97	J	0.15*	ug/m3	EPA TO-15 SIM	N/A
Carbon Tetrachloride	0.60		0.063	ug/m3	EPA TO-15 SIM	N/A
Chlorobenzene	0.074	B,J	0.065*	ug/m3	EPA TO-15 SIM	N/A
Chloroethane	0.041	J	0.029*	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.15		0.12	ug/m3	EPA TO-15 SIM	N/A
Chloromethane	1.2		0.052	ug/m3	EPA TO-15 SIM	N/A
1,2-Dibromoethane	0.098	B,J	0.020*	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichlorobenzene	0.098	J	0.094*	ug/m3	EPA TO-15 SIM	N/A
1,4-Dichlorobenzene	0.097	J	0.096*	ug/m3	EPA TO-15 SIM	N/A
Dichlorodifluoromethane	2.5		0.12	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.14	B	0.10	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloropropane	0.070	J	0.066*	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.33		0.11	ug/m3	EPA TO-15 SIM	N/A
4-Ethyltoluene	0.21	J	0.081*	ug/m3	EPA TO-15 SIM	N/A
Isopropanol	1.3		1.2	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	0.90	B	0.087	ug/m3	EPA TO-15 SIM	N/A
Styrene	0.084	J	0.053*	ug/m3	EPA TO-15 SIM	N/A
1,1,2,2-Tetrachloroethane	0.092	J	0.084*	ug/m3	EPA TO-15 SIM	N/A
Tetrachloroethene	0.26		0.17	ug/m3	EPA TO-15 SIM	N/A
Toluene	2.3		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.4		0.14	ug/m3	EPA TO-15 SIM	N/A
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.59		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2,4-Trimethylbenzene	0.83		0.25	ug/m3	EPA TO-15 SIM	N/A
1,3,5-Trimethylbenzene	0.19		0.12	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.52		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	1.5	B	0.22	ug/m3	EPA TO-15 SIM	N/A

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* MDL is shown

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Detections Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-0828
		Project Name:	Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4
		Received:	05/11/17
Attn:	Julie Doane-Allmon		Page 2 of 2

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
AAS00319 (17-05-0828-2)						
Acetone	6.2		1.2	ug/m3	EPA TO-15 SIM	N/A
Benzene	0.31		0.080	ug/m3	EPA TO-15 SIM	N/A
Bromomethane	0.037	J	0.028*	ug/m3	EPA TO-15 SIM	N/A
2-Butanone	0.72	J	0.15*	ug/m3	EPA TO-15 SIM	N/A
Carbon Tetrachloride	0.59		0.063	ug/m3	EPA TO-15 SIM	N/A
Chlorobenzene	0.076	B,J	0.065*	ug/m3	EPA TO-15 SIM	N/A
Chloroethane	0.032	J	0.029*	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.13		0.12	ug/m3	EPA TO-15 SIM	N/A
Chloromethane	1.2		0.052	ug/m3	EPA TO-15 SIM	N/A
1,2-Dibromoethane	0.091	B,J	0.020*	ug/m3	EPA TO-15 SIM	N/A
1,4-Dichlorobenzene	0.13	J	0.096*	ug/m3	EPA TO-15 SIM	N/A
Dichlorodifluoromethane	2.6		0.12	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.14	B	0.10	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloropropane	0.070	J	0.066*	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.31		0.11	ug/m3	EPA TO-15 SIM	N/A
4-Ethyltoluene	0.15	J	0.081*	ug/m3	EPA TO-15 SIM	N/A
Isopropanol	0.29	J	0.18*	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	2.4	B	0.087	ug/m3	EPA TO-15 SIM	N/A
Styrene	0.10	J	0.053*	ug/m3	EPA TO-15 SIM	N/A
Tetrachloroethene	0.33		0.17	ug/m3	EPA TO-15 SIM	N/A
Toluene	1.4		0.19	ug/m3	EPA TO-15 SIM	N/A
1,1,1-Trichloroethane	0.060	J	0.056*	ug/m3	EPA TO-15 SIM	N/A
Trichloroethene	0.13	J	0.084*	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.4		0.14	ug/m3	EPA TO-15 SIM	N/A
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2,4-Trimethylbenzene	0.61		0.25	ug/m3	EPA TO-15 SIM	N/A
1,3,5-Trimethylbenzene	0.18		0.12	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.39		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	0.94	B	0.22	ug/m3	EPA TO-15 SIM	N/A

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AAS00318	**17-05-0828-1-A**	**05/09/17 08:34**	**Air**	**GC/MS DD**	**N/A**	**05/11/17 22:56**	**170511L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.19	0.12	1.00	
Acetone	7.5	1.2	0.16	1.00	
Benzene	0.42	0.080	0.048	1.00	
Bromodichloromethane	ND	0.17	0.075	1.00	
Bromomethane	0.045	0.097	0.028	1.00	J
2-Butanone	0.97	1.5	0.15	1.00	J
Carbon Disulfide	ND	1.6	0.19	1.00	
Carbon Tetrachloride	0.60	0.063	0.055	1.00	
Chlorobenzene	0.074	0.12	0.065	1.00	B,J
Chloroethane	0.041	0.066	0.029	1.00	J
Chloroform	0.15	0.12	0.068	1.00	
Chloromethane	1.2	0.052	0.028	1.00	
Dibromochloromethane	ND	0.21	0.082	1.00	
1,2-Dibromoethane	0.098	0.19	0.020	1.00	B,J
1,2-Dichlorobenzene	0.098	0.15	0.094	1.00	J
1,3-Dichlorobenzene	ND	0.15	0.096	1.00	
1,4-Dichlorobenzene	0.097	0.15	0.096	1.00	J
Dichlorodifluoromethane	2.5	0.12	0.064	1.00	
1,1-Dichloroethane	ND	0.10	0.054	1.00	
1,2-Dichloroethane	0.14	0.10	0.058	1.00	B
1,1-Dichloroethene	ND	0.099	0.037	1.00	
c-1,2-Dichloroethene	ND	0.099	0.050	1.00	
t-1,2-Dichloroethene	ND	0.099	0.053	1.00	
1,2-Dichloropropane	0.070	0.12	0.066	1.00	J
c-1,3-Dichloropropene	ND	0.11	0.048	1.00	
t-1,3-Dichloropropene	ND	0.11	0.037	1.00	
Dichlorotetrafluoroethane	ND	0.17	0.12	1.00	
1,1-Difluoroethane	ND	0.68	0.15	1.00	
Ethylbenzene	0.33	0.11	0.060	1.00	
4-Ethyltoluene	0.21	0.25	0.081	1.00	J
Hexachloro-1,3-Butadiene	ND	0.27	0.19	1.00	
Isopropanol	1.3	1.2	0.18	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	0.044	1.00	
Methylene Chloride	0.90	0.087	0.016	1.00	B

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

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Analytical Report

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 2 of 6

Parameter	Result	RL	MDL	DF	Qualifiers
Styrene	0.084	0.11	0.053	1.00	J
1,1,2,2-Tetrachloroethane	0.092	0.17	0.084	1.00	J
Tetrachloroethene	0.26	0.17	0.10	1.00	
Toluene	2.3	0.19	0.059	1.00	
1,1,1-Trichloroethane	ND	0.14	0.056	1.00	
1,1,2-Trichloroethane	ND	0.14	0.085	1.00	
Trichloroethene	ND	0.13	0.084	1.00	
Trichlorofluoromethane	1.4	0.14	0.058	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.59	0.19	0.12	1.00	
1,2,4-Trimethylbenzene	0.83	0.25	0.063	1.00	
1,3,5-Trimethylbenzene	0.19	0.12	0.077	1.00	
Vinyl Chloride	ND	0.026	0.020	1.00	
o-Xylene	0.52	0.11	0.060	1.00	
p/m-Xylene	1.5	0.22	0.054	1.00	B

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	104	37-163	
1,4-Bromofluorobenzene	95	45-153	
Toluene-d8	87	73-121	

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

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Analytical Report

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AAS00319	**17-05-0828-2-A**	**05/09/17 08:33**	**Air**	**GC/MS DD**	**N/A**	**05/11/17 23:52**	**170511L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.19	0.12	1.00	
Acetone	6.2	1.2	0.16	1.00	
Benzene	0.31	0.080	0.048	1.00	
Bromodichloromethane	ND	0.17	0.075	1.00	
Bromomethane	0.037	0.097	0.028	1.00	J
2-Butanone	0.72	1.5	0.15	1.00	J
Carbon Disulfide	ND	1.6	0.19	1.00	
Carbon Tetrachloride	0.59	0.063	0.055	1.00	
Chlorobenzene	0.076	0.12	0.065	1.00	B,J
Chloroethane	0.032	0.066	0.029	1.00	J
Chloroform	0.13	0.12	0.068	1.00	
Chloromethane	1.2	0.052	0.028	1.00	
Dibromochloromethane	ND	0.21	0.082	1.00	
1,2-Dibromoethane	0.091	0.19	0.020	1.00	B,J
1,2-Dichlorobenzene	ND	0.15	0.094	1.00	
1,3-Dichlorobenzene	ND	0.15	0.096	1.00	
1,4-Dichlorobenzene	0.13	0.15	0.096	1.00	J
Dichlorodifluoromethane	2.6	0.12	0.064	1.00	
1,1-Dichloroethane	ND	0.10	0.054	1.00	
1,2-Dichloroethane	0.14	0.10	0.058	1.00	B
1,1-Dichloroethene	ND	0.099	0.037	1.00	
c-1,2-Dichloroethene	ND	0.099	0.050	1.00	
t-1,2-Dichloroethene	ND	0.099	0.053	1.00	
1,2-Dichloropropane	0.070	0.12	0.066	1.00	J
c-1,3-Dichloropropene	ND	0.11	0.048	1.00	
t-1,3-Dichloropropene	ND	0.11	0.037	1.00	
Dichlorotetrafluoroethane	ND	0.17	0.12	1.00	
1,1-Difluoroethane	ND	0.68	0.15	1.00	
Ethylbenzene	0.31	0.11	0.060	1.00	
4-Ethyltoluene	0.15	0.25	0.081	1.00	J
Hexachloro-1,3-Butadiene	ND	0.27	0.19	1.00	
Isopropanol	0.29	1.2	0.18	1.00	J
Methyl-t-Butyl Ether (MTBE)	ND	0.090	0.044	1.00	
Methylene Chloride	2.4	0.087	0.016	1.00	B

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

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Analytical Report

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 4 of 6

Parameter	Result	RL	MDL	DF	Qualifiers
Styrene	0.10	0.11	0.053	1.00	J
1,1,2,2-Tetrachloroethane	ND	0.17	0.084	1.00	
Tetrachloroethene	0.33	0.17	0.10	1.00	
Toluene	1.4	0.19	0.059	1.00	
1,1,1-Trichloroethane	0.060	0.14	0.056	1.00	J
1,1,2-Trichloroethane	ND	0.14	0.085	1.00	
Trichloroethene	0.13	0.13	0.084	1.00	J
Trichlorofluoromethane	1.4	0.14	0.058	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	0.19	0.12	1.00	
1,2,4-Trimethylbenzene	0.61	0.25	0.063	1.00	
1,3,5-Trimethylbenzene	0.18	0.12	0.077	1.00	
Vinyl Chloride	ND	0.026	0.020	1.00	
o-Xylene	0.39	0.11	0.060	1.00	
p/m-Xylene	0.94	0.22	0.054	1.00	B

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	106	37-163	
1,4-Bromofluorobenzene	92	45-153	
Toluene-d8	87	73-121	

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

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Analytical Report

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-214-352**	**N/A**	**Air**	**GC/MS DD**	**N/A**	**05/11/17 18:43**	**170511L03**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.19	0.12	1.00	
Acetone	ND	1.2	0.16	1.00	
Benzene	ND	0.080	0.048	1.00	
Bromodichloromethane	ND	0.17	0.075	1.00	
Bromomethane	ND	0.097	0.028	1.00	
2-Butanone	ND	1.5	0.15	1.00	
Carbon Disulfide	ND	1.6	0.19	1.00	
Carbon Tetrachloride	ND	0.063	0.055	1.00	
Chlorobenzene	0.071	0.12	0.065	1.00	J
Chloroethane	ND	0.066	0.029	1.00	
Chloroform	ND	0.12	0.068	1.00	
Chloromethane	ND	0.052	0.028	1.00	
Dibromochloromethane	ND	0.21	0.082	1.00	
1,2-Dibromoethane	0.085	0.19	0.020	1.00	J
1,2-Dichlorobenzene	ND	0.15	0.094	1.00	
1,3-Dichlorobenzene	ND	0.15	0.096	1.00	
1,4-Dichlorobenzene	ND	0.15	0.096	1.00	
Dichlorodifluoromethane	ND	0.12	0.064	1.00	
1,1-Dichloroethane	ND	0.10	0.054	1.00	
1,2-Dichloroethane	0.062	0.10	0.058	1.00	J
1,1-Dichloroethene	ND	0.099	0.037	1.00	
c-1,2-Dichloroethene	ND	0.099	0.050	1.00	
t-1,2-Dichloroethene	ND	0.099	0.053	1.00	
1,2-Dichloropropane	ND	0.12	0.066	1.00	
c-1,3-Dichloropropene	ND	0.11	0.048	1.00	
t-1,3-Dichloropropene	ND	0.11	0.037	1.00	
Dichlorotetrafluoroethane	ND	0.17	0.12	1.00	
1,1-Difluoroethane	ND	0.68	0.15	1.00	
Ethylbenzene	ND	0.11	0.060	1.00	
4-Ethyltoluene	ND	0.25	0.081	1.00	
Hexachloro-1,3-Butadiene	ND	0.27	0.19	1.00	
Isopropanol	ND	1.2	0.18	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	0.044	1.00	
Methylene Chloride	0.062	0.087	0.016	1.00	J

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

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Analytical Report

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 6 of 6

Parameter	Result	RL	MDL	DF	Qualifiers
Styrene	ND	0.11	0.053	1.00	
1,1,2,2-Tetrachloroethane	ND	0.17	0.084	1.00	
Tetrachloroethene	ND	0.17	0.10	1.00	
Toluene	ND	0.19	0.059	1.00	
1,1,1-Trichloroethane	ND	0.14	0.056	1.00	
1,1,2-Trichloroethane	ND	0.14	0.085	1.00	
Trichloroethene	ND	0.13	0.084	1.00	
Trichlorofluoromethane	ND	0.14	0.058	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.19	0.12	1.00	
1,2,4-Trimethylbenzene	ND	0.25	0.063	1.00	
1,3,5-Trimethylbenzene	ND	0.12	0.077	1.00	
Vinyl Chloride	ND	0.026	0.020	1.00	
o-Xylene	ND	0.11	0.060	1.00	
p/m-Xylene	0.086	0.22	0.054	1.00	J

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	106	37-163	
1,4-Bromofluorobenzene	85	45-153	
Toluene-d8	105	73-121	

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

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Quality Control - LCS/LCSD

AECOM
130 Robin Hill Road, Suite 100
Santa Barbara, CA 93117-3153

Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4

Date Received: 05/11/17
Work Order: 17-05-0828
Preparation: N/A
Method: EPA TO-15 SIM
Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-214-352	**LCS**	**Air**	**GC/MS DD**	**N/A**	**05/11/17 16:15**	**170511L03**
099-15-214-352	**LCSD**	**Air**	**GC/MS DD**	**N/A**	**05/11/17 17:04**	**170511L03**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,2,4-Trichlorobenzene	3.711	3.944	106	3.961	107	50-150	33-167	0	0-30	
Benzene	1.597	1.394	87	1.400	88	27-153	6-174	0	0-34	
Bromodichloromethane	3.350	3.326	99	3.402	102	50-150	33-167	2	0-30	
Bromomethane	1.942	1.782	92	1.994	103	50-150	33-167	11	0-30	
Carbon Tetrachloride	3.146	3.068	98	3.132	100	7-187	0-217	2	0-31	
Chlorobenzene	2.302	1.969	86	2.016	88	50-150	33-167	2	0-30	
Chloroethane	1.319	1.198	91	1.094	83	50-150	33-167	9	0-30	
Chloroform	2.441	2.286	94	2.301	94	50-150	33-167	1	0-30	
Chloromethane	1.033	0.9889	96	0.8093	78	50-150	33-167	20	0-30	
Dibromochloromethane	4.259	4.318	101	4.463	105	50-150	33-167	3	0-30	
1,2-Dibromoethane	3.842	3.503	91	3.666	95	50-150	33-167	5	0-30	
1,2-Dichlorobenzene	3.006	2.887	96	3.058	102	50-150	33-167	6	0-30	
1,3-Dichlorobenzene	3.006	2.902	97	3.062	102	50-150	33-167	5	0-30	
1,4-Dichlorobenzene	3.006	2.912	97	3.051	101	50-150	33-167	5	0-30	
Dichlorodifluoromethane	2.473	2.909	118	2.757	112	50-150	33-167	5	0-30	
1,1-Dichloroethane	2.024	1.829	90	1.831	90	50-150	33-167	0	0-30	
1,2-Dichloroethane	2.024	1.781	88	1.810	89	28-166	5-189	2	0-40	
1,1-Dichloroethene	1.982	1.788	90	1.746	88	50-150	33-167	2	0-30	
c-1,2-Dichloroethene	1.982	1.692	85	1.678	85	35-165	13-187	1	0-35	
t-1,2-Dichloroethene	1.982	1.760	89	1.745	88	50-150	33-167	1	0-30	
1,2-Dichloropropane	2.311	2.033	88	2.064	89	50-150	33-167	2	0-30	
c-1,3-Dichloropropene	2.269	2.047	90	2.068	91	50-150	33-167	1	0-30	
t-1,3-Dichloropropene	2.269	2.177	96	2.189	96	50-150	33-167	1	0-30	
Dichlorotetrafluoroethane	3.495	3.358	96	4.423	127	50-150	33-167	27	0-30	
1,1-Difluoroethane	1.351	1.319	98	1.341	99	50-150	33-167	2	0-30	
Ethylbenzene	2.171	2.182	100	1.942	89	27-153	6-174	12	0-46	
4-Ethyltoluene	2.458	2.395	97	2.501	102	50-150	33-167	4	0-30	
Hexachloro-1,3-Butadiene	5.333	4.414	83	4.419	83	50-150	33-167	0	0-30	
Methyl-t-Butyl Ether (MTBE)	1.803	1.639	91	1.740	97	50-150	33-167	6	0-30	
Methylene Chloride	1.737	1.364	79	1.368	79	50-150	33-167	0	0-30	
Styrene	2.130	2.197	103	1.938	91	50-150	33-167	13	0-30	
1,1,2,2-Tetrachloroethane	3.433	3.136	91	3.243	94	50-150	33-167	3	0-30	
Tetrachloroethene	3.391	3.121	92	3.275	97	34-154	14-174	5	0-33	
Toluene	1.884	1.594	85	1.662	88	28-154	7-175	4	0-42	
1,1,1-Trichloroethane	2.728	2.721	100	2.793	102	50-150	33-167	3	0-30	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 2 of 3

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,1,2-Trichloroethane	2.728	2.418	89	2.456	90	27-171	3-195	2	0-38	
Trichloroethene	2.687	2.339	87	2.334	87	43-139	27-155	0	0-31	
Trichlorofluoromethane	2.809	2.741	98	2.833	101	50-150	33-167	3	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.832	3.627	95	3.647	95	50-150	33-167	1	0-30	
1,2,4-Trimethylbenzene	2.458	2.507	102	2.591	105	50-150	33-167	3	0-30	
1,3,5-Trimethylbenzene	2.458	2.366	96	2.484	101	50-150	33-167	5	0-30	
Vinyl Chloride	1.278	1.228	96	1.152	90	44-140	28-156	6	0-33	
o-Xylene	2.171	2.078	96	2.096	97	22-160	0-183	1	0-48	
p/m-Xylene	4.342	4.255	98	4.076	94	21-165	0-189	4	0-51	

Total number of LCS compounds: 44
Total number of ME compounds: 0
Total number of ME compounds allowed: 2
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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LCS/LCSD - Surrogate

AECOM		Date Received:	05/11/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-0828
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15 SIM
Project: Del Amo Superfund Site, Los Angeles / 60487624.2017.1.2.4			Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-214-352	**LCS**	**Air**	**GC/MS DD**	**N/A**	**05/11/17 16:15**	**170511L03**
099-15-214-352	**LCSD**	**Air**	**GC/MS DD**	**N/A**	**05/11/17 17:04**	**170511L03**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	Qualifiers
1,2-Dichloroethane-d4	2.106	2.148	102	2.187	104	37-163	
1,4-Bromofluorobenzene	3.579	3.817	107	3.957	111	45-153	
Toluene-d8	2.049	1.994	97	1.987	97	73-121	

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RPD: Relative Percent Difference. CL: Control Limits

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Summa Canister Vacuum Summary

Work Order: 17-05-0828

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
AAS00318	-29.50 in Hg	-4.60 in Hg	D843	Summa Canister 6L
AAS00319	-29.50 in Hg	-6.40 in Hg	D327	Summa Canister 6L
VSS01316	-29.50 in Hg	-3.60 in Hg	SLC013	Summa Canister 1L

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Sample Analysis Summary Report

Work Order: 17-05-0828

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA TO-15 SIM	N/A	326	GC/MS DD	2

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Glossary of Terms and Qualifiers

Work Order: 17-05-0828 Page 1 of 1

Qualifiers	Definition
*	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.

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Shell Oil Products US Chain Of Custody Record

AECOM

LAB (LOCATION)

- [ ] ACCUTEST ( )
- [x] CALSCIENCE ( )
- [ ] TESTAMERICA ( )
- [ ] Other ( )

Lab Vendor # 1080777 (CalScience)

Please Check Appropriate Box:

- [x] SGW FDG
- [ ] MOTIVA RETAIL
- [ ] SHELL RETAIL
- [ ] MOTIVA SD&CM
- [ ] CONSULTANT
- [ ] LUBES
- [ ] SHELL PIPELINE
- [ ] OTHER

Print Bill To Contact Name: Julie Doane-Allmon

PlaNet Project ID: IDEA000680

PO #: 962220

GSAP Project ID: USCH/00305

[ ] CHECK IF NO INCIDENT # APPLIES

DATE: 5/10/17

PAGE: 1 of 1

SAMPLING COMPANY: AECOM

LOG CODE:

SITE ADDRESS: Street and City: Del Amo Superfund Site, 20245 S. Vermont Ave., Torrance

State: CA

AECOM Project / Task Number: 60487624.2017.1.2.4

ADDRESS: 130 Robin Hill Road, Suite 100, Santa Barbara CA, 93117

EDF DELIVERABLE TO (Name, Company, Office Location): Steve Cole, AECOM, 300 S. Grand Ave., Ste. 800, LA, CA 90071

PHONE NO.: Direct: 213-996-2398

E-MAIL: steve.j.cole@aecom.com

CONSULTANT PROJECT NO.:

PROJECT CONTACT (Hardcopy or PDF Report to): Julie Doane-Allmon, Erich Weaver

TELEPHONE: 805 692 0618 or 805-692-0648

FAX: 805-964-0259

Bill To Contact E-MAIL: julie.doane-allmon@aecom.com

SAMPLER NAME(S) (Print): Bryan Stempson

LAB USE ONLY: 17-05-0828

TURNAROUND TIME (CALENDAR DAYS):
- [x] STANDARD (14 DAY)
- [ ] 5 DAYS
- [ ] 3 DAYS
- [ ] 2 DAYS
- [ ] 24 HOURS
- [ ] RESULTS NEEDED ON WEEKEND

- [ ] LA - RWQCB REPORT FORMAT
- [ ] UST AGENCY:

DELIVERABLES:
- [ ] LEVEL 1
- [ ] LEVEL 2
- [ ] LEVEL 3
- [x] LEVEL 4
- [ ] OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
Email results to: julie.doane-allmon@aecom.com; erich.weaver@aecom.com; steve.j.cole@aecom.com; jude.francis@aecom.com; and margaret.pittman@aecom.com

- [x] SHELL CONTRACT RATE APPLIES
- [ ] STATE REIMBURSEMENT RATE APPLIES
- [ ] EDD NOT NEEDED
- [x] RECEIPT VERIFICATION REQUESTED
- [ ] PROVIDE LEDD DISK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	(SI LAB-127) VOCs full list + MTBE EPA TO-15 (UNIT COST)	(SI LAB-127) VOCs full list EPA TO-15 SIM (UNIT COST)	Container PID Readings or Laboratory Notes
1	AA S 00318	5/9/17	0834	air						1		X	
2	AAS 00319	5/9/17	0833	air						1		X	
3	VSS01316	5/10/17	1324	air						1	X		

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
B. Stempson	[signature]	5/11/17	0925

Version: 11Dec15

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WORK ORDER NUMBER: 17-05- 0828

SAMPLE RECEIPT CHECKLIST

COOLER 0 OF 0

CLIENT: AECOM

DATE: 05 / 11 / 2017

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

Thermometer ID: SC3 (CF: 0.0°C); Temperature (w/o CF): _____°C (w/ CF): _____°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: 836

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☐ Not Present ☑ N/A Checked by: 836

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 836

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ 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	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ 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	☐	☐	☑

CONTAINER TYPE: **(Trip Blank Lot Number: _____)**

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

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** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 836

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: 30

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WORK ORDER NUMBER: 17-05-2091

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: AECOM

Client Project Name: Del Amo Superfund Site, Los Angeles

Attention: Julie Doane-Allmon
130 Robin Hill Road
Suite 100
Santa Barbara, CA 93117-3153

Vikas Patel

Approved for release on 06/13/2017 by:
Vikas Patel
Project Manager

ResultLink

Email your PM

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Work Order Number: 17-05-2091

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Work Order Narrative

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 05/26/17. They were assigned to Work Order 17-05-2091.

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.

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Sample Summary

Client:	AECOM 130 Robin Hill Road, Suite 100 Santa Barbara, CA 93117-3153	Work Order:	17-05-2091
		Project Name:	Del Amo Superfund Site, Los Angeles
		PO Number:	
		Date/Time Received:	05/26/17 16:40
		Number of Containers:	2
Attn:	Julie Doane-Allmon		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
VSS01317	17-05-2091-1	05/26/17 09:34	1	Air
VSS01318	17-05-2091-2	05/26/17 10:31	1	Air

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QC Association Summary

Work Order: 17-05-2091

Client Sample ID	Method Name	Type	Ext Name	Instrument	MS/MSD/SDP	LCS/LCSD
VSS01317	EPA TO-15 Full List		N/A	GC/MS AA	*2	170531L01
VSS01318	EPA TO-15 Full List		N/A	GC/MS AA	*2	170531L01
VSS01318	EPA TO-15 Full List	R	N/A	GC/MS AA	*1	170531L01

1 = Dilution analysis performed, no associated matrix QC

2 = Limited sample received, no MS/MSD performed

R = Rerun

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Detections Summary

Client:	AECOM	Work Order:	17-05-2091
	130 Robin Hill Road, Suite 100	Project Name:	Del Amo Superfund Site, Los Angeles
	Santa Barbara, CA 93117-3153	Received:	05/26/17
Attn:	Julie Doane-Allmon		Page 1 of 2

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
VSS01317 (17-05-2091-1)						
Acetone	32		4.8	ug/m3	EPA TO-15	N/A
Benzene	4.0		1.6	ug/m3	EPA TO-15	N/A
Carbon Disulfide	12		6.2	ug/m3	EPA TO-15	N/A
Chloroform	1.5	J	0.52*	ug/m3	EPA TO-15	N/A
Chloromethane	1.0		1.0	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	2.9		2.5	ug/m3	EPA TO-15	N/A
1,1-Dichloroethane	0.63	J	0.39*	ug/m3	EPA TO-15	N/A
Ethylbenzene	6.8		2.2	ug/m3	EPA TO-15	N/A
4-Ethyltoluene	4.5		2.5	ug/m3	EPA TO-15	N/A
Isopropanol	3.4	J	2.6*	ug/m3	EPA TO-15	N/A
Tetrachloroethene	280		3.4	ug/m3	EPA TO-15	N/A
Toluene	32		1.9	ug/m3	EPA TO-15	N/A
1,1,1-Trichloroethane	1.4	J	0.61*	ug/m3	EPA TO-15	N/A
Trichloroethene	34		2.7	ug/m3	EPA TO-15	N/A
1,2,4-Trimethylbenzene	15		7.4	ug/m3	EPA TO-15	N/A
1,3,5-Trimethylbenzene	4.1		2.5	ug/m3	EPA TO-15	N/A
o-Xylene	9.3		2.2	ug/m3	EPA TO-15	N/A
p/m-Xylene	25		8.7	ug/m3	EPA TO-15	N/A
VSS01318 (17-05-2091-2)						
Acetone	43		4.8	ug/m3	EPA TO-15	N/A
Benzene	1.7		1.6	ug/m3	EPA TO-15	N/A
Carbon Disulfide	9.0		6.2	ug/m3	EPA TO-15	N/A
Chloroform	13		2.4	ug/m3	EPA TO-15	N/A
Dichlorodifluoromethane	2.4	J	1.0*	ug/m3	EPA TO-15	N/A
c-1,2-Dichloroethene	3.8		2.0	ug/m3	EPA TO-15	N/A
Ethylbenzene	7.0		2.2	ug/m3	EPA TO-15	N/A
4-Ethyltoluene	7.0		2.5	ug/m3	EPA TO-15	N/A
Isopropanol	2.8	J	2.6*	ug/m3	EPA TO-15	N/A
Tetrachloroethene	1700		34	ug/m3	EPA TO-15	N/A
Toluene	21		1.9	ug/m3	EPA TO-15	N/A
Trichloroethene	300		2.7	ug/m3	EPA TO-15	N/A
1,2,4-Trimethylbenzene	23		7.4	ug/m3	EPA TO-15	N/A
1,3,5-Trimethylbenzene	5.5		2.5	ug/m3	EPA TO-15	N/A
o-Xylene	12		2.2	ug/m3	EPA TO-15	N/A
p/m-Xylene	33		8.7	ug/m3	EPA TO-15	N/A

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* MDL is shown

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Detections Summary

Client:	AECOM	Work Order:	17-05-2091
	130 Robin Hill Road, Suite 100	Project Name:	Del Amo Superfund Site, Los Angeles
	Santa Barbara, CA 93117-3153	Received:	05/26/17
Attn:	Julie Doane-Allmon		Page 2 of 2

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles			Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01317	**17-05-2091-1-A**	**05/26/17 09:34**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 15:28**	**170531L01**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	32	4.8	2.6	1.00	
Benzene	4.0	1.6	0.27	1.00	
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	ND	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	12	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	1.5	2.4	0.52	1.00	J
Chloromethane	1.0	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	2.9	2.5	1.0	1.00	
1,1-Dichloroethane	0.63	2.0	0.39	1.00	J
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	6.8	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles			Page 2 of 6

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	4.5	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	3.4	12	2.6	1.00	J
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	280	3.4	0.74	1.00	
Toluene	32	1.9	1.4	1.00	
1,1,1-Trichloroethane	1.4	2.7	0.61	1.00	J
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	34	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	15	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	4.1	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	9.3	2.2	1.4	1.00	
p/m-Xylene	25	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	115	68-134	
1,2-Dichloroethane-d4	120	67-133	
Toluene-d8	98	70-130	

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

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Analytical Report

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles			Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01318	**17-05-2091-2-A**	**05/26/17 10:31**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 16:19**	**170531L01**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	43	4.8	2.6	1.00	
Benzene	1.7	1.6	0.27	1.00	
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	ND	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	9.0	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	13	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	2.4	2.5	1.0	1.00	J
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	3.8	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	7.0	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles			Page 4 of 6

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	7.0	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	2.8	12	2.6	1.00	J
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Toluene	21	1.9	1.4	1.00	
1,1,1-Trichloroethane	ND	2.7	0.61	1.00	
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	300	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	23	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	5.5	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	12	2.2	1.4	1.00	
p/m-Xylene	33	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	109	68-134	
1,2-Dichloroethane-d4	120	67-133	
Toluene-d8	97	70-130	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VSS01318	**17-05-2091-2-A**	**05/26/17 10:31**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 17:09**	**170531L01**

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

Parameter	Result	RL	MDL	DF	Qualifiers
Tetrachloroethene	1700	34	7.4	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	105	68-134	
1,2-Dichloroethane-d4	113	67-133	
Toluene-d8	97	70-130	

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

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Analytical Report

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles			Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-021-18600**	**N/A**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 13:45**	**170531L01**

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

Parameter	Result	RL	MDL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	15	11	1.00	
Acetone	ND	4.8	2.6	1.00	
Benzene	ND	1.6	0.27	1.00	
Benzyl Chloride	ND	7.8	2.4	1.00	
Bromodichloromethane	ND	3.4	0.63	1.00	
Bromoform	ND	5.2	3.1	1.00	
Bromomethane	ND	1.9	1.0	1.00	
2-Butanone	ND	4.4	2.1	1.00	
n-Butylbenzene	ND	2.7	1.8	1.00	
sec-Butylbenzene	ND	2.7	1.4	1.00	
tert-Butylbenzene	ND	2.7	1.4	1.00	
Carbon Disulfide	ND	6.2	2.3	1.00	
Carbon Tetrachloride	ND	3.1	0.61	1.00	
Chlorobenzene	ND	2.3	0.46	1.00	
Chloroethane	ND	1.3	0.86	1.00	
Chloroform	ND	2.4	0.52	1.00	
Chloromethane	ND	1.0	0.30	1.00	
Dibromochloromethane	ND	4.3	0.96	1.00	
1,2-Dibromoethane	ND	3.8	1.2	1.00	
1,2-Dichlorobenzene	ND	3.0	1.7	1.00	
1,3-Dichlorobenzene	ND	3.0	1.8	1.00	
1,4-Dichlorobenzene	ND	3.0	1.7	1.00	
Dichlorodifluoromethane	ND	2.5	1.0	1.00	
1,1-Dichloroethane	ND	2.0	0.39	1.00	
1,2-Dichloroethane	ND	2.0	0.54	1.00	
1,1-Dichloroethene	ND	2.0	0.36	1.00	
c-1,2-Dichloroethene	ND	2.0	1.1	1.00	
t-1,2-Dichloroethene	ND	2.0	0.95	1.00	
1,2-Dichloropropane	ND	2.3	0.38	1.00	
c-1,3-Dichloropropene	ND	2.3	1.2	1.00	
t-1,3-Dichloropropene	ND	4.5	1.1	1.00	
Dichlorotetrafluoroethane	ND	14	5.9	1.00	
1,1-Difluoroethane	ND	5.4	2.9	1.00	
Ethylbenzene	ND	2.2	1.7	1.00	

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

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Analytical Report

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
		Units:	ug/m3
Project: Del Amo Superfund Site, Los Angeles			Page 6 of 6

Parameter	Result	RL	MDL	DF	Qualifiers
4-Ethyltoluene	ND	2.5	1.6	1.00	
Hexachloro-1,3-Butadiene	ND	16	13	1.00	
2-Hexanone	ND	6.1	3.3	1.00	
Isopropanol	ND	12	2.6	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	2.4	1.00	
Methylene Chloride	ND	17	3.8	1.00	
4-Methyl-2-Pentanone	ND	6.1	4.1	1.00	
Styrene	ND	6.4	1.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	2.7	1.00	
Tetrachloroethene	ND	3.4	0.74	1.00	
Toluene	ND	1.9	1.4	1.00	
1,1,1-Trichloroethane	ND	2.7	0.61	1.00	
1,1,2-Trichloroethane	ND	2.7	0.63	1.00	
Trichloroethene	ND	2.7	0.61	1.00	
Trichlorofluoromethane	ND	5.6	4.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	4.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	5.0	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.8	1.00	
Vinyl Acetate	ND	7.0	3.6	1.00	
Vinyl Chloride	ND	1.3	0.35	1.00	
o-Xylene	ND	2.2	1.4	1.00	
p/m-Xylene	ND	8.7	3.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	102	68-134	
1,2-Dichloroethane-d4	111	67-133	
Toluene-d8	97	70-130	

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

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Quality Control - LCS/LCSD

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles			Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18600	**LCS**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 11:18**	**170531L01**
095-01-021-18600	**LCSD**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 12:07**	**170531L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,2,4-Trichlorobenzene	185.5	203.0	109	202.6	109	31-151	11-171	0	0-30	
Acetone	59.39	70.42	119	66.44	112	67-133	56-144	6	0-30	
Benzene	79.87	82.24	103	91.22	114	70-130	60-140	10	0-30	
Benzyl Chloride	129.4	132.5	102	132.5	102	38-158	18-178	0	0-30	
Bromodichloromethane	167.5	183.4	109	185.8	111	70-130	60-140	1	0-30	
Bromoform	258.4	254.7	99	253.0	98	63-147	49-161	1	0-30	
Bromomethane	97.08	98.88	102	97.65	101	70-139	58-150	1	0-30	
2-Butanone	73.73	84.03	114	83.50	113	66-132	55-143	1	0-30	
n-Butylbenzene	137.2	140.5	102	137.2	100	50-150	33-167	2	0-30	
sec-Butylbenzene	137.2	129.3	94	129.1	94	50-150	33-167	0	0-30	
tert-Butylbenzene	137.2	123.8	90	115.4	84	50-150	33-167	7	0-30	
Carbon Disulfide	77.85	89.65	115	89.96	116	68-146	55-159	0	0-30	
Carbon Tetrachloride	157.3	164.2	104	172.3	110	70-136	59-147	5	0-30	
Chlorobenzene	115.1	108.6	94	109.3	95	70-130	60-140	1	0-30	
Chloroethane	65.96	71.10	108	65.78	100	65-149	51-163	8	0-30	
Chloroform	122.1	134.1	110	132.8	109	70-130	60-140	1	0-30	
Chloromethane	51.63	50.03	97	50.49	98	69-141	57-153	1	0-30	
Dibromochloromethane	213.0	198.8	93	192.9	91	70-138	59-149	3	0-30	
1,2-Dibromoethane	192.1	191.0	99	186.6	97	70-133	60-144	2	0-30	
1,2-Dichlorobenzene	150.3	145.3	97	131.7	88	48-138	33-153	10	0-30	
1,3-Dichlorobenzene	150.3	137.7	92	136.4	91	56-134	43-147	1	0-30	
1,4-Dichlorobenzene	150.3	138.8	92	138.5	92	52-136	38-150	0	0-30	
Dichlorodifluoromethane	123.6	131.5	106	129.7	105	67-139	55-151	1	0-30	
1,1-Dichloroethane	101.2	107.4	106	106.2	105	70-130	60-140	1	0-30	
1,2-Dichloroethane	101.2	115.0	114	115.3	114	70-132	60-142	0	0-30	
1,1-Dichloroethene	99.12	111.9	113	111.3	112	70-135	59-146	1	0-30	
c-1,2-Dichloroethene	99.12	105.8	107	106.7	108	70-130	60-140	1	0-30	
t-1,2-Dichloroethene	99.12	104.5	105	107.8	109	70-130	60-140	3	0-30	
1,2-Dichloropropane	115.5	111.7	97	119.8	104	70-130	60-140	7	0-30	
c-1,3-Dichloropropene	113.5	129.3	114	133.5	118	70-130	60-140	3	0-30	
t-1,3-Dichloropropene	113.5	139.9	123	141.8	125	70-147	57-160	1	0-30	
Dichlorotetrafluoroethane	174.8	191.8	110	191.3	109	51-135	37-149	0	0-30	
1,1-Difluoroethane	67.54	71.67	106	69.84	103	70-131	60-141	3	0-30	
Ethylbenzene	108.6	108.4	100	105.4	97	70-130	60-140	3	0-30	
4-Ethyltoluene	122.9	128.2	104	122.0	99	68-130	58-140	5	0-30	
Hexachloro-1,3-Butadiene	266.6	258.6	97	260.1	98	44-146	27-163	1	0-30	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles			Page 2 of 3

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2-Hexanone	102.4	105.1	103	100.9	99	70-136	59-147	4	0-30	
Isopropanol	61.45	67.54	110	62.67	102	57-135	44-148	7	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	100.5	111	102.1	113	68-130	58-140	2	0-30	
Methylene Chloride	86.84	99.54	115	96.71	111	69-130	59-140	3	0-30	
4-Methyl-2-Pentanone	102.4	110.9	108	111.1	108	70-130	60-140	0	0-30	
Styrene	106.5	109.6	103	106.4	100	65-131	54-142	3	0-30	
1,1,2,2-Tetrachloroethane	171.6	164.4	96	157.0	91	63-130	52-141	5	0-30	
Tetrachloroethene	169.6	152.6	90	149.7	88	70-130	60-140	2	0-30	
Toluene	94.21	96.33	102	87.85	93	70-130	60-140	9	0-30	
1,1,1-Trichloroethane	136.4	146.2	107	148.4	109	70-130	60-140	2	0-30	
1,1,2-Trichloroethane	136.4	148.7	109	148.8	109	70-130	60-140	0	0-30	
Trichloroethene	134.3	141.0	105	141.7	105	70-130	60-140	0	0-30	
Trichlorofluoromethane	140.5	159.9	114	160.4	114	63-141	50-154	0	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	219.6	115	224.0	117	70-136	59-147	2	0-30	
1,2,4-Trimethylbenzene	122.9	120.9	98	116.1	94	60-132	48-144	4	0-30	
1,3,5-Trimethylbenzene	122.9	123.3	100	118.8	97	62-130	51-141	4	0-30	
Vinyl Acetate	88.03	93.51	106	88.10	100	58-130	46-142	6	0-30	
Vinyl Chloride	63.91	64.91	102	65.43	102	70-134	59-145	1	0-30	
o-Xylene	108.6	105.4	97	101.0	93	69-130	59-140	4	0-30	
p/m-Xylene	217.1	212.1	98	206.9	95	70-132	60-142	3	0-30	

Total number of LCS compounds: 56
Total number of ME compounds: 0
Total number of ME compounds allowed: 3
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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LCS/LCSD - Surrogate

AECOM		Date Received:	05/26/17
130 Robin Hill Road, Suite 100		Work Order:	17-05-2091
Santa Barbara, CA 93117-3153		Preparation:	N/A
		Method:	EPA TO-15
Project: Del Amo Superfund Site, Los Angeles			Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-18600	**LCS**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 11:18**	**170531L01**
095-01-021-18600	**LCSD**	**Air**	**GC/MS AA**	**N/A**	**05/31/17 12:07**	**170531L01**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	Qualifiers
1,4-Bromofluorobenzene	178.9	179.7	100	168.0	94	68-134	
1,2-Dichloroethane-d4	105.3	117.1	111	118.2	112	67-133	
Toluene-d8	102.4	103.5	101	100.0	98	70-130	

RPD: Relative Percent Difference. CL: Control Limits

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Summa Canister Vacuum Summary

Work Order: 17-05-2091

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
VSS01317	-29.50 in Hg	-2.60 in Hg	LC120	Summa Canister 1L
VSS01318	-29.50 in Hg	-3.40 in Hg	LC790	Summa Canister 1L

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Sample Analysis Summary Report

Work Order: 17-05-2091

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA TO-15	N/A	953	GC/MS AA	2

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Glossary of Terms and Qualifiers

Work Order: 17-05-2091 Page 1 of 1

Qualifiers	Definition
*	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.

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Shell Oil Products US Chain Of Custody Record

AECOM

LAB (LOCATION)
- [ ] ACCUTEST ( )
- [x] CALSCIENCE ( )
- [ ] TESTAMERICA ( )
- [ ] Other ( )

Lab Vendor # 1080777 (CalScience)

Please Check Appropriate Box:
- [x] SGW FDG
- [ ] MOTIVA RETAIL
- [ ] SHELL RETAIL
- [ ] MOTIVA SD&CM
- [ ] CONSULTANT
- [ ] LUBES
- [ ] SHELL PIPELINE
- [ ] OTHER

Print Bill To Contact Name: Julie Doane-Allmon

PlaNet Project ID: IDEA000680

PO #: 962220

GSAP Project ID: USCH/00305

[ ] CHECK IF NO INCIDENT # APPLIES

DATE: 5/26/17

PAGE: 1 of 1

SAMPLING COMPANY: AECOM

LOG CODE:

SITE ADDRESS: Street and City: Del Amo Superfund Site, 20245 S. Vermont Ave., Torrance

State: CA

AECOM Project / Task Number: 60487624.2017.1.2.4

ADDRESS: 130 Robin Hill Road, Suite 100, Santa Barbara CA, 93117

EDF DELIVERABLE TO (Name, Company, Office Location): Steve Cole, AECOM, 300 S. Grand Ave., Ste. 800, LA, CA 90071

PHONE NO.: Direct: 213-996-2398

E-MAIL: steve.j.cole@aecom.com

CONSULTANT PROJECT NO.:

PROJECT CONTACT (Hardcopy or PDF Report to): Julie Doane-Allmon, Erich Weaver

SAMPLER NAME(S) (Print):

LA USE ONLY: 17-05-2091

TELEPHONE: 805 692 0618 or 805-692-0648

FAX: 805-964-0259

Bill To Contact E-MAIL: julie.doane-allmon@aecom.com

TURNAROUND TIME (CALENDAR DAYS):
- [x] STANDARD (14 DAY)
- [ ] 5 DAYS
- [ ] 3 DAYS
- [ ] 2 DAYS
- [ ] 24 HOURS
- [ ] RESULTS NEEDED ON WEEKEND

- [ ] LA - RWQCB REPORT FORMAT
- [ ] UST AGENCY:

DELIVERABLES: [ ] LEVEL 1 [ ] LEVEL 2 [ ] LEVEL 3 [x] LEVEL 4 [ ] OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C°: Cooler #1 | Cooler #2 | Cooler #3

SPECIAL INSTRUCTIONS OR NOTES :
Email results to: julie.doane-allmon@aecom.com; erich.weaver@aecom.com; steve.j.cole@aecom.com; jude.francis@aecom.com; and margaret.pittman@aecom.com

- [x] SHELL CONTRACT RATE APPLIES
- [ ] STATE REIMBURSEMENT RATE APPLIES
- [ ] EDD NOT NEEDED
- [x] RECEIPT VERIFICATION REQUESTED
- [ ] PROVIDE LEDD DISK

REQUESTED ANALYSIS

UNIT COST: (St LAB-127) VOCs full list + MTBE EPA TO-15; (St LAB-127) VOCs full list EPA TO-15 SIM

NON-UNIT COST

FIELD NOTES:

TEMPERATURE ON RECEIPT C°

Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	(St LAB-127) VOCs full list + MTBE EPA TO-15	(St LAB-127) VOCs full list EPA TO-15 SIM
1	VSS01317	5/26	930-934	AIR				X		1	X	
2	VSS01318	5/26	1020-1031	AIR				X		1	X	

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	[signature]	5/26/17	1135
[signature]	[signature]	5/26/17	1640

Version: 11Dec15

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WORK ORDER NUMBER: 17-05- 2091

SAMPLE RECEIPT CHECKLIST

COOLER 0 OF 0

CLIENT: AECOM

DATE: 05 / 26 / 2017

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

Thermometer ID: SC3 (CF: 0.0°C); Temperature (w/o CF): _____°C (w/ CF): _____°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: 676

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☐ Not Present	☑ N/A	Checked by: 676
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 300

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ 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	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ 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	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

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** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, Labeled/Checked by: 300

s = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4$.H_2O, **znna** = Zn $(CH_3CO_2)_2$ + NaOH Reviewed by: 836

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