

APPENDIX K

Limited Phase II Environmental Site Assessment

DRAFT LIMITED PHASE II ENVIRONMENTAL
SITE ASSESSMENT
PROPOSED NORTH COAST HIGHWAY APARTMENTS
939 & 1009 N. COAST HIGHWAY
OCEANSIDE, CALIFORNIA 92054

Prepared For:

WP WEST ACQUISITION, LLC
c/o WOOD PARTNERS
7700 Irvine Center Drive, Suite 600
Irvine, California 92618

Project No. 12107.002

August 23, 2018



Leighton and Associates, Inc.

A LEIGHTON GROUP COMPANY



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WP West Acquisitions, LLC
c/o Wood Partners
7700 Irvine Center Road, Suite 600
Irvine, California 92618

Attention: Mr. Joshua Hanna

**Subject: DRAFT Limited Phase II Environmental Site Assessment
Proposed North Coast Highway Apartments
939 & 1009 N. Coast Highway
Oceanside, California 92054**

INTRODUCTION

Leighton and Associates, Inc. (Leighton) performed a Limited Phase II Environmental Site Assessment (ESA) for the proposed North Coast Highway Apartments Development located at 939 & 1009 N Coast Highway in the Oceanside, California (Figure 1, Site Location Map). The scope of work for the limited Phase II ESA investigation was based on the findings of the previous Phase I ESA (Leighton, 2013) prepared for the northern portion of the subject site. Based on a review of the Phase I ESA report, vapor intrusion from historical operations associated with gas station in the western portion of the subject site was identified as a potential recognized environmental condition (REC). Additionally, soil samples were collected during the construction of the soil vapor borings in order to evaluate potential impacts associated with the former Under Ground Storage Tanks (USTs) and historic operations at the site.

The purpose of this Limited Phase II ESA is to determine if soil vapor from the historical operations associated with gas station has impacted the subject site and to evaluate potential soil impacts associated with the former USTs and historic operations at the site.

SCOPE OF WORK

Our scope of work included the following:

- Construction of four dual-nested soil vapor probe borings (SPV-1 through SPV-4) to a total depth of up to 15 feet below ground surface (bgs);
- Collection of nine soil samples and nine soil vapor samples from the subject site for chemical analysis;
- Preparation of this report summarizing our findings and providing conclusions and recommendations, including tables, illustrations, and appendices.

PRE-FIELD ACTIVITIES

Utility Clearance

Underground Service Alert (USA) was contacted prior to the commencement of fieldwork to identify and mark underground utility locations. Each proposed boring location was clearly marked in white paint prior to contacting USA.

Health and Safety Plan

In accordance with standard environmental procedures, Leighton prepared a Health and Safety Plan (HSP) for the subject site to include safety aspects of the work to be performed during the Phase II ESA. The HSP was prepared in general compliance with the Occupational Safety and Health and Administration (OSHA) regulation 29 CFR 1910.120. The HSP was onsite with Leighton personnel at all times. This HSP outlined site procedures, potential hazards, and contained a hospital location map. All onsite personnel signed the HSP acknowledging their understanding and acceptance of the document.



FIELD ACTIVITIES

Soil Sample Collection

On August 13, 2018, 4 direct push soil vapor probe borings were excavated in areas of the Site. Soil samples were collected from within artificial fill soils and below the fill-native soil contact in each of the 4 direct push borings. The locations of the borings were based on findings of the previous Phase I ESA (Leighton, 2013) prepared for the northwestern portion of the subject site. In addition, soil samples were collected at select depths during soil vapor probe boring advancement. The location of the soil vapor borings is depicted on Figure 2.

Each soil sample collected was placed in an ice-cooled chest for temporary storage and transported to a State of California Certified laboratory (Eurofins Calscience, Garden Grove, California) for selected chemical analyses with a completed chain-of-custody.

Soil Vapor Probe Installation and Sampling

On August 13, 2018, Leighton directed the advancement of four soil vapor borings with a direct push drill rig operated by Millennium Environmental, Inc., a state of California licensed driller. The dual-nested soil vapor probes were installed at 5 feet and 10 to 15 feet bgs in each boring.

Soil vapor sampling was performed utilizing a direct push rig by advancing each boring to a total depth ranging from 10 to 15 feet bgs. The 2-inch steel rod was then removed and the soil vapor probe tubing (nylon), with a small filter attached to the end, was inserted into the open borehole with the aid of 1-inch PVC pipe. Once the desired bottom depth was attained the probe tubing was gently lifted up approximately 3-inches and sand was poured down the borehole to encase the filter with 1-foot of sand pack. Approximately, 6-inches of dry granular bentonite was then added above the sand pack to prevent moisture from infiltrating the sand pack. The borehole was then backfilled to the next sampling depth (5 feet bgs) using hydrated bentonite as the PVC pipe was withdrawn. The same procedure was completed at the 5' depth as used at the deeper sampling depth and the remainder of the borehole was then backfilled to the surface with hydrated bentonite.

Leighton directed the collection and analyses of soil vapor samples at the Site by H & P Mobile Geochemistry (H&P) of Carlsbad, California, a State of California Certified



Analytical Laboratory, California. A total of nine soil vapor samples were collected from the four dual-nested soil vapor probes installed at the Site (including field replicate). Following a 120-minute equilibrium period, soil vapor samples were collected in laboratory provided glass syringes and analyzed onsite by a State of California Certified mobile laboratory (H & P). A tracer compound, 1,1-DFA, was used to test for leaks around the tubing at the ground surface and in the sampling system. The tracer was placed at the ground surface near the top of the sampling tube during sample collection. The absence of the tracer compound in the subsurface soil vapor samples was used as indication that there was no ambient air intrusion during the sample collection activities. The standard three purge volume of soil vapor was purged from the tubing and sand pack prior to sample collection.

After sampling soil vapor, the probe tubing was pulled from the ground and the borings were backfilled with bentonite chips and capped with asphalt to match the existing surface.

Soil Vapor Laboratory Analysis

A total of nine soil vapor samples were analyzed for the tracer gas (1,1-DFA) and volatile organic compounds (VOCs) by Modified EPA Method 8260B. The laboratory analytical report is included as Appendix B.

Soil Laboratory Analysis

A total of nine soil samples were collected and analyzed for Total Lead by EPA Method 6010, and total petroleum hydrocarbons (TPH) by EPA Method 8015. The laboratory analytical report for the soil samples is included as Appendix C.

ANALYTICAL RESULTS

Soil Vapor Analytical Results

- Benzene was detected in two of the nine soil vapor samples collected at concentrations ranging from 0.10 µg/L (SV3-5) to 0.14 µg/L (SV3-15). The detected concentrations of benzene are above the DTSC Screening Levels (DTSC-SL) for residential air of 0.097 µg/L (DTSC HERO, 2018).
- Styrene was detected in two of the nine soil vapor samples collected at concentrations ranging from 0.84 µg/L (SV1-5) to 0.68 µg/L (SV1-5 Rep). The



detected concentrations of styrene are below the USEPA Region 9 Regional Screening Levels for residential air (RSL-R) of 1,000 µg/L (EPA, 2018).

No other VOCs were detected above the laboratory reporting limit in the nine soil vapor samples analyzed. The DTSC default attenuation factor of 0.001 was applied to all indoor air screening levels in this analysis (DTSC, 2012).

A summary of the soil vapor analytical results is presented in Table 1 and the probe locations are depicted on Figure 2. The laboratory report of the soil vapor data is attached in Appendix B.

Soil Analytical Results

The results of the laboratory analysis of the soil samples collected at the Site are summarized as follows:

- TPH was not detected above the laboratory reporting limits in any of the nine soil samples collected.
- Lead concentrations were consistent with background concentrations for southern California and were all below the DTSC-SL for residential soil of 80 mg/kg.

A summary of the soil analytical results is presented in Table 2 and the sample locations are depicted on Figure 2. The laboratory report of the soil data is attached in Appendix C.

DISCUSSION

Soil Vapor - Human Health Risk Assessment

Using the Department of Toxic Substances Control's (DTSC) Screening-Level Model for Soil Gas Contamination (December 2014), Leighton calculated the indoor vapor intrusion risk from the chemicals of concern (CoCs) detected at the Site. The risk was calculated considering exposure to an adult resident of the proposed structure under a residential vapor risk exposure scenario. The vapor risk assessment was performed for the following VOCs that were detected in the soil vapor samples collected on August 13, 2018: benzene and styrene.



Assumptions:

- The highest benzene (0.14 µg/L) and styrene (0.84 µg/L) concentrations reported were estimated to be present below the proposed structures.
- There is 5 inches (12.7 cm) of concrete floor separating the proposed structure from the area impacted by soil vapor.
- A residential adult exposure scenario was used in which an adult inhabits the structure for 24 hours/day, 350 days/year for 26 years.
- The standard air exchange rate of 0.5 exchanges per hour was used in this analysis.
- Both carcinogenic and non-carcinogenic health risks were estimated. The DEH criterion used in this human health risk assessment is one in a million (1.0E-06). Non-carcinogenic toxicity is estimated by comparing the estimated dose to the dose required to trigger chronic toxicity. A value exceeding 1.0 is considered significant.

The estimated cancer risk from the human risk assessment is:

- 1.0E-09 for Benzene in soil vapor; and
- No slope factor for styrene in soil vapor.

The total cumulative cancer risk of 1.0E-09 (i.e., excess lifetime cancer risk of 1.0 in a population of 100,000,000), which is less than the DEH criterion of 1.0E-06 (or excess lifetime cancer risk of 1 in a 1,000,000 population). Hence, the calculated cumulative carcinogenic risk from potential indoor vapor intrusion is within the acceptable range.

The calculated hazard index (HI) is:

- 3.1E-05 for Benzene in soil vapor; and
- 1.1E-06 for styrene in soil vapor.

The cumulative non-carcinogenic hazard index was calculated to be 0.0000321 (3.21E-05), which was significantly lower than the DEH criterion of 1.0. Based upon the calculated values, it appears no significant hazard is posed to the Site occupants (i.e. apartment residents) due to potential indoor vapor intrusion under the assumed conditions.

The human health risk calculation print outs are included in Appendix D.



CONCLUSIONS AND RECOMMENDATIONS

The laboratory analytical results for the soil vapor samples obtained were compared to the USEPA Region 9 Regional Screening Levels for residential air (RSL-Rs) and Department of Toxic Substances Controls residential air screening levels (DTSC-SLs), as applicable. An attenuation factor of 0.001 was applied to RSL-Rs and DTSC-SLs to account for the ratio between the indoor air concentration and the measured soil gas concentration (DTSC, 2012). Based on the concentrations of the COCs present in the subsurface at the Site further evaluation was deemed necessary.

Leighton conducted a risk assessment utilizing DTSC's Screening-Level Model for Soil Gas Contamination (December 2014). Based on the results of the risk assessment, the total cumulative cancer risk is $1.0\text{E}-09$ and the total cumulative non-carcinogenic risk of $3.21\text{E}-05$. The results indicate that the cumulative cancer risk is below the DEH criterion of $1.0\text{E}-06$, and the total cumulative non-carcinogenic risk is less than the DEH criterion of 1.0, therefore there is a low likelihood of carcinogenic and non-carcinogenic risk due to VOC vapors at the proposed residential development from the concentrations of chemicals detected during this investigation.

The results of the vapor risk assessment determined that no significant cancer risks or non-cancer hazards are anticipated due to the concentrations of chemicals detected during this investigation, therefore no additional engineering controls are recommended to mitigate impacts from soil vapor.

Based upon the results of this Phase II ESA, soils at the Site appear suitable for the proposed residential development. Therefore, Leighton recommends no further assessment of the Site at this time.

LIMITATIONS

This investigation was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions.

The observations and conclusions presented in this report are professional opinions based on the scope of activities, work schedule, and information obtained through the activities described herein, and are limited to the portion of the Site investigated. Opinions presented herein apply to property conditions existing at the time of our study



and cannot necessarily be taken to apply to property conditions outside of the area investigated or changes that we are not aware of or have not had the opportunity to evaluate. It must be recognized that conclusions drawn from these data are limited to the portion of the Site investigated, and the amount, type, distribution, and integrity of the information collected at the time of the investigation, and the methods utilized to collect and evaluate the data. Although Leighton has taken steps to obtain true copies of available information, we make no representation or warranty with respect to the accuracy or completeness of the information provided by others.

In general, observations should be made during future property development for areas of possible contamination such as, but not limited to, the presence of underground structures, buried debris, waste drums and tanks, stained soil or odorous soils. Should such materials be encountered, further investigation and analysis may be necessary at that time.



CLOSING

If you have any questions, concerns or comments on this report, please contact our office. We appreciate this opportunity to be of service.

Respectfully submitted,

LEIGHTON AND ASSOCIATES, INC.

DRAFT

Bryan Voss, PG
Senior Project Geologist

BCP/BEV

Attachments: Table 1 – Summary of Soil Vapor Analytical Results
Table 2 – Summary of Soil Analytical Results – TPH and Lead

Figure 1 – Site Location Map

Figure 2 – Site Plan with Soil and Soil Vapor Survey Locations

Appendix A – References

Appendix B – Soil Vapor Sample Analytical Report

Appendix C – Soil Sample Analytical Report

Appendix D – SDDEH Vapor Risk Model Datasheets

Distribution: (1) electronic



FIGURES



SITE LOCATION MAP

North Coast Apartments
Oceanside, California

Figure 1



Leighton

Project: 11427.002 Eng/Geol: WDO/BEV

Scale: 1" = 2,000' Date: August 2018

Base Map: Bing Maps 2018
Thematic Information: Leighton
Author: Leighton Geomatics (mmurphy)



Legend

SVP-4 Approximate Soil/Vapor Gas Sample Location

Approximate Site Boundary

0.14 Concentrations in excess of DTSC HERO Note 3

ND Not Detected above Laboratory Reporting Limits

All concentrations in micrograms per Liter ($\mu\text{g}/\text{m}^3$)

SVP-3

Depth	Benzene
5'	0.10
15'	0.14

SVP-1

Depth	Styrene
5'	0.84
13'	ND

SVP-2

Depth	Benzene
5'	ND
10'	ND

SVP-4

Depth	Benzene
5'	ND
15'	ND

North arrow pointing up with 'N' label.

Scale bar: 0, 60, 120 Feet.

Project: 12107.002	Eng/Geol: WDO/BEV
Scale: 1 " = 60 '	Date: August 2018
Base Map: Bing Maps, 2016 2018 Thematic Information: Leighton Author: (mmurphy)	

SITE PLAN
North Coast Apartments
Oceanside, California

Figure 2

Leighton

APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

ASTM International (ASTM), 2011, Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, Designation E1903-11, dated October 18.

California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO), 2015, Human Health Risk Assessment (HHRA) Note Number 3, DTSC-modified Screening Levels (DTSC-SLs), updated February 2018.

California Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA), 2010, List of California Human Health Screening Levels, <http://oehha.ca.gov/risk/chhsltable.html>, dated September 23.

California Regional Water Quality Control Board – Los Angeles Region (LARWQCB), 1996, Interim Site Assessment and Cleanup Guidebook, dated May 1996.

California Regional Water Quality Control Board – San Diego Region (SDRWQCB), 1994, Water Quality Control Plan for the San Diego Basin (9), dated September 8, 1994.

California Regional Water Quality Control Board – San Francisco Bay Region (SFRWQCB), 2016, Environmental Screening Levels (ESLs) Summary Tables, Revision 3, dated February 22.

County of San Diego Department of Environmental Health (SDDEH), 1999, Site Assessment and Mitigation Vapor Risk Assessment Model, revised July 29, 2010.

Department of Toxic Substances Control, California Regional Water Quality Control Board Los Angeles Region, California Regional Water Quality Control Board San Francisco Region, *Advisory-Active Soil Gas Investigations*, July 2015.

APPENDIX A (continued)

Leighton and Associates, Inc., 2013, Phase I Environmental Site Assessment Report, Proposed Seacliff Terrace Site, APNs 143-040-23 and 143-040-54, South of Costa Pacifica Way, West of North Coast Highway, City of Oceanside, California 92054, dated June 17.

United States Environmental Protection Agency (USEPA), 2018, Region 9, Regional Screening Levels for Chemical Contaminants at Superfund Sites, dated May 2018.

APPENDIX B

SOIL VAPOR ANALYTICAL REPORT

20 August 2018

Mr. Bryan Voss
Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

H&P Project: LC081318-SB1
Client Project: 12107.002/ 939 N Coast Hwy

Dear Mr. Bryan Voss:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 13-Aug-18 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,



Janis La Roux
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC). H&P is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.



Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV1-5	E808034-01	Vapor	13-Aug-18	13-Aug-18
SV1-5 Rep	E808034-02	Vapor	13-Aug-18	13-Aug-18
SV1-13	E808034-03	Vapor	13-Aug-18	13-Aug-18
SV2-5	E808034-04	Vapor	13-Aug-18	13-Aug-18
SV2-10	E808034-05	Vapor	13-Aug-18	13-Aug-18
SV3-5	E808034-06	Vapor	13-Aug-18	13-Aug-18
SV3-15	E808034-07	Vapor	13-Aug-18	13-Aug-18
SV4-5	E808034-08	Vapor	13-Aug-18	13-Aug-18
SV4-15	E808034-09	Vapor	13-Aug-18	13-Aug-18

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

DETECTIONS SUMMARY

Sample ID: **SV1-5**

Laboratory ID: **E808034-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Styrene	0.84	0.50	ug/l	H&P 8260SV	

Sample ID: **SV1-5 Rep**

Laboratory ID: **E808034-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
Styrene	0.68	0.50	ug/l	H&P 8260SV	

Sample ID: **SV1-13**

Laboratory ID: **E808034-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **SV2-5**

Laboratory ID: **E808034-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **SV2-10**

Laboratory ID: **E808034-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **SV3-5**

Laboratory ID: **E808034-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzene	0.10	0.10	ug/l	H&P 8260SV	

Sample ID: **SV3-15**

Laboratory ID: **E808034-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
Benzene	0.14	0.10	ug/l	H&P 8260SV	

Sample ID: **SV4-5**

Laboratory ID: **E808034-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Sample ID: **SV4-15**

Laboratory ID: **E808034-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV1-5 (E808034-01) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV1-5 (E808034-01) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	0.84	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	91.7 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	98.9 %	75-125	"	"	"	"
Surrogate: Toluene-d8	90.2 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	96.5 %	75-125	"	"	"	"

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3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV1-5 Rep (E808034-02) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV1-5 Rep (E808034-02) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	0.68	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	90.5 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	104 %	75-125	"	"	"	"
Surrogate: Toluene-d8	92.9 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	94.0 %	75-125	"	"	"	"

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Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV1-13 (E808034-03) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV1-13 (E808034-03) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	92.9 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	93.4 %	75-125	"	"	"	"
Surrogate: Toluene-d8	89.9 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	89.4 %	75-125	"	"	"	"

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV2-5 (E808034-04) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV2-5 (E808034-04) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	86.2 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	97.6 %	75-125	"	"	"	"
Surrogate: Toluene-d8	92.2 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	90.0 %	75-125	"	"	"	"

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20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV2-10 (E808034-05) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV2-10 (E808034-05) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	93.6 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	107 %	75-125	"	"	"	"
Surrogate: Toluene-d8	90.7 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	75-125	"	"	"	"

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
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Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV3-5 (E808034-06) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	0.10	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV3-5 (E808034-06) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	86.4 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	109 %	75-125	"	"	"	"
Surrogate: Toluene-d8	92.6 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	85.1 %	75-125	"	"	"	"

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20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV3-15 (E808034-07) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	0.14	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV3-15 (E808034-07) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	92.5 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	107 %	75-125	"	"	"	"
Surrogate: Toluene-d8	93.0 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	86.3 %	75-125	"	"	"	"

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV4-5 (E808034-08) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV4-5 (E808034-08) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	93.1 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	104 %	75-125	"	"	"	"
Surrogate: Toluene-d8	93.4 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	92.4 %	75-125	"	"	"	"

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Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV4-15 (E808034-09) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
1,1-Difluoroethane (LCC)	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Dichlorodifluoromethane (F12)	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Bromomethane	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	0.50	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.50	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
Bromochloromethane	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SV4-15 (E808034-09) Vapor Sampled: 13-Aug-18 Received: 13-Aug-18									
Styrene	ND	0.50	ug/l	0.05	EH81309	13-Aug-18	13-Aug-18	H&P 8260SV	
Bromoform	ND	0.50	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.50	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
n-Butylbenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.10	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"	"	"	"	"	"	

Surrogate: Dibromofluoromethane	90.4 %	75-125	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	100 %	75-125	"	"	"	"
Surrogate: Toluene-d8	91.6 %	75-125	"	"	"	"
Surrogate: 4-Bromofluorobenzene	90.2 %	75-125	"	"	"	"

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV - Quality Control
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EH81309 - EPA 5030

Blank (EH81309-BLK1)

Prepared & Analyzed: 13-Aug-18

1,1-Difluoroethane (LCC)	ND	0.50	ug/l
Dichlorodifluoromethane (F12)	ND	0.50	"
Chloromethane	ND	0.50	"
Vinyl chloride	ND	0.05	"
Bromomethane	ND	0.50	"
Chloroethane	ND	0.50	"
Trichlorofluoromethane (F11)	ND	0.50	"
Methylene chloride (Dichloromethane)	ND	0.50	"
Methyl tertiary-butyl ether (MTBE)	ND	0.50	"
trans-1,2-Dichloroethene	ND	0.50	"
1,1-Dichloroethane	ND	0.50	"
1,1-Dichloroethene	ND	0.50	"
2,2-Dichloropropane	ND	0.50	"
cis-1,2-Dichloroethene	ND	0.50	"
Chloroform	ND	0.10	"
Bromochloromethane	ND	0.50	"
1,1,1-Trichloroethane	ND	0.50	"
1,1-Dichloropropene	ND	0.50	"
Carbon tetrachloride	ND	0.10	"
1,2-Dichloroethane (EDC)	ND	0.10	"
Benzene	ND	0.10	"
Trichloroethene	ND	0.10	"
1,2-Dichloropropane	ND	0.50	"
Bromodichloromethane	ND	0.50	"
Dibromomethane	ND	0.50	"
cis-1,3-Dichloropropene	ND	0.50	"
Toluene	ND	1.0	"
trans-1,3-Dichloropropene	ND	0.50	"
1,1,2-Trichloroethane	ND	0.50	"
1,2-Dibromoethane (EDB)	ND	0.50	"
1,3-Dichloropropane	ND	0.50	"
Tetrachloroethene	ND	0.10	"
Dibromochloromethane	ND	0.50	"
Chlorobenzene	ND	0.10	"

Leighton Associates, Inc. - San Diego
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San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV - Quality Control
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EH81309 - EPA 5030

Blank (EH81309-BLK1)

Prepared & Analyzed: 13-Aug-18

Ethylbenzene	ND	0.50	ug/l							
1,1,1,2-Tetrachloroethane	ND	0.50	"							
m,p-Xylene	ND	0.50	"							
o-Xylene	ND	0.50	"							
Styrene	ND	0.50	"							
Bromoform	ND	0.50	"							
Isopropylbenzene (Cumene)	ND	0.50	"							
1,1,2,2-Tetrachloroethane	ND	0.50	"							
1,2,3-Trichloropropane	ND	0.50	"							
n-Propylbenzene	ND	0.50	"							
Bromobenzene	ND	0.50	"							
1,3,5-Trimethylbenzene	ND	0.50	"							
2-Chlorotoluene	ND	0.50	"							
4-Chlorotoluene	ND	0.50	"							
tert-Butylbenzene	ND	0.50	"							
1,2,4-Trimethylbenzene	ND	0.50	"							
sec-Butylbenzene	ND	0.50	"							
p-Isopropyltoluene	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.50	"							
1,4-Dichlorobenzene	ND	0.50	"							
n-Butylbenzene	ND	0.50	"							
1,2-Dichlorobenzene	ND	0.50	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	0.50	"							
Hexachlorobutadiene	ND	0.50	"							
Naphthalene	ND	0.10	"							
1,2,3-Trichlorobenzene	ND	0.50	"							
1,1,2 Trichlorotrifluoroethane (F113)	ND	0.50	"							

Surrogate: Dibromofluoromethane	2.37	"	2.50	94.9	75-125
Surrogate: 1,2-Dichloroethane-d4	2.38	"	2.50	95.1	75-125
Surrogate: Toluene-d8	2.10	"	2.50	84.2	75-125
Surrogate: 4-Bromofluorobenzene	2.31	"	2.50	92.4	75-125

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Volatile Organic Compounds by H&P 8260SV - Quality Control
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EH81309 - EPA 5030

LCS (EH81309-BS1)

Prepared & Analyzed: 13-Aug-18

Dichlorodifluoromethane (F12)	3.25	0.50	ug/l	5.00		65.0	70-130			QL-1L
Vinyl chloride	5.44	0.05	"	5.00		109	70-130			
Chloroethane	5.44	0.50	"	5.00		109	70-130			
Trichlorofluoromethane (F11)	5.47	0.50	"	5.00		109	70-130			
Methylene chloride (Dichloromethane)	5.57	0.50	"	5.00		111	70-130			
trans-1,2-Dichloroethene	5.13	0.50	"	5.00		103	70-130			
1,1-Dichloroethane	5.15	0.50	"	5.00		103	70-130			
1,1-Dichloroethene	4.95	0.50	"	5.00		99.0	70-130			
cis-1,2-Dichloroethene	5.36	0.50	"	5.00		107	70-130			
Chloroform	5.73	0.10	"	5.00		115	70-130			
1,1,1-Trichloroethane	5.18	0.50	"	5.00		104	70-130			
Carbon tetrachloride	5.58	0.10	"	5.00		112	70-130			
1,2-Dichloroethane (EDC)	6.43	0.10	"	5.00		129	70-130			
Benzene	5.26	0.10	"	5.00		105	70-130			
Trichloroethene	5.57	0.10	"	5.00		111	70-130			
Toluene	4.64	1.0	"	5.00		92.9	70-130			
1,1,2-Trichloroethane	6.36	0.50	"	5.00		127	70-130			
Tetrachloroethene	5.12	0.10	"	5.00		102	70-130			
Ethylbenzene	4.82	0.50	"	5.00		96.4	70-130			
1,1,1,2-Tetrachloroethane	5.09	0.50	"	5.00		102	70-130			
m,p-Xylene	9.43	0.50	"	10.0		94.3	70-130			
o-Xylene	4.67	0.50	"	5.00		93.5	70-130			
1,1,2,2-Tetrachloroethane	5.94	0.50	"	5.00		119	70-130			
1,1,2 Trichlorotrifluoroethane (F113)	4.80	0.50	"	5.00		96.0	70-130			

Surrogate: Dibromofluoromethane	2.35		"	2.50		94.0	75-125			
Surrogate: 1,2-Dichloroethane-d4	2.63		"	2.50		105	75-125			
Surrogate: Toluene-d8	2.44		"	2.50		97.7	75-125			
Surrogate: 4-Bromofluorobenzene	2.25		"	2.50		90.0	75-125			

Leighton Associates, Inc. - San Diego
3934 Murphy Canyon Road, Suite B 205
San Diego, CA 92123

Project: LC081318-SB1
Project Number: 12107.002/ 939 N Coast Hwy
Project Manager: Mr. Bryan Voss

Reported:
20-Aug-18 08:08

Notes and Definitions

QL-1L The LCS and/or LCSD recoveries fell below the established control specifications for this analyte. Any result for this compound is qualified and should be considered biased low.

LCC Leak Check Compound

ND Analyte NOT DETECTED at or above the reporting limit

MDL Method Detection Limit

%REC Percent Recovery

RPD Relative Percent Difference

All soil results are reported in wet weight.

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

VAPOR / AIR Chain of Custody

DATE: 8/13/18
Page 1 of 1

Lab Client and Project Information			
Lab Client/Consultant: Leighton Associates		Project Name / #: 12107.002	
Lab Client Project Manager: Bryan E. Voss		Project Location: 939 N Coast Hwy, Oceanside	
Lab Client Address: 3934 Murphy Canyon Rd Suite B205		Report E-Mail(s):	
Lab Client City, State, Zip: San Diego, CA 92123		bvoss@leightongroup.com	
Phone Number: (858) 300-0983			
Reporting Requirements		Turnaround Time	
<input checked="" type="checkbox"/> Standard Report <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____ <input type="checkbox"/> CA Geotracker Global ID: _____		<input type="checkbox"/> 5-7 day Std <input type="checkbox"/> 24-Hr Rush <input type="checkbox"/> 3-day Rush <input checked="" type="checkbox"/> Mobile Lab <input type="checkbox"/> 48-Hr Rush <input type="checkbox"/> Other: _____	
Sampler Information			
Sampler(s): Kayla Hampton			
Signature: <i>Kayla Hampton</i>			
Date: 8/13/18			

Sample Receipt (Lab Use Only)	
Date Rec'd: 8/13/18	Control #: 180705.00/01
H&P Project # LC081318-SB1	
Lab Work Order # E808034	
Sample Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Notes Below	
Receipt Gauge ID:	Temp: 20
Outside Lab:	
Receipt Notes/Tracking #:	
Lab PM Initials:	

Additional Instructions to Laboratory:

EH81309

* Preferred VOC units (please choose one):

☒ µg/L ☐ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List <input checked="" type="checkbox"/> 8260SV <input type="checkbox"/> TO-15	VOCs Short List / Project List <input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15	Oxygenates <input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15	Naphthalene <input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15	TPHv as Gas <input type="checkbox"/> 8260SVm <input type="checkbox"/> TO-15m	Aromatic/Aliphatic Fractions <input type="checkbox"/> 8260SVm <input type="checkbox"/> TO-15m	Leak Check Compound <input checked="" type="checkbox"/> DFA <input type="checkbox"/> IPA <input type="checkbox"/> He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 <input type="checkbox"/> CO2 <input type="checkbox"/> O2 <input type="checkbox"/> N2				
SV1-5		8/13/18	1036	5.Vapor	Glass SYR	276		X						X						
SV1-5 Rep			1036			277		X						X						
SV1-13			1106			209		X						X						
SV2-5			1127			288		X						X						
SV2-10			1145			278		X						X						
SV3-5			1210			209		X						X						
SV3-15			1235			288		X						X						
SV4-5			1302			277		X						X						
SV4-15			13:16 ^{5a}			278		X						X						

Approved/Relinquished by: <i>X. Hennel</i>	Company: Leighton Associates	Date: 8/13/18	Time: 2:45pm	Received by: <i>John Lakoff</i>	Company: H&P	Date: 8/13/18	Time: 2:45
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

Log Sheet: Soil Vapor Sampling with Syringe

H&P Project #: LC081318-Tech Date: 8/13/18
Site Address: 8/13/18 939 N coast highway Page: 1 of 1
Consultant: Leighton H&P Rep(s): K.H., J.L., E.
Consultant Rep(s): Bryan Voss 19. Hampton

Reviewed: MS
Scanned: T Torres

Equipment Info	Purge Volume Information	Leak Check Compound	Resample Key
Inline Gauge ID#: <u>00</u>	PV Amount: <u>3 pv</u>	<input checked="" type="checkbox"/> 1,1-DFA A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.	RS = Resample
Pump ID#: <u>00</u>	PV Includes: <input checked="" type="checkbox"/> Tubing <input checked="" type="checkbox"/> Sand 40% <input checked="" type="checkbox"/> Dry Bent 50%	<input type="checkbox"/> 1,1,1,2-TFA <input type="checkbox"/> IPA <input type="checkbox"/> Other:	RD = for Dilution
			RL = for LCC Fail

Sample Information				Probe Specs								Purge & Collection Information						
Point ID	Syringe ID	Sample Volume (cc)	Sample Time	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	ProbeVac <div><input type="checkbox"/> Hg <input checked="" type="checkbox"/> H₂O</div>	
1	SV1-5	276	50	10:36	5	6	1/4	12	2.25	12	2.25	✓	✓	2198	200	10:59	200	✓
2	SV1-5 rep	277	50	10:36	5	6	1/4	12	2.25	12	2.25	✓	✓	2198	200	10:59	200	✓
3	SV1-13	209	50	11:06	13	14	1/4	12	2.25	12	2.25	✓	✓	2314	200	11:34	200	45
4	SV2-5	288	50	11:27	5	6	1/4	12	2.25	12	2.25	✓	✓	2198	200	10:59	200	✓
5	SV2-10	278	50	11:45	10	11	1/4	12	2.25	12	2.25	✓	✓	2271	200	11:21	200	✓
6	SV3-5	209	50	12:18	5	6	1/4	12	2.25	12	2.25	✓	✓	2198	200	10:59	200	✓
7	SV3-15	288	50	12:35	15	16	1/4	12	2.25	12	2.25	✓	✓	2343	200	11:43	200	✓
8	SV4-5	276	50	13:02	5	6	1/4	12	2.25	12	2.25	✓	✓	2198	200	10:59	200	✓
9	SV4-15	278	50	13:16	15	16	1/4	12	2.25	12	2.25	✓	✓	2343	200	11:43	200	✓
10	SV4-15 rd	288	50	13:52	15	16	1/4	12	2.25	12	2.25	✓	✓	2420	200		200	✓
11																		
12																		

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):

APPENDIX C

SOIL SAMPLE ANALYTICAL REPORT



WORK ORDER NUMBER: 18-08-0998

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Leighton Consulting, Inc.

Client Project Name: North Coast Apt.

Attention: Bryan Voss
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

A handwritten signature in black ink, appearing to read "Richard Villafania".

Approved for release on 08/21/2018 by:
Richard Villafania
Project Manager

ResultLink ▶

Email your PM ▶

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

Contents

Client Project Name: North Coast Apt.
Work Order Number: 18-08-0998

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Work Order: 18-08-0998Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/13/18. They were assigned to Work Order 18-08-0998.

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

Holding Times:

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

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

Quality Control:

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

Subcontractor Information:

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

Additional Comments:

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

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

DoD Projects:

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



Calscience

Sample Summary

Client: Leighton Consulting, Inc.	Work Order: 18-08-0998
3934 Murphy Canyon Road, Suite B205	Project Name: North Coast Apt.
San Diego, CA 92123-4425	PO Number:
	Date/Time Received: 08/13/18 19:00
	Number of Containers: 9

Attn: Bryan Voss

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
DP-1 (3-4)	18-08-0998-1	08/13/18 07:49	1	Solid
DP-1 (10-11)	18-08-0998-2	08/13/18 07:51	1	Solid
DP-2-(3-4)	18-08-0998-3	08/13/18 08:33	1	Solid
DP-2-(9-10)	18-08-0998-4	08/13/18 08:42	1	Solid
DP-3-(3-4)	18-08-0998-5	08/13/18 09:06	1	Solid
DP-3-(10-11)	18-08-0998-6	08/13/18 09:15	1	Solid
DP-4-(3-4)	18-08-0998-7	08/13/18 09:43	1	Solid
DP-4-(10-11)	18-08-0998-8	08/13/18 09:51	1	Solid
SP-1	18-08-0998-9	08/13/18 09:55	1	Solid

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Calscience

Detections Summary

Client: Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Work Order: 18-08-0998
Project Name: North Coast Apt.
Received: 08/13/18

Attn: Bryan Voss

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Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
DP-1 (3-4) (18-08-0998-1)						
Lead	2.60		0.505	mg/kg	EPA 6010B	EPA 3050B
DP-2-(3-4) (18-08-0998-3)						
Lead	0.972		0.495	mg/kg	EPA 6010B	EPA 3050B
DP-2-(9-10) (18-08-0998-4)						
Lead	0.795		0.495	mg/kg	EPA 6010B	EPA 3050B
DP-3-(3-4) (18-08-0998-5)						
Lead	2.79		0.500	mg/kg	EPA 6010B	EPA 3050B
DP-3-(10-11) (18-08-0998-6)						
Lead	0.616		0.503	mg/kg	EPA 6010B	EPA 3050B
DP-4-(3-4) (18-08-0998-7)						
Lead	5.34		0.508	mg/kg	EPA 6010B	EPA 3050B
DP-4-(10-11) (18-08-0998-8)						
Lead	1.06		0.500	mg/kg	EPA 6010B	EPA 3050B
SP-1 (18-08-0998-9)						
Lead	3.94		0.493	mg/kg	EPA 6010B	EPA 3050B

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

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* MDL is shown



Calscience

Analytical Report

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: North Coast Apt.

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DP-1 (3-4)	18-08-0998-1-A	08/13/18 07:49	Solid	GC 47	08/15/18	08/16/18 04:33	180815B02

Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	96	60-140	

DP-1 (10-11)	18-08-0998-2-A	08/13/18 07:51	Solid	GC 47	08/15/18	08/16/18 04:54	180815B02
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Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	99	60-140	

DP-2-(3-4)	18-08-0998-3-A	08/13/18 08:33	Solid	GC 47	08/15/18	08/16/18 05:14	180815B02
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Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	99	60-140	

DP-2-(9-10)	18-08-0998-4-A	08/13/18 08:42	Solid	GC 47	08/15/18	08/16/18 05:35	180815B02
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Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	16	1.00	
TPH C10-C28	ND	16	1.00	
TPH C28-C40	ND	16	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	99	60-140	

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



Calscience

Analytical Report

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: North Coast Apt.

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DP-3-(3-4)	18-08-0998-5-A	08/13/18 09:06	Solid	GC 47	08/15/18	08/16/18 05:56	180815B02

Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	102	60-140	

DP-3-(10-11)	18-08-0998-6-A	08/13/18 09:15	Solid	GC 47	08/15/18	08/16/18 06:17	180815B02
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Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	100	60-140	

DP-4-(3-4)	18-08-0998-7-A	08/13/18 09:43	Solid	GC 47	08/15/18	08/16/18 06:38	180815B02
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Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	97	60-140	

DP-4-(10-11)	18-08-0998-8-A	08/13/18 09:51	Solid	GC 47	08/15/18	08/16/18 06:58	180815B02
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Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	14	1.00	
TPH C10-C28	ND	14	1.00	
TPH C28-C40	ND	14	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	60-140	

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



Calscience

Analytical Report

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: North Coast Apt.

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-1	18-08-0998-9-A	08/13/18 09:55	Solid	GC 47	08/15/18	08/16/18 07:19	180815B02

Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	97	60-140	

Method Blank	099-15-476-455	N/A	Solid	GC 47	08/15/18	08/15/18 12:35	180815B02
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Parameter	Result	RL	DF	Qualifiers
TPH C6-C10	ND	15	1.00	
TPH C10-C28	ND	15	1.00	
TPH C28-C40	ND	15	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	99	60-140	

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



Calscience

Analytical Report

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: North Coast Apt.

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DP-1 (3-4)	18-08-0998-1-A	08/13/18 07:49	Solid	ICP 8300	08/16/18	08/21/18 16:33	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		2.60		0.505	1.01		
DP-1 (10-11)	18-08-0998-2-A	08/13/18 07:51	Solid	ICP 8300	08/16/18	08/21/18 16:35	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		ND		0.498	0.995		
DP-2-(3-4)	18-08-0998-3-A	08/13/18 08:33	Solid	ICP 8300	08/16/18	08/21/18 16:41	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		0.972		0.495	0.990		
DP-2-(9-10)	18-08-0998-4-A	08/13/18 08:42	Solid	ICP 8300	08/16/18	08/21/18 16:43	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		0.795		0.495	0.990		
DP-3-(3-4)	18-08-0998-5-A	08/13/18 09:06	Solid	ICP 8300	08/16/18	08/21/18 16:44	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		2.79		0.500	1.00		
DP-3-(10-11)	18-08-0998-6-A	08/13/18 09:15	Solid	ICP 8300	08/16/18	08/21/18 16:46	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		0.616		0.503	1.01		
DP-4-(3-4)	18-08-0998-7-A	08/13/18 09:43	Solid	ICP 8300	08/16/18	08/21/18 16:48	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		5.34		0.508	1.02		
DP-4-(10-11)	18-08-0998-8-A	08/13/18 09:51	Solid	ICP 8300	08/16/18	08/21/18 16:50	180816L07
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>		<u>Qualifiers</u>
Lead		1.06		0.500	1.00		

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



Calscience

Analytical Report

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: North Coast Apt.

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SP-1	18-08-0998-9-A	08/13/18 09:55	Solid	ICP 8300	08/16/18	08/21/18 16:52	180816L07

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Lead	3.94	0.493	0.985	

Method Blank	097-01-002-26819	N/A	Solid	ICP 8300	08/16/18	08/21/18 15:39	180816L07
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Lead	ND	0.476	0.952	

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



Calscience

Quality Control - Spike/Spike Duplicate

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: North Coast Apt.

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
DP-4-(3-4)	Sample	Solid	GC 47	08/15/18	08/16/18 06:38	180815S02
DP-4-(3-4)	Matrix Spike	Solid	GC 47	08/15/18	08/16/18 03:51	180815S02
DP-4-(3-4)	Matrix Spike Duplicate	Solid	GC 47	08/15/18	08/16/18 04:12	180815S02

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH Gas/Diesel	ND	400.0	309.5	77	308.8	77	60-140	0	0-30	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3050B
Method: EPA 6010B

Project: North Coast Apt.

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
18-08-0783-1	Sample	Solid	ICP 8300	08/16/18	08/21/18 16:28	180816S07
18-08-0783-1	Matrix Spike	Solid	ICP 8300	08/16/18	08/21/18 16:30	180816S07
18-08-0783-1	Matrix Spike Duplicate	Solid	ICP 8300	08/16/18	08/21/18 16:31	180816S07

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Lead	ND	25.00	24.03	96	24.70	99	75-125	3	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: North Coast Apt.

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-476-455	LCS	Solid	GC 47	08/15/18	08/15/18 12:56	180815B02

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
TPH Gas/Diesel	400.0	326.8	82	70-130	

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Calscience

Quality Control - LCS

Leighton Consulting, Inc.
3934 Murphy Canyon Road, Suite B205
San Diego, CA 92123-4425

Date Received: 08/13/18
Work Order: 18-08-0998
Preparation: EPA 3050B
Method: EPA 6010B

Project: North Coast Apt.

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-26819	LCS	Solid	ICP 8300	08/16/18	08/21/18 16:26	180816L07

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Lead	25.00	25.97	104	80-120	

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Sample Analysis Summary Report

Work Order: 18-08-0998

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 6010B	EPA 3050B	110	ICP 8300	1
EPA 8015B (M)	EPA 3550B	972	GC 47	1


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Glossary of Terms and Qualifiers

Work Order: 18-08-0998

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDS 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.

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1CLIENT: LEIGHTONDATE: 08/13/2018

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

Thermometer ID: SC6 (CF: -0.5°C); Temperature (w/o CF): 3.7 °C (w/ CF): 3.2 °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 courierAmbient Temperature: ☐ Air ☐ FilterChecked by: 671

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/AChecked by: 671Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/AChecked by: 689

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Container(s) for certain analysis free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA_h ☐ VOA_{na2} ☐ 100PJ ☐ 100PJ_{na2} ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 125PB ☐ 125PB_{znna} (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB_s (pH__2) ☐ 250PB ☐ 250PB_n (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s (pH__2) ☐ 500PB

☐ 1AGB ☐ 1AGB_{na2} ☐ 1AGB_s (pH__2) ☐ 1AGB_s (O&G) ☐ 1PB ☐ 1PB_{na} (pH__12) ☐ _____ ☐ _____ ☐ _____

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

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

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

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 689s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, znna = Zn (CH₃CO₂)₂ + NaOHReviewed by: 1053

APPENDIX D

VAPOR RISK MODEL DATASHEETS

Department of Toxic Substances Control Vapor Intrusion Screening Model - Soil Gas

DATA ENTRY SHEET

Scenario: Residential
Chemical: Benzene

Results Summary				
Soil Gas Conc. ($\mu\text{g}/\text{m}^3$)	Attenuation Factor (unitless)	Indoor Air Conc. ($\mu\text{g}/\text{m}^3$)	Cancer Risk	Noncancer Hazard
1.40E-01	6.9E-04	9.7E-05	1.0E-09	3.1E-05

Reset to
Defaults

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
71432	1.40E-01			Benzene

MESSAGE: See VLOOKUP table comments on chemical properties
and/or toxicity criteria for this chemical.

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
12.7	457	24	S		

MORE
↓

Depth to bottom of enclosed space floor must be = 15 or 200 cm.				
ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.66	0.375	0.054	5

MORE
↓

Lookup Receptor
Parameters

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH (hour^{-1})
70	26	26	350	24 (NEW)	0.5 (NEW)

NEW=> Residential

END

Department of Toxic Substances Control Vapor Intrusion Screening Model - Soil Gas

DATA ENTRY SHEET

Scenario: Residential
Chemical: Styrene

Reset to
Defaults

Soil Gas Concentration Data			
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_g (ppmv)
100425	8.40E-01		Styrene

Results Summary				
Soil Gas Conc. ($\mu\text{g}/\text{m}^3$)	Attenuation Factor (unitless)	Indoor Air Conc. ($\mu\text{g}/\text{m}^3$)	Cancer Risk	Noncancer Hazard
8.40E-01	1.2E-03	1.0E-03	NA	1.1E-06

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
12.7	152	24	S		

Depth to bottom of enclosed space floor must be = 15 or 200 cm.

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.66	0.375	0.054	5

MORE
↓

Lookup Receptor
Parameters

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH (hour^{-1})
70	26	26	350	24 (NEW)	0.5 (NEW)

NEW=> Residential

END