

09 June 2014



Mr. Joe Bahde
AMEC Environment & Infrastructure-Irvine
121 Innovation Drive, Suite 200
Irvine, CA 92617

H&P Project: AEE111513-11 Rev 3
Client Project: NB1016075P / Palomar Street

Dear Mr. Joe Bahde:

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 15-Nov-13 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

Unless otherwise noted, 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 Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

AMEC Environment & Infrastructure-Irvine
121 Innovation Drive, Suite 200
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Project: AEE111513-11 Rev 3
Project Number: NB1016075P / Palomar Street
Project Manager: Mr. Joe Bahde

Reported:
09-Jun-14 08:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
14G-SV	E311062-01	Vapor	14-Nov-13	15-Nov-13
14B-SV	E311062-02	Vapor	14-Nov-13	15-Nov-13
3B-SV	E311062-03	Vapor	14-Nov-13	15-Nov-13
3G-SV	E311062-04	Vapor	14-Nov-13	15-Nov-13
10L-SV	E311062-05	Vapor	14-Nov-13	15-Nov-13
10B-SV	E311062-06	Vapor	14-Nov-13	15-Nov-13
10B-SV REP	E311062-07	Vapor	14-Nov-13	15-Nov-13

A one point calibration was analyzed for Methanol using a standard with a concentration of 135 ug/m3. The Methanol reporting limit of 27 ug/m3 was assigned based on the signal to noise of the instrument.

Total petroleum hydrocarbon (TPH) results were requested following sample analysis. Therefore, all TPH results should be considered an estimate since a TPH standard was not analyzed.

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DETECTIONS SUMMARY

Sample ID: **14G-SV**

Laboratory ID: **E311062-01**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
n-Decane	54	21		ug/m3	EPA TO-15	TIC
Undecane	40	21		ug/m3	EPA TO-15	TIC
Propane	39	21		ug/m3	EPA TO-15	TIC
Pentane	76	15		ug/m3	EPA TO-15	TIC
n-Octane	55	21		ug/m3	EPA TO-15	TIC
n-Butyl alcohol	54	21		ug/m3	EPA TO-15	TIC
Methanol	100	27		ug/m3	EPA TO-15	
2,4-Dimethyl-heptane	56	21		ug/m3	EPA TO-15	TIC
Butane	54	12		ug/m3	EPA TO-15	TIC
4,7-Dimethyl Undecane	140	38		ug/m3	EPA TO-15	TIC
2-Methyl pentane	33	21		ug/m3	EPA TO-15	TIC
1,1-Difluoroethane (LCC)	20	5.5		ug/m3	EPA TO-15	
Acetone	110	24		ug/m3	EPA TO-15	
Carbon disulfide	8.4	6.3		ug/m3	EPA TO-15	
Benzene	26	3.2		ug/m3	EPA TO-15	
Toluene	59	3.8		ug/m3	EPA TO-15	
Ethylbenzene	11	4.4		ug/m3	EPA TO-15	
m,p-Xylene	30	8.8		ug/m3	EPA TO-15	
o-Xylene	12	4.4		ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	17	5.0		ug/m3	EPA TO-15	
TPHv (C5 - C11)	1100	100		ug/m3	EPA TO-15	E-02

Sample ID: **14B-SV**

Laboratory ID: **E311062-02**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Dimethyl octane isomer	90	29		ug/m3	EPA TO-15	TIC
2,3-Dimethylpentane	22	21		ug/m3	EPA TO-15	TIC
Undecane	37	21		ug/m3	EPA TO-15	TIC
Pentane	24	15		ug/m3	EPA TO-15	TIC
n-Octane	86	21		ug/m3	EPA TO-15	TIC
n-Decane	52	21		ug/m3	EPA TO-15	TIC
Methyl Pentane Isomer	24	18		ug/m3	EPA TO-15	TIC
Methanol	41	27		ug/m3	EPA TO-15	
2-Methyl pentane	35	21		ug/m3	EPA TO-15	TIC
2,4-Dimethyl-heptane	40	21		ug/m3	EPA TO-15	TIC
1-Hexene	55	21		ug/m3	EPA TO-15	TIC
1,1-Difluoroethane (LCC)	12	5.5		ug/m3	EPA TO-15	

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Sample ID: **14B-SV**

Laboratory ID: **E311062-02**

Analyte	Result	Reporting		Method	Notes
		Limit	Units		
Acetone	450	24	ug/m3	EPA TO-15	
Methyl tertiary-butyl ether (MTBE)	8.7	3.6	ug/m3	EPA TO-15	
Benzene	110	3.2	ug/m3	EPA TO-15	
Toluene	160	3.8	ug/m3	EPA TO-15	
Tetrachloroethene	12	6.9	ug/m3	EPA TO-15	
Ethylbenzene	35	4.4	ug/m3	EPA TO-15	
m,p-Xylene	79	8.8	ug/m3	EPA TO-15	
o-Xylene	29	4.4	ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	15	5.0	ug/m3	EPA TO-15	
TPHv (C5 - C11)	1400	100	ug/m3	EPA TO-15	E-02

Sample ID: **3B-SV**

Laboratory ID: **E311062-03**

Analyte	Result	Reporting		Method	Notes
		Limit	Units		
Methanol	540	27	ug/m3	EPA TO-15	
1,1-Difluoroethane (LCC)	7.5	5.5	ug/m3	EPA TO-15	
Acetone	190	24	ug/m3	EPA TO-15	
Benzene	24	3.2	ug/m3	EPA TO-15	
Toluene	60	3.8	ug/m3	EPA TO-15	
Ethylbenzene	19	4.4	ug/m3	EPA TO-15	
m,p-Xylene	48	8.8	ug/m3	EPA TO-15	
o-Xylene	20	4.4	ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	15	5.0	ug/m3	EPA TO-15	
TPHv (C5 - C11)	820	100	ug/m3	EPA TO-15	E-02

Sample ID: **3G-SV**

Laboratory ID: **E311062-04**

Analyte	Result	Reporting		Method	Notes
		Limit	Units		
Methanol	95	27	ug/m3	EPA TO-15	
1,1-Difluoroethane (LCC)	8.2	5.5	ug/m3	EPA TO-15	
Acetone	560	24	ug/m3	EPA TO-15	
Methylene chloride (Dichloromethane)	6.2	3.5	ug/m3	EPA TO-15	
Carbon disulfide	7.5	6.3	ug/m3	EPA TO-15	
Chloroform	11	4.9	ug/m3	EPA TO-15	
Benzene	55	3.2	ug/m3	EPA TO-15	
Toluene	140	3.8	ug/m3	EPA TO-15	
Tetrachloroethene	15	6.9	ug/m3	EPA TO-15	
Ethylbenzene	26	4.4	ug/m3	EPA TO-15	
m,p-Xylene	66	8.8	ug/m3	EPA TO-15	

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Sample ID: **3G-SV**

Laboratory ID: **E311062-04**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
o-Xylene	22	4.4		ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	14	5.0		ug/m3	EPA TO-15	
TPHv (C5 - C11)	1200	100		ug/m3	EPA TO-15	E-02

Sample ID: **10L-SV**

Laboratory ID: **E311062-05**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
1,1-Difluoroethane (LCC)	19	5.5		ug/m3	EPA TO-15	
Acetone	300	24		ug/m3	EPA TO-15	
Benzene	23	3.2		ug/m3	EPA TO-15	
Toluene	76	3.8		ug/m3	EPA TO-15	
Tetrachloroethene	16	6.9		ug/m3	EPA TO-15	
Ethylbenzene	21	4.4		ug/m3	EPA TO-15	
m,p-Xylene	34	8.8		ug/m3	EPA TO-15	
o-Xylene	10	4.4		ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	12	5.0		ug/m3	EPA TO-15	
TPHv (C5 - C11)	760	100		ug/m3	EPA TO-15	E-02

Sample ID: **10B-SV**

Laboratory ID: **E311062-06**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Butane	28	12		ug/m3	EPA TO-15	TIC
n-Decane	23	21		ug/m3	EPA TO-15	TIC
Pentane	30	15		ug/m3	EPA TO-15	TIC
4-Methyl octane	36	27		ug/m3	EPA TO-15	TIC
3,6-Dimethyl decane	74	35		ug/m3	EPA TO-15	TIC
Undecane	25	21		ug/m3	EPA TO-15	TIC
Methanol	230	27		ug/m3	EPA TO-15	
Propane	45	21		ug/m3	EPA TO-15	TIC
1,1-Difluoroethane (LCC)	1000	5.5		ug/m3	EPA TO-15	
Acetone	140	24		ug/m3	EPA TO-15	
Methylene chloride (Dichloromethane)	3.7	3.5		ug/m3	EPA TO-15	
Benzene	7.6	3.2		ug/m3	EPA TO-15	
Toluene	16	3.8		ug/m3	EPA TO-15	
m,p-Xylene	16	8.8		ug/m3	EPA TO-15	
o-Xylene	5.2	4.4		ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	14	5.0		ug/m3	EPA TO-15	
TPHv (C5 - C11)	750	100		ug/m3	EPA TO-15	E-02

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Sample ID: **10B-SV REP**

Laboratory ID: **E311062-07**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Methanol	190	27		ug/m3	EPA TO-15	
1,1-Difluoroethane (LCC)	120	5.5		ug/m3	EPA TO-15	
Acetone	120	24		ug/m3	EPA TO-15	
Benzene	5.8	3.2		ug/m3	EPA TO-15	
Toluene	11	3.8		ug/m3	EPA TO-15	
m,p-Xylene	12	8.8		ug/m3	EPA TO-15	
o-Xylene	5.4	4.4		ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	13	5.0		ug/m3	EPA TO-15	
TPHv (C5 - C11)	840	100		ug/m3	EPA TO-15	E-02

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
14G-SV (E311062-01) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
1,1-Difluoroethane (LCC)	20	5.5	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
n-Octane	55	21	"	"	"	"	"	"	TIC
Butane	54	12	"	"	"	"	"	"	TIC
4,7-Dimethyl Undecane	140	38	"	"	"	"	"	"	TIC
2-Methyl pentane	33	21	"	"	"	"	"	"	TIC
2,4-Dimethyl-heptane	56	21	"	"	"	"	"	"	TIC
n-Decane	54	21	"	"	"	"	"	"	TIC
Methanol	100	27	"	"	"	"	"	"	
Pentane	76	15	"	"	"	"	"	"	TIC
Undecane	40	21	"	"	"	"	"	"	TIC
n-Butyl alcohol	54	21	"	"	"	"	"	"	TIC
Propane	39	21	"	"	"	"	"	"	TIC
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	110	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	8.4	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	26	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
14G-SV (E311062-01) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
4-Methyl-2-pentanone (MIBK)	ND	8.3	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Toluene	59	3.8	"	"	"	"	"	"	"
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	"
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	"
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	"
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	"
Ethylbenzene	11	4.4	"	"	"	"	"	"	"
m,p-Xylene	30	8.8	"	"	"	"	"	"	"
Styrene	ND	4.3	"	"	"	"	"	"	"
o-Xylene	12	4.4	"	"	"	"	"	"	"
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	"
Isopropylbenzene (Cumene)	ND	5.0	"	"	"	"	"	"	"
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	"
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	"
tert-Butylbenzene	ND	5.6	"	"	"	"	"	"	"
1,2,4-Trimethylbenzene	17	5.0	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	"
sec-Butylbenzene	ND	5.6	"	"	"	"	"	"	"
p-Isopropyltoluene	ND	5.6	"	"	"	"	"	"	"
n-Butylbenzene	ND	5.6	"	"	"	"	"	"	"
Naphthalene	ND	5.3	"	"	"	"	"	"	"
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	108 %	76-134	"	"	"	"	"
Surrogate: Toluene-d8	105 %	78-125	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	98.3 %	77-127	"	"	"	"	"

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
14B-SV (E311062-02) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
1,1-Difluoroethane (LCC)	12	5.5	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Dimethyl octane isomer	90	29	"	"	"	"	"	"	TIC
1-Hexene	55	21	"	"	"	"	"	"	TIC
Pentane	24	15	"	"	"	"	"	"	TIC
n-Octane	86	21	"	"	"	"	"	"	TIC
n-Decane	52	21	"	"	"	"	"	"	TIC
Methyl Pentane Isomer	24	18	"	"	"	"	"	"	TIC
Methanol	41	27	"	"	"	"	"	"	
2-Methyl pentane	35	21	"	"	"	"	"	"	TIC
2,4-Dimethyl-heptane	40	21	"	"	"	"	"	"	TIC
2,3-Dimethylpentane	22	21	"	"	"	"	"	"	TIC
Undecane	37	21	"	"	"	"	"	"	TIC
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	450	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	8.7	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	110	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
14B-SV (E311062-02) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
4-Methyl-2-pentanone (MIBK)	ND	8.3	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Toluene	160	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Tetrachloroethene	12	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Ethylbenzene	35	4.4	"	"	"	"	"	"	
m,p-Xylene	79	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	29	4.4	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.6	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	15	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.6	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.6	"	"	"	"	"	"	
n-Butylbenzene	ND	5.6	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	107 %	76-134	"	"	"	"	"
Surrogate: Toluene-d8	106 %	78-125	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	96.0 %	77-127	"	"	"	"	"

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Project: AEE111513-11 Rev 3
Project Number: NB1016075P / Palomar Street
Project Manager: Mr. Joe Bahde

Reported:
09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
3B-SV (E311062-03) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
1,1-Difluoroethane (LCC)	7.5	5.5	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Methanol	540	27	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	190	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	24	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
Toluene	60	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Ethylbenzene	19	4.4	"	"	"	"	"	"	
m,p-Xylene	48	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

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Project: AEE111513-11 Rev 3
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Reported:
09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
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3B-SV (E311062-03) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13

o-Xylene	20	4.4	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.6	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	15	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.6	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.6	"	"	"	"	"	"	
n-Butylbenzene	ND	5.6	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	106 %	76-134	"	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>	105 %	78-125	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.6 %	77-127	"	"	"	"	"	"	

3G-SV (E311062-04) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13

1,1-Difluoroethane (LCC)	8.2	5.5	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Methanol	95	27	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	560	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	6.2	3.5	"	"	"	"	"	"	
Carbon disulfide	7.5	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	

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Project: AEE111513-11 Rev 3
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Reported:
09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
3G-SV (E311062-04) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
Chloroform	11	4.9	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	55	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
Toluene	140	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Tetrachloroethene	15	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Ethylbenzene	26	4.4	"	"	"	"	"	"	
m,p-Xylene	66	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	22	4.4	"	"	"	"	"	"	
1,1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.6	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	14	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.6	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.6	"	"	"	"	"	"	
n-Butylbenzene	ND	5.6	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4
Surrogate: Toluene-d8
Surrogate: 4-Bromofluorobenzene

104 % 76-134 " " " "
105 % 78-125 " " " "
97.9 % 77-127 " " " "

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09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
10L-SV (E311062-05) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
1,1-Difluoroethane (LCC)	19	5.5	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Methanol	ND	27	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	300	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	23	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
Toluene	76	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Tetrachloroethene	16	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Ethylbenzene	21	4.4	"	"	"	"	"	"	
m,p-Xylene	34	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	

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09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
10L-SV (E311062-05) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
o-Xylene	10	4.4	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.6	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	12	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.6	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.6	"	"	"	"	"	"	
n-Butylbenzene	ND	5.6	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	76-134	"	"	"	"	"	"
<i>Surrogate: Toluene-d8</i>	97.4 %	78-125	"	"	"	"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	86.9 %	77-127	"	"	"	"	"	"

10B-SV (E311062-06) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13

1,1-Difluoroethane (LCC)	1000	5.5	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Butane	28	12	"	"	"	"	"	"	TIC
4-Methyl octane	36	27	"	"	"	"	"	"	TIC
Methanol	230	27	"	"	"	"	"	"	
3,6-Dimethyl decane	74	35	"	"	"	"	"	"	TIC
Undecane	25	21	"	"	"	"	"	"	TIC
n-Decane	23	21	"	"	"	"	"	"	TIC
Pentane	30	15	"	"	"	"	"	"	TIC
Propane	45	21	"	"	"	"	"	"	TIC
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	140	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	3.7	3.5	"	"	"	"	"	"	

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09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
10B-SV (E311062-06) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
Carbon disulfide	ND	6.3	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	7.6	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
Toluene	16	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	16	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	5.2	4.4	"	"	"	"	"	"	
1,1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.6	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	14	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.6	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.6	"	"	"	"	"	"	
n-Butylbenzene	ND	5.6	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	

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Irvine, CA 92617

Project: AEE111513-11 Rev 3
Project Number: NB1016075P / Palomar Street
Project Manager: Mr. Joe Bahde

Reported:
09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
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10B-SV (E311062-06) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13

1,2,4-Trichlorobenzene	ND	38	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		118 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		104 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.1 %	77-127		"	"	"	"	

10B-SV REP (E311062-07) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13

1,1-Difluoroethane (LCC)	120	5.5	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Methanol	190	27	"	"	"	"	"	"	
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
Acetone	120	24	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	5.8	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
Toluene	11	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	

AMEC Environment & Infrastructure-Irvine
121 Innovation Drive, Suite 200
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Reported:
09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
10B-SV REP (E311062-07) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
2-Hexanone (MBK)	ND	8.3	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	12	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	5.4	4.4	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Isopropylbenzene (Cumene)	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.6	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	13	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.6	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.6	"	"	"	"	"	"	
n-Butylbenzene	ND	5.6	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>76-134</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>78-125</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.8 %</i>	<i>77-127</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>

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Project: AEE111513-11 Rev 3
Project Number: NB1016075P / Palomar Street
Project Manager: Mr. Joe Bahde

Reported:
09-Jun-14 08:40

TPHv / APH on Vapors by EPA Method TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
14G-SV (E311062-01) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
TPHv (C5 - C11)	1100	100	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	E-02
14B-SV (E311062-02) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
TPHv (C5 - C11)	1400	100	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	E-02
3B-SV (E311062-03) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
TPHv (C5 - C11)	820	100	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	E-02
3G-SV (E311062-04) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
TPHv (C5 - C11)	1200	100	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	E-02
10L-SV (E311062-05) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
TPHv (C5 - C11)	760	100	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	E-02
10B-SV (E311062-06) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
TPHv (C5 - C11)	750	100	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	E-02
10B-SV REP (E311062-07) Vapor Sampled: 14-Nov-13 Received: 15-Nov-13									
TPHv (C5 - C11)	840	100	ug/m3	1	EK31912	19-Nov-13	20-Nov-13	EPA TO-15	E-02

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Project: AEE111513-11 Rev 3
Project Number: NB1016075P / Palomar Street
Project Manager: Mr. Joe Bahde

Reported:
09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15 - 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 EK31912 - TO-15

Prepared & Analyzed: 19-Nov-13

Blank (EK31912-BLK1)

Methanol	ND	27	ug/m3							
1,1-Difluoroethane (LCC)	ND	5.5	"							
Dichlorodifluoromethane (F12)	ND	5.0	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
Acetone	ND	24	"							
1,1-Dichloroethene	ND	4.0	"							
Tertiary-butyl alcohol (TBA)	ND	6.1	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Diisopropyl ether (DIPE)	ND	4.2	"							
Chloroform	ND	4.9	"							
Ethyl tert-butyl ether (ETBE)	ND	4.2	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Tertiary-amyl methyl ether (TAME)	ND	4.2	"							
Trichloroethene	ND	5.5	"							
Bromodichloromethane	ND	6.8	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							
2-Hexanone (MBK)	ND	8.3	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							

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09-Jun-14 08:40

Volatile Organic Compounds by EPA TO-15 - 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 EK31912 - TO-15

Blank (EK31912-BLK1)

Prepared & Analyzed: 19-Nov-13

1,1,1,2-Tetrachloroethane	ND	7.0	ug/m3							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
Isopropylbenzene (Cumene)	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
tert-Butylbenzene	ND	5.6	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,4-Dichlorobenzene	ND	12	"							
sec-Butylbenzene	ND	5.6	"							
p-Isopropyltoluene	ND	5.6	"							
n-Butylbenzene	ND	5.6	"							
Naphthalene	ND	5.3	"							
1,2,4-Trichlorobenzene	ND	38	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	240		"	214		112	76-134			
<i>Surrogate: Toluene-d8</i>	206		"	207		99.7	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	385		"	364		106	77-127			

LCS (EK31912-BS1)

Prepared & Analyzed: 19-Nov-13

Dichlorodifluoromethane (F12)	58	5.0	ug/m3	50.4		116	70-130			
Vinyl chloride	21	2.6	"	26.0		80.4	70-130			
Chloroethane	24	8.0	"	26.8		90.7	70-130			
Trichlorofluoromethane (F11)	56	5.6	"	56.6		98.9	70-130			
1,1-Dichloroethene	34	4.0	"	40.4		85.1	70-130			
1,1,2-Trichlorotrifluoroethane (F113)	68	7.7	"	77.6		87.4	70-130			
Methylene chloride (Dichloromethane)	34	3.5	"	35.4		96.1	70-130			
trans-1,2-Dichloroethene	34	8.0	"	40.4		84.0	70-130			
1,1-Dichloroethane	36	4.1	"	41.2		88.4	70-130			
cis-1,2-Dichloroethene	32	4.0	"	40.0		80.5	70-130			
Chloroform	49	4.9	"	49.6		99.2	70-130			

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Reported:
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Volatile Organic Compounds by EPA TO-15 - 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 EK31912 - TO-15

LCS (EK31912-BS1)

Prepared & Analyzed: 19-Nov-13

1,1,1-Trichloroethane	55	5.5	ug/m3	55.6		99.8	70-130			
1,2-Dichloroethane (EDC)	41	4.1	"	41.2		98.7	70-130			
Benzene	29	3.2	"	32.4		91.0	70-130			
Carbon tetrachloride	66	6.4	"	64.0		104	70-130			
Trichloroethene	46	5.5	"	54.8		84.8	70-130			
Toluene	30	3.8	"	38.4		78.0	70-130			
1,1,2-Trichloroethane	45	5.5	"	55.6		80.1	70-130			
Tetrachloroethene	50	6.9	"	69.2		72.5	70-130			
1,1,1,2-Tetrachloroethane	55	7.0	"	70.0		79.2	70-130			
Ethylbenzene	36	4.4	"	44.2		82.5	70-130			
m,p-Xylene	77	8.8	"	88.4		87.4	70-130			
o-Xylene	38	4.4	"	44.2		86.7	70-130			
1,1,2,2-Tetrachloroethane	55	7.0	"	70.0		77.9	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	254		"	214		118	76-134			
<i>Surrogate: Toluene-d8</i>	210		"	207		102	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	393		"	364		108	77-127			

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Reported:
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TPHv / APH on Vapors by EPA Method TO-15 - 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 EK31912 - TO-15

Blank (EK31912-BLK1)

Prepared: 19-Nov-13 Analyzed: 20-Nov-13

TPHv (C5 - C11)	ND	100	ug/m3							
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Notes and Definitions

- TIC Analyte is a Tentatively Identified Compound with an estimated concentration value.
- E-02 The concentration indicated for this analyte is an estimated value. Analyte was requested after the samples were analyzed; therefore no continuing calibration was performed.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory (Certification # L11-175) in accordance with the DoD-ELAP program. H&P is approved by the State of Arizona under Certification Numbers AZM758 and AZ0779. H&P is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS
Certificate# 2742, 2745, & 2741 approved for LUFT
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

Hexachlorobutadiene by EPA TO-15 & TO-14A	1,3-Dichlorobenzene by EPA TO-15 & TO-14A
1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A	Trichlorofluoromethane by EPA TO-14A
1,2-Dichlorobenzene by EPA TO-15 & TO-14A	Naphthalene by H&P SOP TO-15/GC-MS
Dichlorotetrafluoroethane by EPA TO-14A	1,2-Dibromoethane (EDB) by EPA TO-15 & TO-14A
1,4-Dichlorobenzene by EPA TO-15 & TO-14A	1,2-Dibromo-3-chloropropane by EPA TO-15
Benzene by EPA TO-15 & TO-14A	1,3-Butadiene by EPA TO-15
Chlorobenzene by EPA TO-15 & TO-14A	1,1,2-Trichlorotrifluoroethane by EPA TO-14A
Ethyl benzene by EPA TO-15 & TO-14A	Carbon disulfide by EPA TO-15
Styrene by EPA TO-15 & TO-14A	1,4-Dioxane by EPA TO-15
Toluene by EPA TO-15 & TO-14A	
Total Xylenes by EPA TO-15	
1,1,1-Trichloroethane by EPA TO-15 & TO-14A	
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A	
1,1,2-Trichloroethane by EPA TO-15 & TO-14A	
1,1-Dichloroethane by EPA TO-15 & TO-14A	
1,1-Dichloroethene by EPA TO-15 & TO-14A	
1,2-Dichloroethane by EPA TO-15 & TO-14A	
1,2-Dichloropropane by EPA TO-15 & TO-14A	
Benzyl Chloride by EPA TO-15 & TO-14A	
Bromoform by EPA TO-15	
Bromomethane by EPA TO-15 & TO-14A	
Carbon tetrachloride by EPA TO-15 & TO-14A	
Chloroethane by EPA TO-15 & TO-14A	
Chloroform by EPA TO-15 & TO-14A	
Chloromethane by EPA TO-15 & TO-14A	
cis-1,2-Dichloroethene by EPA TO-15 & TO-14A	
cis-1,3-Dichloropropene by EPA TO-15 & TO-14A	
Methylene chloride by EPA TO -15 & TO-14A	
Tetrachloroethane by EPA TO-15 & TO-14A	
trans-1,2-Dichloroethene by EPA TO-15	
trans-1,3-Dichloropropene by EPA TO-15 & TO-14A	
Trichloroethene by EPA TO-15 & TO-14A	
Vinyl chloride by EPA TO -15	
2-Butanone by EPA TO-15	
4-Methyl-2-Pentanone by EPA TO-15	
Hexane by EPA TO-15	
Methyl tert-butyl ether by EPA TO-15	
Vinyl acetate by EPA TO-15	

This certification applies to samples analyzed in summa canisters.



Mobile
Geochemistry
Inc.

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 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Chain of Custody Record

Date: 11/14/13
H&P Project # AEE111513-11
Outside Lab:

Client: AMEC Collector: T. Taylor Page: 1 of 1
Address: Joe Bahrer 121 Innovation Ste 200 Client Project # NB101602SP
Project Contact: Joe Bahrer
Irvine, CA 92617 Location: Palomar St Wildomar, CA
Email: joseph.bahrer@amec.com Phone: 952-556-6003 Fax:

Geotracker EDF: Yes No
Global ID: _____
Excel EDD: Yes No
Temperature: _____
Intact: Yes No
Seal Intact: Yes No N/A
Cold: Yes No N/A
Turn around time: STW

Special Instructions: Report VOC list attached (MR)
4/10/14 TPH request see file
+TICS
Lab Work Order # E311062

SOIL/GW		SOIL VAPOR/AIR ANALYSIS															
8260B Full List	8260B	8260B	TPH gas	8015M TPH	418.1 TRPH	VOCs: Full List	VOCs: Short List/DTSC	VOCs: SAM, 8260B	Naphthalene	Oxygenates	TPHv gas	Ketones	Other	Leak Check Compound	Methane	Fixed Gases	
8260B	BTEX/OXY	TPH gas	g	d	ext	8260B	8260B	SAM A	8260B	8260B	8260B	8260B	8260B	1,1 DFA	OTHER	CO2	N2
						<input checked="" type="checkbox"/> TO-15	<input type="checkbox"/> TO-15	<input type="checkbox"/> SAM A	<input type="checkbox"/> TO-15	<input type="checkbox"/> TO-15	<input checked="" type="checkbox"/> TO-15	<input type="checkbox"/> TO-15	<input checked="" type="checkbox"/> TO-15	<input checked="" type="checkbox"/> TO-15			
						<input checked="" type="checkbox"/> TO-15	<input type="checkbox"/> TO-15	<input type="checkbox"/> SAM A	<input type="checkbox"/> TO-15	<input type="checkbox"/> TO-15	<input checked="" type="checkbox"/> TO-15	<input type="checkbox"/> TO-15	<input checked="" type="checkbox"/> TO-15	<input checked="" type="checkbox"/> TO-15			
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Summa Canister Soil Vapor Sampling



H&P Project #: AE 111313-TECH/SBI
 Site Address: Palomar St Wildomar, CA
 Consultant: AMEC
 Field Rep(s): Vinnie Robino
 H&P Rep(s): C. Smith, T. Taylor, D. DO

Date: 11/14/13 Office Use Only:
 Arrival Time: 0700 Reviewed: DB
 Departure Time: 1745 Scanned: _____
 Overtime: _____
 Approved By: _____ Page 1 of 1

Point ID	Summa Info						Probe Specs						Collection Information				Field Notes		
	Can #	Kit ID #	Start Time	Initial (" Hg)	End / Sample Time	End (" Hg) *	Probe Depth (ft)	Tube Length (ft)	Tube Dia (in.)	Sand Dia (in.)	Sand Ht (in.)	Dry Bent. Dia (in.)	Dry Bent. Ht (in.)	Purge Vol (mL)	Shut-in Test ✓=Pass	Flow Rate (mL/min)		Probe Vac ("Hg)	
1	14G-SV	268	185	1125	-27	1127	-3	8"	2	1/8	1	3	1	1	71	✓	7200	0	*
2	14B-SV	030	014	1136	-27	1139	-3	6"	2	1/8	1	3	1	1	71	✓	7200	0	
3	3B-SV	460	174	1350	-28	1357	-3	8"	2	1/8	1	3	1	1	71	✓	7200	1	
4	3G-SV	021	169	1408	-26	1410	-3	8"	2	1/8	1	3	1	1	71	✓	7200	0	
5	10L-SV	244	193	1513	-28	1518	-3	6"	2	1/8	1	3	1	1	71	✓	7200	0	
6	10B-SV	066	164	1528	-27	1530	-3	9"	2	1/8	1	3	1	1	71	✓	7200	0	
7	10B-SUREP	272	164	1531	-28	1534	-3	9"	2	1/8	1	3	1	1	471	✓	7200	0	
8																			
9																			
10																			
11																			
12																			

Purge Volume Calculation	
PVT Probe ID, if applicable:	
Tubing:	Length: <u>2</u> Diameter: <u>1/8</u> 1 Volume: <u>2</u>
Sand Pack (if included in purge volume calculation):	Height: <u>3</u> Diameter: <u>1</u> 1 Volume: <u>15</u>
Dry Bentonite (if included in purge volume calculation):	Height: <u>1</u> Diameter: <u>1</u> 1 Volume: <u>6</u>
PVT Increments:	<u>1</u> PV = <u>24</u> <u>3</u> PV = <u>71</u> <u>10</u> PV = <u>238</u>
PV Amount Selected:	<u>3</u> PV = <u>71</u> Selected by: <u>AMEC</u>

Leak Check Information
Leak Check Compound & Procedure: <u>1:1 DFA</u>
Other Notes: <u>* shutting Summa valve w/ -3" Hg per Theo (DISE)</u> <u>AMEC Summa sampling 10B+10L on their own</u>