

*Field Investigation of the Chemistry and Toxicity of TPH in Petroleum Vapors:
Implications for Potential Vapor Intrusion Hazards*

(Attachment 6 – Laboratory Reports)

Roger Brewer and Lynn Bailey
Hazard Evaluation and Emergency Response
Hawai'i Department of Health

March 2012 (DRAFT)

Attachment 6: Laboratory Reports

- **TO-3**
- **TO-15**
- **Summa Canister MA-APH**
- **TO-17 (MA-APH, TPH, BTEXN)**
- **ASTM1945D**

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160D

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-3 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160D

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/21/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------|---------------|-------------------------------|---------------------------|
| 01A | HAFB-SP43-VMP10 | Modified TO-3 | 5.2 "Hg | 15psi |
| 02A | HAFB-SP43-VMP11 | Modified TO-3 | 5.0 "Hg | 15psi |
| 03A | HAFB-SP43-VMP12 | Modified TO-3 | 4.5 "Hg | 15psi |
| 04A | HAFB-SP43-VMP16 | Modified TO-3 | 6.0 "Hg | 15psi |
| 05A | HAFB-SP43-VMP17 | Modified TO-3 | 5.5 "Hg | 15psi |
| 06A | FV-GP01-HDOH#2 | Modified TO-3 | 4.0 "Hg | 15psi |
| 07A | FV-GP08-HDOH#2 | Modified TO-3 | 5.0 "Hg | 15psi |
| 08A | FV-GP16R-HDOH#2 | Modified TO-3 | 5.5 "Hg | 15psi |
| 09A | JP8#1 | Modified TO-3 | 4.0 "Hg | 15psi |
| 10A | Lab Blank | Modified TO-3 | NA | NA |
| 11A | LCS | Modified TO-3 | NA | NA |
| 11AA | LCSD | Modified TO-3 | NA | NA |
| 11B | LCS | Modified TO-3 | NA | NA |
| 11BB | LCSD | Modified TO-3 | NA | NA |

CERTIFIED BY:



DATE: 10/21/11

Laboratory Director

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-3
Tetra Tech EM, Inc.
Workorder# 1110160D

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with photo ionization and flame ionization detection. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. The TPH (Gasoline Range) results are calculated using the response factor of Gasoline. A molecular weight of 100 is used to convert the TPH (Gasoline Range) ppmv result to ug/L.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>TO-3</i> | <i>ATL Modifications</i> |
|--------------------------------------|---|---|
| Daily Calibration Standard Frequency | Prior to sample analysis and every 4 - 6 hrs | Prior to sample analysis and after the analytical batch ≤ 20 samples |
| Initial Calibration Calculation | 4-point calibration using a linear regression model | 5-point calibration using average Response Factor |
| Initial Calibration Frequency | Weekly | When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation |
| Moisture Control | Nafion system | Sorbent system |
| Minimum Detection Limit (MDL) | Calculated using the equation $DL = A + 3.3S$, where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard | 40 CFR Pt. 136 App. B |
| Preparation of Standards | Levels achieved through dilution of gas mixture | Levels achieved through loading various volumes of the gas mixture |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The detection of Benzene may have been masked in sample HAFB-SP43-VMP10 due to complex hydrocarbon interference.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160D-01A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Toluene | 0.32 | 1.2 | 23 | 87 |
| Ethyl Benzene | 0.32 | 1.4 | 13 M | 58 M |
| m,p-Xylene | 0.32 | 1.4 | 37 M | 160 M |
| o-Xylene | 0.32 | 1.4 | 7.2 M | 31 M |
| TPH (Gasoline Range) | 8.1 | 33 | 5500 | 22000 |

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160D-02A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.32 | 1.0 | 3.1 M | 10 M |
| Toluene | 0.32 | 1.2 | 32 | 120 |
| Ethyl Benzene | 0.32 | 1.4 | 24 | 110 |
| m,p-Xylene | 0.32 | 1.4 | 46 M | 200 M |
| o-Xylene | 0.32 | 1.4 | 7.1 | 31 |
| TPH (Gasoline Range) | 8.1 | 33 | 7400 | 30000 |

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160D-03A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Toluene | 0.0024 | 0.0090 | 0.0036 | 0.014 |
| Ethyl Benzene | 0.0024 | 0.010 | 0.0027 M | 0.012 M |
| m,p-Xylene | 0.0024 | 0.010 | 0.0063 M | 0.027 M |
| TPH (Gasoline Range) | 0.060 | 0.24 | 0.78 | 3.2 |

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160D-04A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------|-------------------|-------------------|---------------|---------------|
| Toluene | 1.0 | 3.8 | 100 | 400 |

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160D-04A

| | | | | |
|----------------------|-----|-----|-------|-------|
| Ethyl Benzene | 1.0 | 4.4 | 24 | 110 |
| m,p-Xylene | 1.0 | 4.4 | 54 M | 230 M |
| o-Xylene | 1.0 | 4.4 | 5.5 | 24 |
| TPH (Gasoline Range) | 25 | 100 | 20000 | 82000 |

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160D-05A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.099 | 0.32 | 3.1 M | 9.8 M |
| Toluene | 0.099 | 0.37 | 9.6 | 36 |
| Ethyl Benzene | 0.099 | 0.43 | 4.9 | 21 |
| m,p-Xylene | 0.099 | 0.43 | 11 | 49 |
| o-Xylene | 0.099 | 0.43 | 2.0 | 8.9 |
| TPH (Gasoline Range) | 2.5 | 10 | 2000 | 8000 |

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160D-06A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.0023 | 0.0074 | 0.030 | 0.096 |
| Ethyl Benzene | 0.0023 | 0.010 | 0.061 | 0.26 |
| m,p-Xylene | 0.0023 | 0.010 | 0.053 M | 0.23 M |
| o-Xylene | 0.0023 | 0.010 | 0.0083 M | 0.036 M |
| TPH (Gasoline Range) | 0.058 | 0.24 | 9.5 | 39 |

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160D-07A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|---------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.032 | 0.10 | 0.76 | 2.4 |
| Toluene | 0.032 | 0.12 | 0.86 | 3.3 |
| Ethyl Benzene | 0.032 | 0.14 | 1.8 | 8.0 |

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160D-07A

| | | | | |
|----------------------|-------|------|-----|------|
| m,p-Xylene | 0.032 | 0.14 | 4.1 | 18 |
| o-Xylene | 0.032 | 0.14 | 1.2 | 5.3 |
| TPH (Gasoline Range) | 0.81 | 3.3 | 540 | 2200 |

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160D-08A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.099 | 0.32 | 0.70 | 2.2 |
| Toluene | 0.099 | 0.37 | 0.11 M | 0.42 M |
| Ethyl Benzene | 0.099 | 0.43 | 10 | 44 |
| m,p-Xylene | 0.099 | 0.43 | 4.1 M | 18 M |
| o-Xylene | 0.099 | 0.43 | 4.4 M | 19 M |
| TPH (Gasoline Range) | 2.5 | 10 | 1500 | 6100 |

Client Sample ID: JP8#1

Lab ID#: 1110160D-09A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.12 | 0.37 | 6.0 | 19 |
| Toluene | 0.12 | 0.44 | 18 | 67 |
| Ethyl Benzene | 0.12 | 0.50 | 4.8 | 21 |
| m,p-Xylene | 0.12 | 0.50 | 16 | 67 |
| o-Xylene | 0.12 | 0.50 | 7.3 | 32 |
| TPH (Gasoline Range) | 2.9 | 12 | 1800 | 7200 |

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160D-01A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|--|
| File Name: | d101307 | Date of Collection: 10/5/11 2:05:00 PM |
| Dil. Factor: | 325 | Date of Analysis: 10/13/11 09:25 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|----------------|----------------|
| Benzene | 0.32 | 1.0 | Not Detected M | Not Detected M |
| Toluene | 0.32 | 1.2 | 23 | 87 |
| Ethyl Benzene | 0.32 | 1.4 | 13 M | 58 M |
| m,p-Xylene | 0.32 | 1.4 | 37 M | 160 M |
| o-Xylene | 0.32 | 1.4 | 7.2 M | 31 M |
| TPH (Gasoline Range) | 8.1 | 33 | 5500 | 22000 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 95 | 75-150 |
| Fluorobenzene (PID) | 85 | 75-125 |

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160D-02A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|--|
| File Name: | d101308 | Date of Collection: 10/5/11 1:15:00 PM |
| Dil. Factor: | 323 | Date of Analysis: 10/13/11 10:17 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.32 | 1.0 | 3.1 M | 10 M |
| Toluene | 0.32 | 1.2 | 32 | 120 |
| Ethyl Benzene | 0.32 | 1.4 | 24 | 110 |
| m,p-Xylene | 0.32 | 1.4 | 46 M | 200 M |
| o-Xylene | 0.32 | 1.4 | 7.1 | 31 |
| TPH (Gasoline Range) | 8.1 | 33 | 7400 | 30000 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 110 | 75-150 |
| Fluorobenzene (PID) | 98 | 75-125 |

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160D-03A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d101309 | Date of Collection: 10/5/11 12:44:00 PM |
| Dil. Factor: | 2.38 | Date of Analysis: 10/13/11 11:08 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.0024 | 0.0076 | Not Detected | Not Detected |
| Toluene | 0.0024 | 0.0090 | 0.0036 | 0.014 |
| Ethyl Benzene | 0.0024 | 0.010 | 0.0027 M | 0.012 M |
| m,p-Xylene | 0.0024 | 0.010 | 0.0063 M | 0.027 M |
| o-Xylene | 0.0024 | 0.010 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 0.060 | 0.24 | 0.78 | 3.2 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 96 | 75-150 |
| Fluorobenzene (PID) | 82 | 75-125 |

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160D-04A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|--|
| File Name: | d101311 | Date of Collection: 10/5/11 1:42:00 PM |
| Dil. Factor: | 1010 | Date of Analysis: 10/14/11 07:07 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 1.0 | 3.2 | Not Detected | Not Detected |
| Toluene | 1.0 | 3.8 | 100 | 400 |
| Ethyl Benzene | 1.0 | 4.4 | 24 | 110 |
| m,p-Xylene | 1.0 | 4.4 | 54 M | 230 M |
| o-Xylene | 1.0 | 4.4 | 5.5 | 24 |
| TPH (Gasoline Range) | 25 | 100 | 20000 | 82000 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 98 | 75-150 |
| Fluorobenzene (PID) | 88 | 75-125 |

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160D-05A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d101312 | Date of Collection: 10/5/11 11:52:00 AM |
| Dil. Factor: | 98.8 | Date of Analysis: 10/14/11 07:50 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.099 | 0.32 | 3.1 M | 9.8 M |
| Toluene | 0.099 | 0.37 | 9.6 | 36 |
| Ethyl Benzene | 0.099 | 0.43 | 4.9 | 21 |
| m,p-Xylene | 0.099 | 0.43 | 11 | 49 |
| o-Xylene | 0.099 | 0.43 | 2.0 | 8.9 |
| TPH (Gasoline Range) | 2.5 | 10 | 2000 | 8000 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 97 | 75-150 |
| Fluorobenzene (PID) | 86 | 75-125 |

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160D-06A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|--|
| File Name: | d101318 | Date of Collection: 10/6/11 1:45:00 PM |
| Dil. Factor: | 2.33 | Date of Analysis: 10/14/11 12:09 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0023 | 0.0074 | 0.030 | 0.096 |
| Toluene | 0.0023 | 0.0088 | Not Detected | Not Detected |
| Ethyl Benzene | 0.0023 | 0.010 | 0.061 | 0.26 |
| m,p-Xylene | 0.0023 | 0.010 | 0.053 M | 0.23 M |
| o-Xylene | 0.0023 | 0.010 | 0.0083 M | 0.036 M |
| TPH (Gasoline Range) | 0.058 | 0.24 | 9.5 | 39 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 102 | 75-150 |
| Fluorobenzene (PID) | 86 | 75-125 |

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160D-07A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|--|
| File Name: | d101317 | Date of Collection: 10/6/11 1:06:00 PM |
| Dil. Factor: | 32.3 | Date of Analysis: 10/14/11 11:26 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.032 | 0.10 | 0.76 | 2.4 |
| Toluene | 0.032 | 0.12 | 0.86 | 3.3 |
| Ethyl Benzene | 0.032 | 0.14 | 1.8 | 8.0 |
| m,p-Xylene | 0.032 | 0.14 | 4.1 | 18 |
| o-Xylene | 0.032 | 0.14 | 1.2 | 5.3 |
| TPH (Gasoline Range) | 0.81 | 3.3 | 540 | 2200 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|------------------|
| Fluorobenzene (FID) | 97 | 75-150 |
| Fluorobenzene (PID) | 78 | 75-125 |

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160D-08A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d101315 | Date of Collection: 10/6/11 12:19:00 PM |
| Dil. Factor: | 98.8 | Date of Analysis: 10/14/11 09:57 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.099 | 0.32 | 0.70 | 2.2 |
| Toluene | 0.099 | 0.37 | 0.11 M | 0.42 M |
| Ethyl Benzene | 0.099 | 0.43 | 10 | 44 |
| m,p-Xylene | 0.099 | 0.43 | 4.1 M | 18 M |
| o-Xylene | 0.099 | 0.43 | 4.4 M | 19 M |
| TPH (Gasoline Range) | 2.5 | 10 | 1500 | 6100 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 97 | 75-150 |
| Fluorobenzene (PID) | 76 | 75-125 |

Client Sample ID: JP8#1

Lab ID#: 1110160D-09A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|---|
| File Name: | d101313 | Date of Collection: 10/6/11 3:15:00 PM |
| Dil. Factor: | 116 | Date of Analysis: 10/14/11 08:35 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|------------------------------|------------------------------|--------------------------|--------------------------|
| Benzene | 0.12 | 0.37 | 6.0 | 19 |
| Toluene | 0.12 | 0.44 | 18 | 67 |
| Ethyl Benzene | 0.12 | 0.50 | 4.8 | 21 |
| m,p-Xylene | 0.12 | 0.50 | 16 | 67 |
| o-Xylene | 0.12 | 0.50 | 7.3 | 32 |
| TPH (Gasoline Range) | 2.9 | 12 | 1800 | 7200 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|--------------------------|
| Fluorobenzene (FID) | 113 | 75-150 |
| Fluorobenzene (PID) | 84 | 75-125 |

Client Sample ID: Lab Blank

Lab ID#: 1110160D-10A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d101305 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/13/11 07:26 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|------------------------------|------------------------------|--------------------------|--------------------------|
| Benzene | 0.0010 | 0.0032 | Not Detected | Not Detected |
| Toluene | 0.0010 | 0.0038 | Not Detected | Not Detected |
| Ethyl Benzene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| m,p-Xylene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| o-Xylene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 0.025 | 0.10 | Not Detected | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|--------------------------|
| Fluorobenzene (FID) | 108 | 75-150 |
| Fluorobenzene (PID) | 94 | 75-125 |

Client Sample ID: LCS

Lab ID#: 1110160D-11A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|----------|-------------------------------------|
| File Name: | d101304b | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/13/11 06:34 PM |

| Compound | %Recovery |
|---------------|-----------|
| Benzene | 88 |
| Toluene | 83 |
| Ethyl Benzene | 78 |
| m,p-Xylene | 80 |
| o-Xylene | 85 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (PID) | 91 | 75-125 |

Client Sample ID: LCSD

Lab ID#: 1110160D-11AA

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|----------|-------------------------------------|
| File Name: | d101323b | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/14/11 04:02 PM |

| Compound | %Recovery |
|---------------|-----------|
| Benzene | 86 |
| Toluene | 84 |
| Ethyl Benzene | 77 |
| m,p-Xylene | 78 |
| o-Xylene | 82 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (PID) | 92 | 75-125 |

Client Sample ID: LCS

Lab ID#: 1110160D-11B

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|-------------------------------------|
| File Name: | d101302 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/13/11 05:17 PM |

| Compound | %Recovery |
|----------------------|-----------|
| TPH (Gasoline Range) | 97 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 119 | 75-150 |

Client Sample ID: LCSD

Lab ID#: 1110160D-11BB

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|-------------------------------------|
| File Name: | d101321 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/14/11 02:35 PM |

| Compound | %Recovery |
|----------------------|-----------|
| TPH (Gasoline Range) | 90 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 105 | 75-150 |

11/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-3 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413C

Work Order Summary

| | | |
|---|---|--|
| CLIENT: PHONE: FAX: DATE RECEIVED: DATE COMPLETED: | Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 808-586-4328 808-586-7537 10/20/2011 11/02/2011 | BILL TO: Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 P.O. # 1077200 PROJECT # CONTACT: Kelly Buettner |
|---|---|--|

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|--------------------|---------------|-------------------------------|---------------------------|
| 01A | HAFB-VP26-B05(18) | Modified TO-3 | 4.0 "Hg | 5 psi |
| 02A | HAFB-VP26-B05(24) | Modified TO-3 | 3.5 "Hg | 5 psi |
| 03A | HAFB-VP26-B07(20) | Modified TO-3 | 2.5 "Hg | 5 psi |
| 04A | HAFB-VP26-B07(25) | Modified TO-3 | 4.5 "Hg | 5 psi |
| 05A | HAFB-ST03-B58(347) | Modified TO-3 | 4.4 "Hg | 5 psi |
| 06A | HAFB-ST03-B58(422) | Modified TO-3 | 5.0 "Hg | 5 psi |
| 07A | HAFB-ST03-B58(492) | Modified TO-3 | 4.6 "Hg | 5 psi |
| 08A | HAFB-ST03-B59(388) | Modified TO-3 | 5.0 "Hg | 5 psi |
| 09A | HH-OU1C-MW10SG | Modified TO-3 | 6.0 "Hg | 5 psi |
| 10A | HH-OU1C-MW22R | Modified TO-3 | 5.4 "Hg | 5 psi |
| 11A | HH-OU1C-OTNS1 | Modified TO-3 | 4.2 "Hg | 5 psi |
| 12A | GASOLINE#2 | Modified TO-3 | 2.6 "Hg | 5 psi |
| 13A | DIESEL#3 | Modified TO-3 | 3.2 "Hg | 5 psi |
| 14A | GASOLINE-EXHAUST | Modified TO-3 | 3.2 "Hg | 5 psi |
| 15A | DIESEL-EXHAUST | Modified TO-3 | 3.0 "Hg | 5 psi |
| 16A | Lab Blank | Modified TO-3 | NA | NA |
| 16B | Lab Blank | Modified TO-3 | NA | NA |

Continued on next page

WORK ORDER #: 1110413C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/02/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-------------|---------------|-------------------------------|---------------------------|
| 17A | LCS | Modified TO-3 | NA | NA |
| 17AA | LCSD | Modified TO-3 | NA | NA |
| 17B | LCS | Modified TO-3 | NA | NA |
| 17BB | LCSD | Modified TO-3 | NA | NA |
| 17C | LCS | Modified TO-3 | NA | NA |
| 17CC | LCSD | Modified TO-3 | NA | NA |
| 17D | LCS | Modified TO-3 | NA | NA |
| 17DD | LCSD | Modified TO-3 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 11/02/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-3
Tetra Tech EM, Inc.
Workorder# 1110413C

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with photo ionization and flame ionization detection. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system. The TPH (Gasoline Range) results are calculated using the response factor of Gasoline. A molecular weight of 100 is used to convert the TPH (Gasoline Range) ppmv result to ug/L.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>TO-3</i> | <i>ATL Modifications</i> |
|--------------------------------------|---|---|
| Daily Calibration Standard Frequency | Prior to sample analysis and every 4 - 6 hrs | Prior to sample analysis and after the analytical batch ≤ 20 samples |
| Initial Calibration Calculation | 4-point calibration using a linear regression model | 5-point calibration using average Response Factor |
| Initial Calibration Frequency | Weekly | When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation |
| Moisture Control | Nafion system | Sorbent system |
| Minimum Detection Limit (MDL) | Calculated using the equation $DL = A + 3.3S$, where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard | 40 CFR Pt. 136 App. B |
| Preparation of Standards | Levels achieved through dilution of gas mixture | Levels achieved through loading various volumes of the gas mixture |

Receiving Notes

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

The Chain of Custody contained incorrect method information. ATL proceeded with the analysis as per the original contract or verbal agreement.

Analytical Notes

The recovery of surrogate Fluorobenzene in samples HAFB-VP26-B05(24), HH-OU1C-MW10SG, and HH-OU1C-MW22R was outside control limits due to high level hydrocarbon matrix interference. Data is reported as qualified.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B - Compound present in laboratory blank greater than reporting limit.
- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413C-01A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.62 | 2.0 | 46 M | 150 M |
| Toluene | 0.62 | 2.3 | 52 | 200 |
| Ethyl Benzene | 0.62 | 2.7 | 5.7 | 25 |
| m,p-Xylene | 0.62 | 2.7 | 8.1 | 35 |
| o-Xylene | 0.62 | 2.7 | 1.8 M | 7.8 M |
| TPH (Gasoline Range) | 16 | 63 | 11000 | 46000 |

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413C-02A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 3.0 | 9.7 | 320 | 1000 |
| Toluene | 3.0 | 11 | 32 | 120 |
| TPH (Gasoline Range) | 76 | 310 | 77000 | 320000 |

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413C-03A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.58 | 1.9 | 58 M | 180 M |
| Toluene | 0.58 | 2.2 | 35 | 130 |
| Ethyl Benzene | 0.58 | 2.5 | 5.6 | 24 |
| m,p-Xylene | 0.58 | 2.5 | 3.5 | 15 |
| TPH (Gasoline Range) | 15 | 60 | 10000 | 42000 |

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413C-04A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------|-------------------|-------------------|---------------|---------------|
| Benzene | 2.0 | 6.3 | 220 | 700 |
| Toluene | 2.0 | 7.5 | 42 | 160 |

Summary of Detected Compounds MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413C-04A

| | | | | |
|----------------------|-----|-----|-------|--------|
| m,p-Xylene | 2.0 | 8.6 | 2.2 | 9.5 |
| TPH (Gasoline Range) | 50 | 200 | 35000 | 140000 |

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413C-05A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Toluene | 0.026 | 0.099 | 0.89 | 3.4 |
| m,p-Xylene | 0.026 | 0.11 | 4.7 M | 20 M |
| o-Xylene | 0.026 | 0.11 | 1.4 | 5.9 |
| TPH (Gasoline Range) | 0.66 | 2.7 | 350 | 1400 |

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413C-06A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.022 | 0.069 | 0.16 M | 0.50 M |
| Toluene | 0.022 | 0.081 | 1.1 | 4.0 |
| m,p-Xylene | 0.022 | 0.093 | 5.2 M | 23 M |
| o-Xylene | 0.022 | 0.093 | 1.5 | 6.4 |
| TPH (Gasoline Range) | 0.54 | 2.2 | 410 | 1700 |

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413C-07A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.026 | 0.084 | 0.24 M | 0.75 M |
| Toluene | 0.026 | 0.099 | 1.1 | 4.1 |
| m,p-Xylene | 0.026 | 0.11 | 5.2 M | 23 M |
| o-Xylene | 0.026 | 0.11 | 1.5 | 6.3 |
| TPH (Gasoline Range) | 0.66 | 2.7 | 410 | 1700 |

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413C-08A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0034 | 0.011 | 0.18 | 0.58 |
| Toluene | 0.0034 | 0.013 | 0.17 | 0.64 |
| Ethyl Benzene | 0.0034 | 0.014 | 0.067 M | 0.29 M |
| m,p-Xylene | 0.0034 | 0.014 | 0.62 | 2.7 |
| o-Xylene | 0.0034 | 0.014 | 0.21 | 0.90 |
| TPH (Gasoline Range) | 0.084 | 0.34 | 43 | 180 |

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413C-09A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 1.7 | 5.4 | 110 M | 360 M |
| Toluene | 1.7 | 6.3 | 65 | 250 |
| Ethyl Benzene | 1.7 | 7.3 | 6.7 | 29 |
| m,p-Xylene | 1.7 | 7.3 | 12 M | 53 M |
| o-Xylene | 1.7 | 7.3 | 1.8 | 8.0 |
| TPH (Gasoline Range) | 42 | 170 | 25000 | 100000 |

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413C-10A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.65 | 2.1 | 42 M | 130 M |
| Toluene | 0.65 | 2.4 | 19 | 70 |
| Ethyl Benzene | 0.65 | 2.8 | 3.5 | 15 |
| m,p-Xylene | 0.65 | 2.8 | 7.3 M | 32 M |
| o-Xylene | 0.65 | 2.8 | 1.8 | 7.8 |
| TPH (Gasoline Range) | 16 | 67 | 9500 | 39000 |

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413C-11A

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413C-11A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0021 | 0.0067 | 0.011 M | 0.034 M |
| TPH (Gasoline Range) | 0.052 | 0.21 | 0.51 | 2.1 |

Client Sample ID: GASOLINE#2

Lab ID#: 1110413C-12A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.15 | 0.47 | 8.7 | 28 |
| Toluene | 0.15 | 0.55 | 24 | 92 |
| Ethyl Benzene | 0.15 | 0.64 | 1.7 | 7.5 |
| m,p-Xylene | 0.15 | 0.64 | 6.6 | 29 |
| o-Xylene | 0.15 | 0.64 | 2.2 | 9.5 |
| TPH (Gasoline Range) | 3.7 | 15 | 920 | 3800 |

Client Sample ID: DIESEL#3

Lab ID#: 1110413C-13A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0076 | 0.024 | 0.64 M | 2.0 M |
| Toluene | 0.0076 | 0.029 | 1.6 | 6.2 |
| Ethyl Benzene | 0.0076 | 0.033 | 0.56 M | 2.4 M |
| m,p-Xylene | 0.0076 | 0.033 | 0.99 | 4.3 |
| o-Xylene | 0.0076 | 0.033 | 0.39 | 1.7 |
| TPH (Gasoline Range) | 0.19 | 0.78 | 130 | 540 |

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413C-14A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0040 | 0.013 | 1.7 | 5.4 |
| Toluene | 0.0040 | 0.015 | 2.1 | 8.0 |

Summary of Detected Compounds

MODIFIED EPA METHOD TO-3 GC/PID/FID

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413C-14A

| | | | | |
|----------------------|--------|-------|------|-----|
| Ethyl Benzene | 0.0040 | 0.017 | 0.31 | 1.3 |
| m,p-Xylene | 0.0040 | 0.017 | 0.96 | 4.2 |
| o-Xylene | 0.0040 | 0.017 | 0.51 | 2.2 |
| TPH (Gasoline Range) | 0.10 | 0.41 | 32 | 130 |

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413C-15A

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 0.0018 | 0.0058 | 0.011 | 0.036 |
| Toluene | 0.0018 | 0.0068 | 0.0039 | 0.015 |
| m,p-Xylene | 0.0018 | 0.0078 | 0.0024 | 0.010 |
| o-Xylene | 0.0018 | 0.0078 | 0.0020 | 0.0088 |
| TPH (Gasoline Range) | 0.045 | 0.18 | 0.25 | 1.0 |

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413C-01A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102505 | Date of Collection: 10/13/11 10:12:00 A |
| Dil. Factor: | 620 | Date of Analysis: 10/25/11 09:47 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.62 | 2.0 | 46 M | 150 M |
| Toluene | 0.62 | 2.3 | 52 | 200 |
| Ethyl Benzene | 0.62 | 2.7 | 5.7 | 25 |
| m,p-Xylene | 0.62 | 2.7 | 8.1 | 35 |
| o-Xylene | 0.62 | 2.7 | 1.8 M | 7.8 M |
| TPH (Gasoline Range) | 16 | 63 | 11000 | 46000 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 110 | 75-150 |
| Fluorobenzene (PID) | 94 | 75-125 |

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413C-02A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102609 | Date of Collection: 10/13/11 10:46:00 A |
| Dil. Factor: | 3040 | Date of Analysis: 10/26/11 01:37 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|------------------------------|------------------------------|--------------------------|--------------------------|
| Benzene | 3.0 | 9.7 | 320 | 1000 |
| Toluene | 3.0 | 11 | 32 | 120 |
| Ethyl Benzene | 3.0 | 13 | Not Detected | Not Detected |
| m,p-Xylene | 3.0 | 13 | Not Detected | Not Detected |
| o-Xylene | 3.0 | 13 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 76 | 310 | 77000 | 320000 |

Q = Exceeds Quality Control limits, due to matrix effects. Matrix effects confirmed by re-analysis.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|--------------------------|
| Fluorobenzene (FID) | 155 Q | 75-150 |
| Fluorobenzene (PID) | 114 | 75-125 |

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413C-03A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102506 | Date of Collection: 10/13/11 11:23:00 A |
| Dil. Factor: | 584 | Date of Analysis: 10/25/11 10:42 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.58 | 1.9 | 58 M | 180 M |
| Toluene | 0.58 | 2.2 | 35 | 130 |
| Ethyl Benzene | 0.58 | 2.5 | 5.6 | 24 |
| m,p-Xylene | 0.58 | 2.5 | 3.5 | 15 |
| o-Xylene | 0.58 | 2.5 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 15 | 60 | 10000 | 42000 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 113 | 75-150 |
| Fluorobenzene (PID) | 96 | 75-125 |

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413C-04A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102606 | Date of Collection: 10/13/11 11:49:00 A |
| Dil. Factor: | 1980 | Date of Analysis: 10/26/11 11:37 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|------------------------------|------------------------------|--------------------------|--------------------------|
| Benzene | 2.0 | 6.3 | 220 | 700 |
| Toluene | 2.0 | 7.5 | 42 | 160 |
| Ethyl Benzene | 2.0 | 8.6 | Not Detected | Not Detected |
| m,p-Xylene | 2.0 | 8.6 | 2.2 | 9.5 |
| o-Xylene | 2.0 | 8.6 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 50 | 200 | 35000 | 140000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|--------------------------|
| Fluorobenzene (FID) | 119 | 75-150 |
| Fluorobenzene (PID) | 100 | 75-125 |

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413C-05A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102508 | Date of Collection: 10/14/11 9:35:00 AM |
| Dil. Factor: | 26.2 | Date of Analysis: 10/25/11 12:05 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|----------------|----------------|
| Benzene | 0.026 | 0.084 | Not Detected | Not Detected |
| Toluene | 0.026 | 0.099 | 0.89 | 3.4 |
| Ethyl Benzene | 0.026 | 0.11 | Not Detected M | Not Detected M |
| m,p-Xylene | 0.026 | 0.11 | 4.7 M | 20 M |
| o-Xylene | 0.026 | 0.11 | 1.4 | 5.9 |
| TPH (Gasoline Range) | 0.66 | 2.7 | 350 | 1400 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 100 | 75-150 |
| Fluorobenzene (PID) | 80 | 75-125 |

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413C-06A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102510 | Date of Collection: 10/14/11 10:19:00 A |
| Dil. Factor: | 21.5 | Date of Analysis: 10/25/11 01:35 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.022 | 0.069 | 0.16 M | 0.50 M |
| Toluene | 0.022 | 0.081 | 1.1 | 4.0 |
| Ethyl Benzene | 0.022 | 0.093 | Not Detected M | Not Detected M |
| m,p-Xylene | 0.022 | 0.093 | 5.2 M | 23 M |
| o-Xylene | 0.022 | 0.093 | 1.5 | 6.4 |
| TPH (Gasoline Range) | 0.54 | 2.2 | 410 | 1700 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 102 | 75-150 |
| Fluorobenzene (PID) | 80 | 75-125 |

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413C-07A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102513 | Date of Collection: 10/14/11 10:36:00 A |
| Dil. Factor: | 26.3 | Date of Analysis: 10/25/11 03:50 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.026 | 0.084 | 0.24 M | 0.75 M |
| Toluene | 0.026 | 0.099 | 1.1 | 4.1 |
| Ethyl Benzene | 0.026 | 0.11 | Not Detected M | Not Detected M |
| m,p-Xylene | 0.026 | 0.11 | 5.2 M | 23 M |
| o-Xylene | 0.026 | 0.11 | 1.5 | 6.3 |
| TPH (Gasoline Range) | 0.66 | 2.7 | 410 | 1700 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 101 | 75-150 |
| Fluorobenzene (PID) | 83 | 75-125 |

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413C-08A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102512 | Date of Collection: 10/14/11 11:03:00 A |
| Dil. Factor: | 3.35 | Date of Analysis: 10/25/11 03:09 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0034 | 0.011 | 0.18 | 0.58 |
| Toluene | 0.0034 | 0.013 | 0.17 | 0.64 |
| Ethyl Benzene | 0.0034 | 0.014 | 0.067 M | 0.29 M |
| m,p-Xylene | 0.0034 | 0.014 | 0.62 | 2.7 |
| o-Xylene | 0.0034 | 0.014 | 0.21 | 0.90 |
| TPH (Gasoline Range) | 0.084 | 0.34 | 43 | 180 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 120 | 75-150 |
| Fluorobenzene (PID) | 97 | 75-125 |

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413C-09A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102608 | Date of Collection: 10/18/11 11:43:00 A |
| Dil. Factor: | 1680 | Date of Analysis: 10/26/11 12:48 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|----------------------|----------------------|------------------|------------------|
| Benzene | 1.7 | 5.4 | 110 M | 360 M |
| Toluene | 1.7 | 6.3 | 65 | 250 |
| Ethyl Benzene | 1.7 | 7.3 | 6.7 | 29 |
| m,p-Xylene | 1.7 | 7.3 | 12 M | 53 M |
| o-Xylene | 1.7 | 7.3 | 1.8 | 8.0 |
| TPH (Gasoline Range) | 42 | 170 | 25000 | 100000 |

M = Reported value may be biased due to apparent matrix interferences.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|------------------|
| Fluorobenzene (FID) | 211 Q | 75-150 |
| Fluorobenzene (PID) | 161 Q | 75-125 |

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413C-10A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102515 | Date of Collection: 10/18/11 11:09:00 A |
| Dil. Factor: | 652 | Date of Analysis: 10/25/11 05:21 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.65 | 2.1 | 42 M | 130 M |
| Toluene | 0.65 | 2.4 | 19 | 70 |
| Ethyl Benzene | 0.65 | 2.8 | 3.5 | 15 |
| m,p-Xylene | 0.65 | 2.8 | 7.3 M | 32 M |
| o-Xylene | 0.65 | 2.8 | 1.8 | 7.8 |
| TPH (Gasoline Range) | 16 | 67 | 9500 | 39000 |

M = Reported value may be biased due to apparent matrix interferences.

Q = Exceeds Quality Control limits, due to matrix effects. Matrix effects confirmed by re-analysis.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 198 Q | 75-150 |
| Fluorobenzene (PID) | 151 Q | 75-125 |

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413C-11A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102517 | Date of Collection: 10/18/11 10:31:00 A |
| Dil. Factor: | 2.09 | Date of Analysis: 10/25/11 07:21 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.0021 | 0.0067 | 0.011 M | 0.034 M |
| Toluene | 0.0021 | 0.0079 | Not Detected | Not Detected |
| Ethyl Benzene | 0.0021 | 0.0091 | Not Detected | Not Detected |
| m,p-Xylene | 0.0021 | 0.0091 | Not Detected | Not Detected |
| o-Xylene | 0.0021 | 0.0091 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 0.052 | 0.21 | 0.51 | 2.1 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 110 | 75-150 |
| Fluorobenzene (PID) | 92 | 75-125 |

Client Sample ID: GASOLINE#2

Lab ID#: 1110413C-12A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102516 | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 147 | Date of Analysis: 10/25/11 06:02 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.15 | 0.47 | 8.7 | 28 |
| Toluene | 0.15 | 0.55 | 24 | 92 |
| Ethyl Benzene | 0.15 | 0.64 | 1.7 | 7.5 |
| m,p-Xylene | 0.15 | 0.64 | 6.6 | 29 |
| o-Xylene | 0.15 | 0.64 | 2.2 | 9.5 |
| TPH (Gasoline Range) | 3.7 | 15 | 920 | 3800 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 115 | 75-150 |
| Fluorobenzene (PID) | 98 | 75-125 |

Client Sample ID: DIESEL#3

Lab ID#: 1110413C-13A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102519 | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 7.62 | Date of Analysis: 10/25/11 08:36 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.0076 | 0.024 | 0.64 M | 2.0 M |
| Toluene | 0.0076 | 0.029 | 1.6 | 6.2 |
| Ethyl Benzene | 0.0076 | 0.033 | 0.56 M | 2.4 M |
| m,p-Xylene | 0.0076 | 0.033 | 0.99 | 4.3 |
| o-Xylene | 0.0076 | 0.033 | 0.39 | 1.7 |
| TPH (Gasoline Range) | 0.19 | 0.78 | 130 | 540 |

M = Reported value may be biased due to apparent matrix interferences.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 117 | 75-150 |
| Fluorobenzene (PID) | 90 | 75-125 |

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413C-14A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102610 | Date of Collection: 10/18/11 8:50:00 AM |
| Dil. Factor: | 4.00 | Date of Analysis: 10/26/11 02:09 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0040 | 0.013 | 1.7 | 5.4 |
| Toluene | 0.0040 | 0.015 | 2.1 | 8.0 |
| Ethyl Benzene | 0.0040 | 0.017 | 0.31 | 1.3 |
| m,p-Xylene | 0.0040 | 0.017 | 0.96 | 4.2 |
| o-Xylene | 0.0040 | 0.017 | 0.51 | 2.2 |
| TPH (Gasoline Range) | 0.10 | 0.41 | 32 | 130 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 119 | 75-150 |
| Fluorobenzene (PID) | 96 | 75-125 |

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413C-15A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|---|
| File Name: | d102611 | Date of Collection: 10/18/11 8:45:00 AM |
| Dil. Factor: | 1.80 | Date of Analysis: 10/26/11 03:05 PM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|-------------------|-------------------|---------------|---------------|
| Benzene | 0.0018 | 0.0058 | 0.011 | 0.036 |
| Toluene | 0.0018 | 0.0068 | 0.0039 | 0.015 |
| Ethyl Benzene | 0.0018 | 0.0078 | Not Detected | Not Detected |
| m,p-Xylene | 0.0018 | 0.0078 | 0.0024 | 0.010 |
| o-Xylene | 0.0018 | 0.0078 | 0.0020 | 0.0088 |
| TPH (Gasoline Range) | 0.045 | 0.18 | 0.25 | 1.0 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 110 | 75-150 |
| Fluorobenzene (PID) | 94 | 75-125 |

Client Sample ID: Lab Blank

Lab ID#: 1110413C-16A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102504 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 09:06 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|--------------------------|--------------------------|----------------------|----------------------|
| Benzene | 0.0010 | 0.0032 | Not Detected | Not Detected |
| Toluene | 0.0010 | 0.0038 | Not Detected | Not Detected |
| Ethyl Benzene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| m,p-Xylene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| o-Xylene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 0.025 | 0.10 | Not Detected | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|----------------------|
| Fluorobenzene (FID) | 113 | 75-150 |
| Fluorobenzene (PID) | 97 | 75-125 |

Client Sample ID: Lab Blank

Lab ID#: 1110413C-16B

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|---------------------|----------------|--|
| File Name: | d102605 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/26/11 10:54 AM |

| Compound | Rpt. Limit (ppmv) | Rpt. Limit (ug/L) | Amount (ppmv) | Amount (ug/L) |
|----------------------|------------------------------|------------------------------|--------------------------|--------------------------|
| Benzene | 0.0010 | 0.0032 | Not Detected | Not Detected |
| Toluene | 0.0010 | 0.0038 | Not Detected | Not Detected |
| Ethyl Benzene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| m,p-Xylene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| o-Xylene | 0.0010 | 0.0043 | Not Detected | Not Detected |
| TPH (Gasoline Range) | 0.025 | 0.10 | Not Detected | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|------------------|--------------------------|
| Fluorobenzene (FID) | 112 | 75-150 |
| Fluorobenzene (PID) | 97 | 75-125 |

Client Sample ID: LCS

Lab ID#: 1110413C-17A

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|----------|-------------------------------------|
| File Name: | d102523b | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 10:45 PM |

| Compound | %Recovery |
|---------------|-----------|
| Benzene | 82 |
| Toluene | 90 |
| Ethyl Benzene | 82 |
| m,p-Xylene | 82 |
| o-Xylene | 86 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (PID) | 91 | 75-125 |

Client Sample ID: LCSD

Lab ID#: 1110413C-17AA

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|----------|-------------------------------------|
| File Name: | d102524b | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 11:10 PM |

| Compound | %Recovery |
|---------------|-----------|
| Benzene | 86 |
| Toluene | 89 |
| Ethyl Benzene | 83 |
| m,p-Xylene | 83 |
| o-Xylene | 87 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (PID) | 89 | 75-125 |

Client Sample ID: LCS

Lab ID#: 1110413C-17B

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|----------|-------------------------------------|
| File Name: | d102602b | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/26/11 08:58 AM |

| Compound | %Recovery |
|---------------|-----------|
| Benzene | 93 |
| Toluene | 87 |
| Ethyl Benzene | 81 |
| m,p-Xylene | 82 |
| o-Xylene | 87 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (PID) | 99 | 75-125 |

Client Sample ID: LCSD

Lab ID#: 1110413C-17BB

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|----------|-------------------------------------|
| File Name: | d102622b | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/26/11 10:07 PM |

| Compound | %Recovery |
|---------------|-----------|
| Benzene | 91 |
| Toluene | 91 |
| Ethyl Benzene | 88 |
| m,p-Xylene | 90 |
| o-Xylene | 95 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (PID) | 90 | 75-125 |

Client Sample ID: LCS

Lab ID#: 1110413C-17C

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|-------------------------------------|
| File Name: | d102502 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 07:50 AM |

| Compound | %Recovery |
|----------------------|-----------|
| TPH (Gasoline Range) | 103 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 107 | 75-150 |

Client Sample ID: LCSD

Lab ID#: 1110413C-17CC

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|-------------------------------------|
| File Name: | d102522 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 10:10 PM |

| Compound | %Recovery |
|----------------------|-----------|
| TPH (Gasoline Range) | 89 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 108 | 75-150 |

Client Sample ID: LCS

Lab ID#: 1110413C-17D

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|-------------------------------------|
| File Name: | d102604 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/26/11 10:03 AM |

| Compound | %Recovery |
|----------------------|-----------|
| TPH (Gasoline Range) | 96 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|------------------|
| Fluorobenzene (FID) | 115 | 75-150 |

Client Sample ID: LCSD

Lab ID#: 1110413C-17DD

MODIFIED EPA METHOD TO-3 GC/PID/FID

| | | |
|--------------|---------|-------------------------------------|
| File Name: | d102621 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/26/11 09:19 PM |

| Compound | %Recovery |
|----------------------|-----------|
| TPH (Gasoline Range) | 96 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|---------------------|-----------|---------------|
| Fluorobenzene (FID) | 103 | 75-150 |

6/9/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Fishing Village

Project #:

Workorder #: 1105519B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 5/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1105519B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Fishing Village

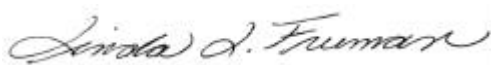
DATE RECEIVED: 05/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/09/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|------------------------------|----------------|-------------------------------|---------------------------|
| 01A | FV-GP-01-HDOH | Modified TO-15 | 5.5 "Hg | 15 psi |
| 02A | FV-GP-06R-HDOH | Modified TO-15 | 4.5 "Hg | 15 psi |
| 02AA | FV-GP-06R-HDOH Lab Duplicate | Modified TO-15 | 4.5 "Hg | 15 psi |
| 03A | FV-GP-08-HDOH | Modified TO-15 | 2.0 "Hg | 15 psi |
| 04A | FV-GP-16R-HDOH | Modified TO-15 | 5.5 "Hg | 15 psi |
| 05A | FV-GP-17-HDOH | Modified TO-15 | 5.5 "Hg | 15 psi |
| 06A | G-IPB20-HDOH | Modified TO-15 | 6.5 "Hg | 15 psi |
| 07A | G-IPH11-HDOH | Modified TO-15 | 4.0 "Hg | 15 psi |
| 08A | G-IPL19-HDOH | Modified TO-15 | 5.0 "Hg | 15 psi |
| 09A | G-IP28-HDOH | Modified TO-15 | 9.5 "Hg | 15 psi |
| 10A | G-SG12-HDOH | Modified TO-15 | 4.0 "Hg | 15 psi |
| 11A | Lab Blank | Modified TO-15 | NA | NA |
| 11B | Lab Blank | Modified TO-15 | NA | NA |
| 12A | CCV | Modified TO-15 | NA | NA |
| 12B | CCV | Modified TO-15 | NA | NA |
| 13A | LCS | Modified TO-15 | NA | NA |
| 13B | LCS | Modified TO-15 | NA | NA |

CERTIFIED BY:



DATE: 06/09/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1105519B**

Ten 1 Liter Summa Canister (MA APH Certified) samples were received on May 26, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on samples FV-GP-08-HDOH, G-IPB20-HDOH, G-IPH11-HDOH and G-IP28-HDOH due to the presence of high level target species.

Dilution was performed on samples FV-GP-01-HDOH, FV-GP-16R-HDOH and G-SG12-HDOH due to the presence of high level non-target species.

All Quality Control Limit exceedences and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519B-06A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-----------------|----------------------|------------------|-----------------------|-------------------|
| Tetrahydrofuran | 37 | 780 | 110 | 2300 |
| Benzene | 37 | 10000 | 120 | 34000 |
| Toluene | 37 | 1600 | 140 | 5900 |
| m,p-Xylene | 37 | 98 | 160 | 430 |
| o-Xylene | 37 | 47 | 160 | 200 |
| Styrene | 37 | 67 | 160 | 280 |

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519B-07A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------|----------------------|------------------|-----------------------|-------------------|
| Benzene | 12000 | 3000000 | 37000 | 9700000 |
| Heptane | 12000 | 16000 | 48000 | 64000 |
| Toluene | 12000 | 12000 | 44000 | 46000 |
| Ethyl Benzene | 12000 | 19000 | 50000 | 81000 |

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|----------------------|------------------|-----------------------|-------------------|
| Chloromethane | 4.8 | 11 | 10 | 22 |
| Ethanol | 4.8 | 13 | 9.1 | 25 |
| Acetone | 4.8 | 77 | 11 | 180 |
| Carbon Disulfide | 4.8 | 15 | 15 | 47 |
| Methylene Chloride | 1.2 | 1.4 | 4.2 | 4.7 |
| 2-Butanone (Methyl Ethyl Ketone) | 4.8 | 24 | 14 | 72 |
| Tetrahydrofuran | 1.2 | 330 | 3.6 | 970 |
| Cyclohexane | 1.2 | 1.2 | 4.2 | 4.3 |
| Benzene | 1.2 | 150 | 3.9 | 480 |
| Toluene | 1.2 | 14 | 4.6 | 51 |
| Ethyl Benzene | 1.2 | 2.7 | 5.2 | 12 |

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

| | | | | |
|------------------------|-----|-----|-----|-----|
| m,p-Xylene | 1.2 | 5.2 | 5.2 | 23 |
| o-Xylene | 1.2 | 3.0 | 5.2 | 13 |
| Styrene | 1.2 | 3.1 | 5.2 | 13 |
| 1,2,4-Trimethylbenzene | 1.2 | 1.3 | 5.9 | 6.4 |

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519B-09A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Benzene | 20000 | 6800000 | 63000 | 22000000 |
| Toluene | 20000 | 160000 | 74000 | 620000 |

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519B-10A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| Acetone | 13 | 16 | 32 | 39 |
| Methyl tert-butyl ether | 3.3 | 4.3 | 12 | 15 |
| Cyclohexane | 3.3 | 19 | 11 | 66 |
| Tetrachloroethene | 3.3 | 4.2 | 22 | 28 |

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2060223 | Date of Collection: 5/20/11 7:52:00 AM |
| Dil. Factor: | 73.7 | Date of Analysis: 6/2/11 08:43 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|-------------------|---------------|--------------------|----------------|
| Freon 12 | 37 | Not Detected | 180 | Not Detected |
| Freon 114 | 37 | Not Detected | 260 | Not Detected |
| Chloromethane | 150 | Not Detected | 300 | Not Detected |
| Vinyl Chloride | 150 | Not Detected | 380 | Not Detected |
| 1,3-Butadiene | 37 | Not Detected | 82 | Not Detected |
| Bromomethane | 37 | Not Detected | 140 | Not Detected |
| Chloroethane | 150 | Not Detected | 390 | Not Detected |
| Freon 11 | 37 | Not Detected | 210 | Not Detected |
| Ethanol | 150 | Not Detected | 280 | Not Detected |
| Freon 113 | 37 | Not Detected | 280 | Not Detected |
| 1,1-Dichloroethene | 37 | Not Detected | 150 | Not Detected |
| Acetone | 150 | Not Detected | 350 | Not Detected |
| 2-Propanol | 150 | Not Detected | 360 | Not Detected |
| Carbon Disulfide | 150 | Not Detected | 460 | Not Detected |
| 3-Chloropropene | 150 | Not Detected | 460 | Not Detected |
| Methylene Chloride | 37 | Not Detected | 130 | Not Detected |
| Methyl tert-butyl ether | 37 | Not Detected | 130 | Not Detected |
| trans-1,2-Dichloroethene | 37 | Not Detected | 150 | Not Detected |
| Hexane | 37 | Not Detected | 130 | Not Detected |
| 1,1-Dichloroethane | 37 | Not Detected | 150 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 150 | Not Detected | 430 | Not Detected |
| cis-1,2-Dichloroethene | 37 | Not Detected | 150 | Not Detected |
| Tetrahydrofuran | 37 | 780 | 110 | 2300 |
| Chloroform | 37 | Not Detected | 180 | Not Detected |
| 1,1,1-Trichloroethane | 37 | Not Detected | 200 | Not Detected |
| Cyclohexane | 37 | Not Detected | 130 | Not Detected |
| Carbon Tetrachloride | 37 | Not Detected | 230 | Not Detected |
| 2,2,4-Trimethylpentane | 37 | Not Detected | 170 | Not Detected |
| Benzene | 37 | 10000 | 120 | 34000 |
| 1,2-Dichloroethane | 37 | Not Detected | 150 | Not Detected |
| Heptane | 37 | Not Detected | 150 | Not Detected |
| Trichloroethene | 37 | Not Detected | 200 | Not Detected |
| 1,2-Dichloropropane | 37 | Not Detected | 170 | Not Detected |
| 1,4-Dioxane | 150 | Not Detected | 530 | Not Detected |
| Bromodichloromethane | 37 | Not Detected | 250 | Not Detected |
| cis-1,3-Dichloropropene | 37 | Not Detected | 170 | Not Detected |
| 4-Methyl-2-pentanone | 37 | Not Detected | 150 | Not Detected |
| Toluene | 37 | 1600 | 140 | 5900 |
| trans-1,3-Dichloropropene | 37 | Not Detected | 170 | Not Detected |
| 1,1,2-Trichloroethane | 37 | Not Detected | 200 | Not Detected |
| Tetrachloroethene | 37 | Not Detected | 250 | Not Detected |

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060223 | Date of Collection: 5/20/11 7:52:00 AM |
| Dil. Factor: | 73.7 | Date of Analysis: 6/2/11 08:43 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------------------|-------------------|---------------|--------------------|----------------|
| 2-Hexanone | 150 | Not Detected | 600 | Not Detected |
| Dibromochloromethane | 37 | Not Detected | 310 | Not Detected |
| 1,2-Dibromoethane (EDB) | 37 | Not Detected | 280 | Not Detected |
| Chlorobenzene | 37 | Not Detected | 170 | Not Detected |
| Ethyl Benzene | 37 | Not Detected | 160 | Not Detected |
| m,p-Xylene | 37 | 98 | 160 | 430 |
| o-Xylene | 37 | 47 | 160 | 200 |
| Styrene | 37 | 67 | 160 | 280 |
| Bromoform | 37 | Not Detected | 380 | Not Detected |
| Cumene | 37 | Not Detected | 180 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 37 | Not Detected | 250 | Not Detected |
| Propylbenzene | 37 | Not Detected | 180 | Not Detected |
| 4-Ethyltoluene | 37 | Not Detected | 180 | Not Detected |
| 1,3,5-Trimethylbenzene | 37 | Not Detected | 180 | Not Detected |
| 1,2,4-Trimethylbenzene | 37 | Not Detected | 180 | Not Detected |
| 1,3-Dichlorobenzene | 37 | Not Detected | 220 | Not Detected |
| 1,4-Dichlorobenzene | 37 | Not Detected | 220 | Not Detected |
| alpha-Chlorotoluene | 37 | Not Detected | 190 | Not Detected |
| 1,2-Dichlorobenzene | 37 | Not Detected | 220 | Not Detected |
| 1,2,4-Trichlorobenzene | 150 | Not Detected | 1100 | Not Detected |
| Hexachlorobutadiene | 150 | Not Detected | 1600 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 101 | 70-130 |
| 1,2-Dichloroethane-d4 | 112 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060226 | Date of Collection: 5/20/11 7:37:00 AM |
| Dil. Factor: | 23300 | Date of Analysis: 6/2/11 10:51 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|-------------------|---------------|--------------------|----------------|
| Freon 12 | 12000 | Not Detected | 58000 | Not Detected |
| Freon 114 | 12000 | Not Detected | 81000 | Not Detected |
| Chloromethane | 47000 | Not Detected | 96000 | Not Detected |
| Vinyl Chloride | 47000 | Not Detected | 120000 | Not Detected |
| 1,3-Butadiene | 12000 | Not Detected | 26000 | Not Detected |
| Bromomethane | 12000 | Not Detected | 45000 | Not Detected |
| Chloroethane | 47000 | Not Detected | 120000 | Not Detected |
| Freon 11 | 12000 | Not Detected | 65000 | Not Detected |
| Ethanol | 47000 | Not Detected | 88000 | Not Detected |
| Freon 113 | 12000 | Not Detected | 89000 | Not Detected |
| 1,1-Dichloroethene | 12000 | Not Detected | 46000 | Not Detected |
| Acetone | 47000 | Not Detected | 110000 | Not Detected |
| 2-Propanol | 47000 | Not Detected | 110000 | Not Detected |
| Carbon Disulfide | 47000 | Not Detected | 140000 | Not Detected |
| 3-Chloropropene | 47000 | Not Detected | 140000 | Not Detected |
| Methylene Chloride | 12000 | Not Detected | 40000 | Not Detected |
| Methyl tert-butyl ether | 12000 | Not Detected | 42000 | Not Detected |
| trans-1,2-Dichloroethene | 12000 | Not Detected | 46000 | Not Detected |
| Hexane | 12000 | Not Detected | 41000 | Not Detected |
| 1,1-Dichloroethane | 12000 | Not Detected | 47000 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 47000 | Not Detected | 140000 | Not Detected |
| cis-1,2-Dichloroethene | 12000 | Not Detected | 46000 | Not Detected |
| Tetrahydrofuran | 12000 | Not Detected | 34000 | Not Detected |
| Chloroform | 12000 | Not Detected | 57000 | Not Detected |
| 1,1,1-Trichloroethane | 12000 | Not Detected | 64000 | Not Detected |
| Cyclohexane | 12000 | Not Detected | 40000 | Not Detected |
| Carbon Tetrachloride | 12000 | Not Detected | 73000 | Not Detected |
| 2,2,4-Trimethylpentane | 12000 | Not Detected | 54000 | Not Detected |
| Benzene | 12000 | 3000000 | 37000 | 9700000 |
| 1,2-Dichloroethane | 12000 | Not Detected | 47000 | Not Detected |
| Heptane | 12000 | 16000 | 48000 | 64000 |
| Trichloroethene | 12000 | Not Detected | 63000 | Not Detected |
| 1,2-Dichloropropane | 12000 | Not Detected | 54000 | Not Detected |
| 1,4-Dioxane | 47000 | Not Detected | 170000 | Not Detected |
| Bromodichloromethane | 12000 | Not Detected | 78000 | Not Detected |
| cis-1,3-Dichloropropene | 12000 | Not Detected | 53000 | Not Detected |
| 4-Methyl-2-pentanone | 12000 | Not Detected | 48000 | Not Detected |
| Toluene | 12000 | 12000 | 44000 | 46000 |
| trans-1,3-Dichloropropene | 12000 | Not Detected | 53000 | Not Detected |
| 1,1,2-Trichloroethane | 12000 | Not Detected | 64000 | Not Detected |
| Tetrachloroethene | 12000 | Not Detected | 79000 | Not Detected |

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060226 | Date of Collection: 5/20/11 7:37:00 AM |
| Dil. Factor: | 23300 | Date of Analysis: 6/2/11 10:51 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------------------|-------------------|---------------|--------------------|----------------|
| 2-Hexanone | 47000 | Not Detected | 190000 | Not Detected |
| Dibromochloromethane | 12000 | Not Detected | 99000 | Not Detected |
| 1,2-Dibromoethane (EDB) | 12000 | Not Detected | 90000 | Not Detected |
| Chlorobenzene | 12000 | Not Detected | 54000 | Not Detected |
| Ethyl Benzene | 12000 | 19000 | 50000 | 81000 |
| m,p-Xylene | 12000 | Not Detected | 50000 | Not Detected |
| o-Xylene | 12000 | Not Detected | 50000 | Not Detected |
| Styrene | 12000 | Not Detected | 50000 | Not Detected |
| Bromoform | 12000 | Not Detected | 120000 | Not Detected |
| Cumene | 12000 | Not Detected | 57000 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 12000 | Not Detected | 80000 | Not Detected |
| Propylbenzene | 12000 | Not Detected | 57000 | Not Detected |
| 4-Ethyltoluene | 12000 | Not Detected | 57000 | Not Detected |
| 1,3,5-Trimethylbenzene | 12000 | Not Detected | 57000 | Not Detected |
| 1,2,4-Trimethylbenzene | 12000 | Not Detected | 57000 | Not Detected |
| 1,3-Dichlorobenzene | 12000 | Not Detected | 70000 | Not Detected |
| 1,4-Dichlorobenzene | 12000 | Not Detected | 70000 | Not Detected |
| alpha-Chlorotoluene | 12000 | Not Detected | 60000 | Not Detected |
| 1,2-Dichlorobenzene | 12000 | Not Detected | 70000 | Not Detected |
| 1,2,4-Trichlorobenzene | 47000 | Not Detected | 340000 | Not Detected |
| Hexachlorobutadiene | 47000 | Not Detected | 500000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 104 | 70-130 |
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060309 | Date of Collection: 5/20/11 8:38:00 AM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/3/11 11:13 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|-------------------|---------------|--------------------|----------------|
| Freon 12 | 1.2 | Not Detected | 6.0 | Not Detected |
| Freon 114 | 1.2 | Not Detected | 8.4 | Not Detected |
| Chloromethane | 4.8 | 11 | 10 | 22 |
| Vinyl Chloride | 4.8 | Not Detected | 12 | Not Detected |
| 1,3-Butadiene | 1.2 | Not Detected | 2.7 | Not Detected |
| Bromomethane | 1.2 | Not Detected | 4.7 | Not Detected |
| Chloroethane | 4.8 | Not Detected | 13 | Not Detected |
| Freon 11 | 1.2 | Not Detected | 6.8 | Not Detected |
| Ethanol | 4.8 | 13 | 9.1 | 25 |
| Freon 113 | 1.2 | Not Detected | 9.3 | Not Detected |
| 1,1-Dichloroethene | 1.2 | Not Detected | 4.8 | Not Detected |
| Acetone | 4.8 | 77 | 11 | 180 |
| 2-Propanol | 4.8 | Not Detected | 12 | Not Detected |
| Carbon Disulfide | 4.8 | 15 | 15 | 47 |
| 3-Chloropropene | 4.8 | Not Detected | 15 | Not Detected |
| Methylene Chloride | 1.2 | 1.4 | 4.2 | 4.7 |
| Methyl tert-butyl ether | 1.2 | Not Detected | 4.4 | Not Detected |
| trans-1,2-Dichloroethene | 1.2 | Not Detected | 4.8 | Not Detected |
| Hexane | 1.2 | Not Detected | 4.3 | Not Detected |
| 1,1-Dichloroethane | 1.2 | Not Detected | 4.9 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 4.8 | 24 | 14 | 72 |
| cis-1,2-Dichloroethene | 1.2 | Not Detected | 4.8 | Not Detected |
| Tetrahydrofuran | 1.2 | 330 | 3.6 | 970 |
| Chloroform | 1.2 | Not Detected | 5.9 | Not Detected |
| 1,1,1-Trichloroethane | 1.2 | Not Detected | 6.6 | Not Detected |
| Cyclohexane | 1.2 | 1.2 | 4.2 | 4.3 |
| Carbon Tetrachloride | 1.2 | Not Detected | 7.6 | Not Detected |
| 2,2,4-Trimethylpentane | 1.2 | Not Detected | 5.6 | Not Detected |
| Benzene | 1.2 | 150 | 3.9 | 480 |
| 1,2-Dichloroethane | 1.2 | Not Detected | 4.9 | Not Detected |
| Heptane | 1.2 | Not Detected | 5.0 | Not Detected |
| Trichloroethene | 1.2 | Not Detected | 6.5 | Not Detected |
| 1,2-Dichloropropane | 1.2 | Not Detected | 5.6 | Not Detected |
| 1,4-Dioxane | 4.8 | Not Detected | 17 | Not Detected |
| Bromodichloromethane | 1.2 | Not Detected | 8.1 | Not Detected |
| cis-1,3-Dichloropropene | 1.2 | Not Detected | 5.5 | Not Detected |
| 4-Methyl-2-pentanone | 1.2 | Not Detected | 5.0 | Not Detected |
| Toluene | 1.2 | 14 | 4.6 | 51 |
| trans-1,3-Dichloropropene | 1.2 | Not Detected | 5.5 | Not Detected |
| 1,1,2-Trichloroethane | 1.2 | Not Detected | 6.6 | Not Detected |
| Tetrachloroethene | 1.2 | Not Detected | 8.2 | Not Detected |

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060309 | Date of Collection: 5/20/11 8:38:00 AM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/3/11 11:13 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------------------|-------------------|---------------|--------------------|----------------|
| 2-Hexanone | 4.8 | Not Detected | 20 | Not Detected |
| Dibromochloromethane | 1.2 | Not Detected | 10 | Not Detected |
| 1,2-Dibromoethane (EDB) | 1.2 | Not Detected | 9.3 | Not Detected |
| Chlorobenzene | 1.2 | Not Detected | 5.6 | Not Detected |
| Ethyl Benzene | 1.2 | 2.7 | 5.2 | 12 |
| m,p-Xylene | 1.2 | 5.2 | 5.2 | 23 |
| o-Xylene | 1.2 | 3.0 | 5.2 | 13 |
| Styrene | 1.2 | 3.1 | 5.2 | 13 |
| Bromoform | 1.2 | Not Detected | 12 | Not Detected |
| Cumene | 1.2 | Not Detected | 5.9 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 1.2 | Not Detected | 8.3 | Not Detected |
| Propylbenzene | 1.2 | Not Detected | 5.9 | Not Detected |
| 4-Ethyltoluene | 1.2 | Not Detected | 5.9 | Not Detected |
| 1,3,5-Trimethylbenzene | 1.2 | Not Detected | 5.9 | Not Detected |
| 1,2,4-Trimethylbenzene | 1.2 | 1.3 | 5.9 | 6.4 |
| 1,3-Dichlorobenzene | 1.2 | Not Detected | 7.3 | Not Detected |
| 1,4-Dichlorobenzene | 1.2 | Not Detected | 7.3 | Not Detected |
| alpha-Chlorotoluene | 1.2 | Not Detected | 6.3 | Not Detected |
| 1,2-Dichlorobenzene | 1.2 | Not Detected | 7.3 | Not Detected |
| 1,2,4-Trichlorobenzene | 4.8 | Not Detected | 36 | Not Detected |
| Hexachlorobutadiene | 4.8 | Not Detected | 52 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 100 | 70-130 |
| 1,2-Dichloroethane-d4 | 125 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060312 | Date of Collection: 5/20/11 8:35:00 AM |
| Dil. Factor: | 39500 | Date of Analysis: 6/3/11 01:13 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|-------------------|---------------|--------------------|----------------|
| Freon 12 | 20000 | Not Detected | 98000 | Not Detected |
| Freon 114 | 20000 | Not Detected | 140000 | Not Detected |
| Chloromethane | 79000 | Not Detected | 160000 | Not Detected |
| Vinyl Chloride | 79000 | Not Detected | 200000 | Not Detected |
| 1,3-Butadiene | 20000 | Not Detected | 44000 | Not Detected |
| Bromomethane | 20000 | Not Detected | 77000 | Not Detected |
| Chloroethane | 79000 | Not Detected | 210000 | Not Detected |
| Freon 11 | 20000 | Not Detected | 110000 | Not Detected |
| Ethanol | 79000 | Not Detected | 150000 | Not Detected |
| Freon 113 | 20000 | Not Detected | 150000 | Not Detected |
| 1,1-Dichloroethene | 20000 | Not Detected | 78000 | Not Detected |
| Acetone | 79000 | Not Detected | 190000 | Not Detected |
| 2-Propanol | 79000 | Not Detected | 190000 | Not Detected |
| Carbon Disulfide | 79000 | Not Detected | 250000 | Not Detected |
| 3-Chloropropene | 79000 | Not Detected | 250000 | Not Detected |
| Methylene Chloride | 20000 | Not Detected | 69000 | Not Detected |
| Methyl tert-butyl ether | 20000 | Not Detected | 71000 | Not Detected |
| trans-1,2-Dichloroethene | 20000 | Not Detected | 78000 | Not Detected |
| Hexane | 20000 | Not Detected | 70000 | Not Detected |
| 1,1-Dichloroethane | 20000 | Not Detected | 80000 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 79000 | Not Detected | 230000 | Not Detected |
| cis-1,2-Dichloroethene | 20000 | Not Detected | 78000 | Not Detected |
| Tetrahydrofuran | 20000 | Not Detected | 58000 | Not Detected |
| Chloroform | 20000 | Not Detected | 96000 | Not Detected |
| 1,1,1-Trichloroethane | 20000 | Not Detected | 110000 | Not Detected |
| Cyclohexane | 20000 | Not Detected | 68000 | Not Detected |
| Carbon Tetrachloride | 20000 | Not Detected | 120000 | Not Detected |
| 2,2,4-Trimethylpentane | 20000 | Not Detected | 92000 | Not Detected |
| Benzene | 20000 | 6800000 | 63000 | 22000000 |
| 1,2-Dichloroethane | 20000 | Not Detected | 80000 | Not Detected |
| Heptane | 20000 | Not Detected | 81000 | Not Detected |
| Trichloroethene | 20000 | Not Detected | 110000 | Not Detected |
| 1,2-Dichloropropane | 20000 | Not Detected | 91000 | Not Detected |
| 1,4-Dioxane | 79000 | Not Detected | 280000 | Not Detected |
| Bromodichloromethane | 20000 | Not Detected | 130000 | Not Detected |
| cis-1,3-Dichloropropene | 20000 | Not Detected | 90000 | Not Detected |
| 4-Methyl-2-pentanone | 20000 | Not Detected | 81000 | Not Detected |
| Toluene | 20000 | 160000 | 74000 | 620000 |
| trans-1,3-Dichloropropene | 20000 | Not Detected | 90000 | Not Detected |
| 1,1,2-Trichloroethane | 20000 | Not Detected | 110000 | Not Detected |
| Tetrachloroethene | 20000 | Not Detected | 130000 | Not Detected |

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060312 | Date of Collection: 5/20/11 8:35:00 AM |
| Dil. Factor: | 39500 | Date of Analysis: 6/3/11 01:13 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------------------|-------------------|---------------|--------------------|----------------|
| 2-Hexanone | 79000 | Not Detected | 320000 | Not Detected |
| Dibromochloromethane | 20000 | Not Detected | 170000 | Not Detected |
| 1,2-Dibromoethane (EDB) | 20000 | Not Detected | 150000 | Not Detected |
| Chlorobenzene | 20000 | Not Detected | 91000 | Not Detected |
| Ethyl Benzene | 20000 | Not Detected | 86000 | Not Detected |
| m,p-Xylene | 20000 | Not Detected | 86000 | Not Detected |
| o-Xylene | 20000 | Not Detected | 86000 | Not Detected |
| Styrene | 20000 | Not Detected | 84000 | Not Detected |
| Bromoform | 20000 | Not Detected | 200000 | Not Detected |
| Cumene | 20000 | Not Detected | 97000 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 20000 | Not Detected | 140000 | Not Detected |
| Propylbenzene | 20000 | Not Detected | 97000 | Not Detected |
| 4-Ethyltoluene | 20000 | Not Detected | 97000 | Not Detected |
| 1,3,5-Trimethylbenzene | 20000 | Not Detected | 97000 | Not Detected |
| 1,2,4-Trimethylbenzene | 20000 | Not Detected | 97000 | Not Detected |
| 1,3-Dichlorobenzene | 20000 | Not Detected | 120000 | Not Detected |
| 1,4-Dichlorobenzene | 20000 | Not Detected | 120000 | Not Detected |
| alpha-Chlorotoluene | 20000 | Not Detected | 100000 | Not Detected |
| 1,2-Dichlorobenzene | 20000 | Not Detected | 120000 | Not Detected |
| 1,2,4-Trichlorobenzene | 79000 | Not Detected | 590000 | Not Detected |
| Hexachlorobutadiene | 79000 | Not Detected | 840000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 101 | 70-130 |
| 1,2-Dichloroethane-d4 | 111 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060315 | Date of Collection: 5/20/11 9:21:00 AM |
| Dil. Factor: | 6.66 | Date of Analysis: 6/3/11 02:56 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|-------------------|---------------|--------------------|----------------|
| Freon 12 | 3.3 | Not Detected | 16 | Not Detected |
| Freon 114 | 3.3 | Not Detected | 23 | Not Detected |
| Chloromethane | 13 | Not Detected | 28 | Not Detected |
| Vinyl Chloride | 13 | Not Detected | 34 | Not Detected |
| 1,3-Butadiene | 3.3 | Not Detected | 7.4 | Not Detected |
| Bromomethane | 3.3 | Not Detected | 13 | Not Detected |
| Chloroethane | 13 | Not Detected | 35 | Not Detected |
| Freon 11 | 3.3 | Not Detected | 19 | Not Detected |
| Ethanol | 13 | Not Detected | 25 | Not Detected |
| Freon 113 | 3.3 | Not Detected | 26 | Not Detected |
| 1,1-Dichloroethene | 3.3 | Not Detected | 13 | Not Detected |
| Acetone | 13 | 16 | 32 | 39 |
| 2-Propanol | 13 | Not Detected | 33 | Not Detected |
| Carbon Disulfide | 13 | Not Detected | 41 | Not Detected |
| 3-Chloropropene | 13 | Not Detected | 42 | Not Detected |
| Methylene Chloride | 3.3 | Not Detected | 12 | Not Detected |
| Methyl tert-butyl ether | 3.3 | 4.3 | 12 | 15 |
| trans-1,2-Dichloroethene | 3.3 | Not Detected | 13 | Not Detected |
| Hexane | 3.3 | Not Detected | 12 | Not Detected |
| 1,1-Dichloroethane | 3.3 | Not Detected | 13 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 13 | Not Detected | 39 | Not Detected |
| cis-1,2-Dichloroethene | 3.3 | Not Detected | 13 | Not Detected |
| Tetrahydrofuran | 3.3 | Not Detected | 9.8 | Not Detected |
| Chloroform | 3.3 | Not Detected | 16 | Not Detected |
| 1,1,1-Trichloroethane | 3.3 | Not Detected | 18 | Not Detected |
| Cyclohexane | 3.3 | 19 | 11 | 66 |
| Carbon Tetrachloride | 3.3 | Not Detected | 21 | Not Detected |
| 2,2,4-Trimethylpentane | 3.3 | Not Detected | 16 | Not Detected |
| Benzene | 3.3 | Not Detected | 11 | Not Detected |
| 1,2-Dichloroethane | 3.3 | Not Detected | 13 | Not Detected |
| Heptane | 3.3 | Not Detected | 14 | Not Detected |
| Trichloroethene | 3.3 | Not Detected | 18 | Not Detected |
| 1,2-Dichloropropane | 3.3 | Not Detected | 15 | Not Detected |
| 1,4-Dioxane | 13 | Not Detected | 48 | Not Detected |
| Bromodichloromethane | 3.3 | Not Detected | 22 | Not Detected |
| cis-1,3-Dichloropropene | 3.3 | Not Detected | 15 | Not Detected |
| 4-Methyl-2-pentanone | 3.3 | Not Detected | 14 | Not Detected |
| Toluene | 3.3 | Not Detected | 12 | Not Detected |
| trans-1,3-Dichloropropene | 3.3 | Not Detected | 15 | Not Detected |
| 1,1,2-Trichloroethane | 3.3 | Not Detected | 18 | Not Detected |
| Tetrachloroethene | 3.3 | 4.2 | 22 | 28 |

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2060315 | Date of Collection: 5/20/11 9:21:00 AM |
| Dil. Factor: | 6.66 | Date of Analysis: 6/3/11 02:56 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------------------|-------------------|---------------|--------------------|----------------|
| 2-Hexanone | 13 | Not Detected | 54 | Not Detected |
| Dibromochloromethane | 3.3 | Not Detected | 28 | Not Detected |
| 1,2-Dibromoethane (EDB) | 3.3 | Not Detected | 26 | Not Detected |
| Chlorobenzene | 3.3 | Not Detected | 15 | Not Detected |
| Ethyl Benzene | 3.3 | Not Detected | 14 | Not Detected |
| m,p-Xylene | 3.3 | Not Detected | 14 | Not Detected |
| o-Xylene | 3.3 | Not Detected | 14 | Not Detected |
| Styrene | 3.3 | Not Detected | 14 | Not Detected |
| Bromoform | 3.3 | Not Detected | 34 | Not Detected |
| Cumene | 3.3 | Not Detected | 16 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 3.3 | Not Detected | 23 | Not Detected |
| Propylbenzene | 3.3 | Not Detected | 16 | Not Detected |
| 4-Ethyltoluene | 3.3 | Not Detected | 16 | Not Detected |
| 1,3,5-Trimethylbenzene | 3.3 | Not Detected | 16 | Not Detected |
| 1,2,4-Trimethylbenzene | 3.3 | Not Detected | 16 | Not Detected |
| 1,3-Dichlorobenzene | 3.3 | Not Detected | 20 | Not Detected |
| 1,4-Dichlorobenzene | 3.3 | Not Detected | 20 | Not Detected |
| alpha-Chlorotoluene | 3.3 | Not Detected | 17 | Not Detected |
| 1,2-Dichlorobenzene | 3.3 | Not Detected | 20 | Not Detected |
| 1,2,4-Trichlorobenzene | 13 | Not Detected | 99 | Not Detected |
| Hexachlorobutadiene | 13 | Not Detected | 140 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 107 | 70-130 |
| 1,2-Dichloroethane-d4 | 117 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-----------------------------------|
| File Name: | 2060208 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 10:58 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|-------------------|---------------|--------------------|----------------|
| Freon 12 | 0.50 | Not Detected | 2.5 | Not Detected |
| Freon 114 | 0.50 | Not Detected | 3.5 | Not Detected |
| Chloromethane | 2.0 | Not Detected | 4.1 | Not Detected |
| Vinyl Chloride | 2.0 | Not Detected | 5.1 | Not Detected |
| 1,3-Butadiene | 0.50 | Not Detected | 1.1 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Chloroethane | 2.0 | Not Detected | 5.3 | Not Detected |
| Freon 11 | 0.50 | Not Detected | 2.8 | Not Detected |
| Ethanol | 2.0 | Not Detected | 3.8 | Not Detected |
| Freon 113 | 0.50 | Not Detected | 3.8 | Not Detected |
| 1,1-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Acetone | 2.0 | Not Detected | 4.8 | Not Detected |
| 2-Propanol | 2.0 | Not Detected | 4.9 | Not Detected |
| Carbon Disulfide | 2.0 | Not Detected | 6.2 | Not Detected |
| 3-Chloropropene | 2.0 | Not Detected | 6.3 | Not Detected |
| Methylene Chloride | 0.50 | Not Detected | 1.7 | Not Detected |
| Methyl tert-butyl ether | 0.50 | Not Detected | 1.8 | Not Detected |
| trans-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| 1,1-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 2.0 | Not Detected | 5.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Chloroform | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,1-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Cyclohexane | 0.50 | Not Detected | 1.7 | Not Detected |
| Carbon Tetrachloride | 0.50 | Not Detected | 3.1 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Benzene | 0.50 | Not Detected | 1.6 | Not Detected |
| 1,2-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| Heptane | 0.50 | Not Detected | 2.0 | Not Detected |
| Trichloroethene | 0.50 | Not Detected | 2.7 | Not Detected |
| 1,2-Dichloropropane | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,4-Dioxane | 2.0 | Not Detected | 7.2 | Not Detected |
| Bromodichloromethane | 0.50 | Not Detected | 3.4 | Not Detected |
| cis-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 4-Methyl-2-pentanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.50 | Not Detected | 1.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,1,2-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Tetrachloroethene | 0.50 | Not Detected | 3.4 | Not Detected |

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-----------------------------------|
| File Name: | 2060208 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 10:58 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------------------|-------------------|---------------|--------------------|----------------|
| 2-Hexanone | 2.0 | Not Detected | 8.2 | Not Detected |
| Dibromochloromethane | 0.50 | Not Detected | 4.2 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.50 | Not Detected | 3.8 | Not Detected |
| Chlorobenzene | 0.50 | Not Detected | 2.3 | Not Detected |
| Ethyl Benzene | 0.50 | Not Detected | 2.2 | Not Detected |
| m,p-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| o-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| Styrene | 0.50 | Not Detected | 2.1 | Not Detected |
| Bromoform | 0.50 | Not Detected | 5.2 | Not Detected |
| Cumene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.50 | Not Detected | 3.4 | Not Detected |
| Propylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 4-Ethyltoluene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,4-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| alpha-Chlorotoluene | 0.50 | Not Detected | 2.6 | Not Detected |
| 1,2-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,2,4-Trichlorobenzene | 2.0 | Not Detected | 15 | Not Detected |
| Hexachlorobutadiene | 2.0 | Not Detected | 21 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 113 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060306 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 09:11 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------------------------------|--------------------------|----------------------|---------------------------|-----------------------|
| Freon 12 | 0.50 | Not Detected | 2.5 | Not Detected |
| Freon 114 | 0.50 | Not Detected | 3.5 | Not Detected |
| Chloromethane | 2.0 | Not Detected | 4.1 | Not Detected |
| Vinyl Chloride | 2.0 | Not Detected | 5.1 | Not Detected |
| 1,3-Butadiene | 0.50 | Not Detected | 1.1 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Chloroethane | 2.0 | Not Detected | 5.3 | Not Detected |
| Freon 11 | 0.50 | Not Detected | 2.8 | Not Detected |
| Ethanol | 2.0 | Not Detected | 3.8 | Not Detected |
| Freon 113 | 0.50 | Not Detected | 3.8 | Not Detected |
| 1,1-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Acetone | 2.0 | Not Detected | 4.8 | Not Detected |
| 2-Propanol | 2.0 | Not Detected | 4.9 | Not Detected |
| Carbon Disulfide | 2.0 | Not Detected | 6.2 | Not Detected |
| 3-Chloropropene | 2.0 | Not Detected | 6.3 | Not Detected |
| Methylene Chloride | 0.50 | Not Detected | 1.7 | Not Detected |
| Methyl tert-butyl ether | 0.50 | Not Detected | 1.8 | Not Detected |
| trans-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| 1,1-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 2.0 | Not Detected | 5.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Chloroform | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,1-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Cyclohexane | 0.50 | Not Detected | 1.7 | Not Detected |
| Carbon Tetrachloride | 0.50 | Not Detected | 3.1 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Benzene | 0.50 | Not Detected | 1.6 | Not Detected |
| 1,2-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| Heptane | 0.50 | Not Detected | 2.0 | Not Detected |
| Trichloroethene | 0.50 | Not Detected | 2.7 | Not Detected |
| 1,2-Dichloropropane | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,4-Dioxane | 2.0 | Not Detected | 7.2 | Not Detected |
| Bromodichloromethane | 0.50 | Not Detected | 3.4 | Not Detected |
| cis-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 4-Methyl-2-pentanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.50 | Not Detected | 1.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,1,2-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Tetrachloroethene | 0.50 | Not Detected | 3.4 | Not Detected |

Client Sample ID: Lab Blank

Lab ID#: 1105519B-11B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-----------------------------------|
| File Name: | 2060306 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 09:11 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---------------------------|----------------------|------------------|-----------------------|-------------------|
| 2-Hexanone | 2.0 | Not Detected | 8.2 | Not Detected |
| Dibromochloromethane | 0.50 | Not Detected | 4.2 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.50 | Not Detected | 3.8 | Not Detected |
| Chlorobenzene | 0.50 | Not Detected | 2.3 | Not Detected |
| Ethyl Benzene | 0.50 | Not Detected | 2.2 | Not Detected |
| m,p-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| o-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| Styrene | 0.50 | Not Detected | 2.1 | Not Detected |
| Bromoform | 0.50 | Not Detected | 5.2 | Not Detected |
| Cumene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.50 | Not Detected | 3.4 | Not Detected |
| Propylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 4-Ethyltoluene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,4-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| alpha-Chlorotoluene | 0.50 | Not Detected | 2.6 | Not Detected |
| 1,2-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,2,4-Trichlorobenzene | 2.0 | Not Detected | 15 | Not Detected |
| Hexachlorobutadiene | 2.0 | Not Detected | 21 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 121 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1105519B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060204 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 08:02 AM |

| Compound | %Recovery |
|----------------------------------|-----------|
| Freon 12 | 100 |
| Freon 114 | 99 |
| Chloromethane | 94 |
| Vinyl Chloride | 95 |
| 1,3-Butadiene | 92 |
| Bromomethane | 94 |
| Chloroethane | 82 |
| Freon 11 | 104 |
| Ethanol | 101 |
| Freon 113 | 96 |
| 1,1-Dichloroethene | 88 |
| Acetone | 99 |
| 2-Propanol | 108 |
| Carbon Disulfide | 94 |
| 3-Chloropropene | 90 |
| Methylene Chloride | 93 |
| Methyl tert-butyl ether | 96 |
| trans-1,2-Dichloroethene | 91 |
| Hexane | 82 |
| 1,1-Dichloroethane | 86 |
| 2-Butanone (Methyl Ethyl Ketone) | 83 |
| cis-1,2-Dichloroethene | 84 |
| Tetrahydrofuran | 92 |
| Chloroform | 93 |
| 1,1,1-Trichloroethane | 96 |
| Cyclohexane | 90 |
| Carbon Tetrachloride | 100 |
| 2,2,4-Trimethylpentane | 85 |
| Benzene | 88 |
| 1,2-Dichloroethane | 98 |
| Heptane | 89 |
| Trichloroethene | 91 |
| 1,2-Dichloropropane | 82 |
| 1,4-Dioxane | 90 |
| Bromodichloromethane | 98 |
| cis-1,3-Dichloropropene | 95 |
| 4-Methyl-2-pentanone | 94 |
| Toluene | 82 |
| trans-1,3-Dichloropropene | 110 |
| 1,1,2-Trichloroethane | 91 |
| Tetrachloroethene | 95 |

Client Sample ID: CCV

Lab ID#: 1105519B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060204 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 08:02 AM |

| Compound | %Recovery |
|---------------------------|-----------|
| 2-Hexanone | 95 |
| Dibromochloromethane | 101 |
| 1,2-Dibromoethane (EDB) | 99 |
| Chlorobenzene | 92 |
| Ethyl Benzene | 90 |
| m,p-Xylene | 86 |
| o-Xylene | 89 |
| Styrene | 93 |
| Bromoform | 108 |
| Cumene | 94 |
| 1,1,2,2-Tetrachloroethane | 94 |
| Propylbenzene | 88 |
| 4-Ethyltoluene | 91 |
| 1,3,5-Trimethylbenzene | 84 |
| 1,2,4-Trimethylbenzene | 90 |
| 1,3-Dichlorobenzene | 92 |
| 1,4-Dichlorobenzene | 88 |
| alpha-Chlorotoluene | 113 |
| 1,2-Dichlorobenzene | 86 |
| 1,2,4-Trichlorobenzene | 82 |
| Hexachlorobutadiene | 90 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 101 | 70-130 |
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1105519B-12B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060304 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 07:50 AM |

| Compound | %Recovery |
|----------------------------------|-----------|
| Freon 12 | 99 |
| Freon 114 | 97 |
| Chloromethane | 96 |
| Vinyl Chloride | 98 |
| 1,3-Butadiene | 91 |
| Bromomethane | 93 |
| Chloroethane | 86 |
| Freon 11 | 102 |
| Ethanol | 107 |
| Freon 113 | 94 |
| 1,1-Dichloroethene | 87 |
| Acetone | 101 |
| 2-Propanol | 109 |
| Carbon Disulfide | 96 |
| 3-Chloropropene | 96 |
| Methylene Chloride | 97 |
| Methyl tert-butyl ether | 100 |
| trans-1,2-Dichloroethene | 86 |
| Hexane | 84 |
| 1,1-Dichloroethane | 89 |
| 2-Butanone (Methyl Ethyl Ketone) | 80 |
| cis-1,2-Dichloroethene | 82 |
| Tetrahydrofuran | 92 |
| Chloroform | 91 |
| 1,1,1-Trichloroethane | 95 |
| Cyclohexane | 88 |
| Carbon Tetrachloride | 99 |
| 2,2,4-Trimethylpentane | 86 |
| Benzene | 90 |
| 1,2-Dichloroethane | 103 |
| Heptane | 101 |
| Trichloroethene | 92 |
| 1,2-Dichloropropane | 84 |
| 1,4-Dioxane | 90 |
| Bromodichloromethane | 100 |
| cis-1,3-Dichloropropene | 100 |
| 4-Methyl-2-pentanone | 96 |
| Toluene | 85 |
| trans-1,3-Dichloropropene | 105 |
| 1,1,2-Trichloroethane | 90 |
| Tetrachloroethene | 89 |

Client Sample ID: CCV

Lab ID#: 1105519B-12B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060304 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 07:50 AM |

| Compound | %Recovery |
|---------------------------|-----------|
| 2-Hexanone | 95 |
| Dibromochloromethane | 97 |
| 1,2-Dibromoethane (EDB) | 93 |
| Chlorobenzene | 88 |
| Ethyl Benzene | 84 |
| m,p-Xylene | 80 |
| o-Xylene | 85 |
| Styrene | 90 |
| Bromoform | 105 |
| Cumene | 89 |
| 1,1,2,2-Tetrachloroethane | 88 |
| Propylbenzene | 86 |
| 4-Ethyltoluene | 86 |
| 1,3,5-Trimethylbenzene | 81 |
| 1,2,4-Trimethylbenzene | 86 |
| 1,3-Dichlorobenzene | 87 |
| 1,4-Dichlorobenzene | 83 |
| alpha-Chlorotoluene | 107 |
| 1,2-Dichlorobenzene | 84 |
| 1,2,4-Trichlorobenzene | 78 |
| Hexachlorobutadiene | 83 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 104 | 70-130 |
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1105519B-13A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060205 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 08:37 AM |

| Compound | %Recovery |
|----------------------------------|-----------|
| Freon 12 | 132 Q |
| Freon 114 | 124 |
| Chloromethane | 125 |
| Vinyl Chloride | 131 Q |
| 1,3-Butadiene | 124 |
| Bromomethane | 122 |
| Chloroethane | 113 |
| Freon 11 | 137 Q |
| Ethanol | 133 |
| Freon 113 | 120 |
| 1,1-Dichloroethene | 118 |
| Acetone | 131 |
| 2-Propanol | 138 |
| Carbon Disulfide | 136 |
| 3-Chloropropene | 132 |
| Methylene Chloride | 111 |
| Methyl tert-butyl ether | 128 |
| trans-1,2-Dichloroethene | 127 |
| Hexane | 106 |
| 1,1-Dichloroethane | 114 |
| 2-Butanone (Methyl Ethyl Ketone) | 107 |
| cis-1,2-Dichloroethene | 113 |
| Tetrahydrofuran | 111 |
| Chloroform | 121 |
| 1,1,1-Trichloroethane | 124 |
| Cyclohexane | 120 |
| Carbon Tetrachloride | 128 |
| 2,2,4-Trimethylpentane | 109 |
| Benzene | 114 |
| 1,2-Dichloroethane | 127 |
| Heptane | 116 |
| Trichloroethene | 121 |
| 1,2-Dichloropropane | 109 |
| 1,4-Dioxane | 114 |
| Bromodichloromethane | 123 |
| cis-1,3-Dichloropropene | 130 |
| 4-Methyl-2-pentanone | 115 |
| Toluene | 106 |
| trans-1,3-Dichloropropene | 128 |
| 1,1,2-Trichloroethane | 113 |
| Tetrachloroethene | 111 |

Client Sample ID: LCS

Lab ID#: 1105519B-13A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060205 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 08:37 AM |

| Compound | %Recovery |
|---------------------------|-----------|
| 2-Hexanone | 114 |
| Dibromochloromethane | 118 |
| 1,2-Dibromoethane (EDB) | 121 |
| Chlorobenzene | 110 |
| Ethyl Benzene | 105 |
| m,p-Xylene | 106 |
| o-Xylene | 104 |
| Styrene | 114 |
| Bromoform | 127 |
| Cumene | 113 |
| 1,1,2,2-Tetrachloroethane | 112 |
| Propylbenzene | 112 |
| 4-Ethyltoluene | 107 |
| 1,3,5-Trimethylbenzene | 101 |
| 1,2,4-Trimethylbenzene | 104 |
| 1,3-Dichlorobenzene | 110 |
| 1,4-Dichlorobenzene | 105 |
| alpha-Chlorotoluene | 137 Q |
| 1,2-Dichlorobenzene | 104 |
| 1,2,4-Trichlorobenzene | 99 |
| Hexachlorobutadiene | 102 |

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1105519B-13B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060305 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 08:27 AM |

| Compound | %Recovery |
|----------------------------------|-----------|
| Freon 12 | 128 |
| Freon 114 | 124 |
| Chloromethane | 125 |
| Vinyl Chloride | 128 |
| 1,3-Butadiene | 121 |
| Bromomethane | 116 |
| Chloroethane | 109 |
| Freon 11 | 131 Q |
| Ethanol | 125 |
| Freon 113 | 122 |
| 1,1-Dichloroethene | 120 |
| Acetone | 130 |
| 2-Propanol | 139 |
| Carbon Disulfide | 143 Q |
| 3-Chloropropene | 141 Q |
| Methylene Chloride | 115 |
| Methyl tert-butyl ether | 127 |
| trans-1,2-Dichloroethene | 122 |
| Hexane | 103 |
| 1,1-Dichloroethane | 112 |
| 2-Butanone (Methyl Ethyl Ketone) | 104 |
| cis-1,2-Dichloroethene | 108 |
| Tetrahydrofuran | 115 |
| Chloroform | 118 |
| 1,1,1-Trichloroethane | 120 |
| Cyclohexane | 114 |
| Carbon Tetrachloride | 124 |
| 2,2,4-Trimethylpentane | 105 |
| Benzene | 109 |
| 1,2-Dichloroethane | 124 |
| Heptane | 115 |
| Trichloroethene | 112 |
| 1,2-Dichloropropane | 104 |
| 1,4-Dioxane | 102 |
| Bromodichloromethane | 120 |
| cis-1,3-Dichloropropene | 123 |
| 4-Methyl-2-pentanone | 115 |
| Toluene | 101 |
| trans-1,3-Dichloropropene | 129 |
| 1,1,2-Trichloroethane | 107 |
| Tetrachloroethene | 108 |

Client Sample ID: LCS

Lab ID#: 1105519B-13B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2060305 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 08:27 AM |

| Compound | %Recovery |
|---------------------------|-----------|
| 2-Hexanone | 109 |
| Dibromochloromethane | 116 |
| 1,2-Dibromoethane (EDB) | 117 |
| Chlorobenzene | 107 |
| Ethyl Benzene | 102 |
| m,p-Xylene | 102 |
| o-Xylene | 102 |
| Styrene | 108 |
| Bromoform | 122 |
| Cumene | 110 |
| 1,1,2,2-Tetrachloroethane | 106 |
| Propylbenzene | 102 |
| 4-Ethyltoluene | 100 |
| 1,3,5-Trimethylbenzene | 96 |
| 1,2,4-Trimethylbenzene | 100 |
| 1,3-Dichlorobenzene | 106 |
| 1,4-Dichlorobenzene | 97 |
| alpha-Chlorotoluene | 129 |
| 1,2-Dichlorobenzene | 100 |
| 1,2,4-Trichlorobenzene | 92 |
| Hexachlorobutadiene | 94 |

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| Toluene-d8 | 104 | 70-130 |
| 1,2-Dichloroethane-d4 | 115 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

9/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214BR1

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214BR1

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

DATE RECEIVED: 06/09/2011

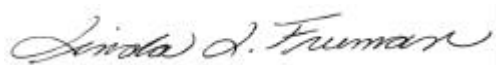
CONTACT: Kelly Buettner

DATE COMPLETED: 06/21/2011

DATE REISSUED: 09/01/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------|----------------|-------------------------------|---------------------------|
| 01A | A-SV04-HDOH | Modified TO-15 | 3.0 "Hg | 15 psi |
| 02A | A-SV013-HDOH | Modified TO-15 | 3.5 "Hg | 15 psi |
| 03A | A-AS4-HDOH | Modified TO-15 | 1.5 "Hg | 15 psi |
| 04A | Diesel#1-HDOH | Modified TO-15 | 5.0 "Hg | 15 psi |
| 04AA | Diesel#1-HDOH Lab Duplicate | Modified TO-15 | 5.0 "Hg | 15 psi |
| 05A | Ambient#1-HDOH | Modified TO-15 | 4.5 "Hg | 15 psi |
| 06A | Lab Blank | Modified TO-15 | NA | NA |
| 07A | CCV | Modified TO-15 | NA | NA |
| 08A | LCS | Modified TO-15 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 09/01/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1106214BR1**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample Diesel#1-HDOH due to the presence of high level non-target species.

Dilution was performed on sample Ambient#1-HDOH due to matrix interference.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

THE WORKORDER WAS REISSUED ON SEPTEMBER 01, 2011 TO REPORT SAMPLE AMBIENT#1-HDOH.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214BR1-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 56 | 230 | 230 | 940 |

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214BR1-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 57 | 130 | 230 | 530 |

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214BR1-03A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 53 | 76 | 220 | 310 |

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214BR1-04A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | 14000 | 430 | 49000 |
| TPH ref. to Gasoline (MW=100) | 6000 | 910000 | 25000 | 3700000 |

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214BR1-04AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 24 | 15000 E | 85 | 53000 E |
| TPH ref. to Gasoline (MW=100) | 1200 | 900000 | 4900 | 3700000 |

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214BR1-05A

**Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214BR1-05A

No Detections Were Found.

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214BR1-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061508 | Date of Collection: 6/3/11 8:15:00 AM |
| Dil. Factor: | 2.24 | Date of Analysis: 6/15/11 12:41 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.1 | Not Detected | 3.9 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 56 | 230 | 230 | 940 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214BR1-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061509 | Date of Collection: 6/3/11 8:58:00 AM |
| Dil. Factor: | 2.29 | Date of Analysis: 6/15/11 01:17 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.1 | Not Detected | 4.0 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 57 | 130 | 230 | 530 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 90 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214BR1-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2061510 | Date of Collection: 6/3/11 8:44:00 AM |
| Dil. Factor: | 2.13 | Date of Analysis: 6/15/11 01:53 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 1.1 | Not Detected | 3.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 53 | 76 | 220 | 310 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 86 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 90 | 70-130 |

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214BR1-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061512 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 242 | Date of Analysis: 6/15/11 03:12 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | 14000 | 430 | 49000 |
| TPH ref. to Gasoline (MW=100) | 6000 | 910000 | 25000 | 3700000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 90 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214BR1-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061511 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 48.4 | Date of Analysis: 6/15/11 02:31 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 24 | 15000 E | 85 | 53000 E |
| TPH ref. to Gasoline (MW=100) | 1200 | 900000 | 4900 | 3700000 |

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214BR1-05A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061521 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 4.76 | Date of Analysis: 6/15/11 09:25 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 2.4 | Not Detected | 8.4 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 120 | Not Detected | 490 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 83 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1106214BR1-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2061507 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 11:57 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|-------------------|---------------|--------------------|----------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 91 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 91 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1106214BR1-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2061504 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 10:10 AM |

| Compound | %Recovery |
|----------|-----------|
|----------|-----------|

| | |
|-------------------------------|-----|
| Hexane | 88 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1106214BR1-08A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2061505 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 10:45 AM |

| Compound | %Recovery |
|-------------------------------|------------------|
| Hexane | 95 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 85 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

6/22/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/21/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------|----------------|-------------------------------|---------------------------|
| 01A | A-SV04-HDOH | Modified TO-15 | 3.0 "Hg | 15 psi |
| 02A | A-SV013-HDOH | Modified TO-15 | 3.5 "Hg | 15 psi |
| 03A | A-AS4-HDOH | Modified TO-15 | 1.5 "Hg | 15 psi |
| 04A | Diesel#1-HDOH | Modified TO-15 | 5.0 "Hg | 15 psi |
| 04AA | Diesel#1-HDOH Lab Duplicate | Modified TO-15 | 5.0 "Hg | 15 psi |
| 05A | Ambient#1-HDOH | Modified TO-15 | 4.5 "Hg | 15 psi |
| 06A | Lab Blank | Modified TO-15 | NA | NA |
| 07A | CCV | Modified TO-15 | NA | NA |
| 08A | LCS | Modified TO-15 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 06/21/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1106214B**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample Diesel#1-HDOH due to the presence of high level non-target species.

Dilution was performed on sample Ambient#1-HDOH due to matrix interference.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214B-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 56 | 230 | 230 | 940 |

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214B-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 57 | 130 | 230 | 530 |

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214B-03A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 53 | 76 | 220 | 310 |

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214B-04A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | 14000 | 430 | 49000 |
| TPH ref. to Gasoline (MW=100) | 6000 | 910000 | 25000 | 3700000 |

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214B-04AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 24 | 15000 E | 85 | 53000 E |
| TPH ref. to Gasoline (MW=100) | 1200 | 900000 | 4900 | 3700000 |

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061508 | Date of Collection: 6/3/11 8:15:00 AM |
| Dil. Factor: | 2.24 | Date of Analysis: 6/15/11 12:41 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.1 | Not Detected | 3.9 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 56 | 230 | 230 | 940 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061509 | Date of Collection: 6/3/11 8:58:00 AM |
| Dil. Factor: | 2.29 | Date of Analysis: 6/15/11 01:17 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.1 | Not Detected | 4.0 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 57 | 130 | 230 | 530 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 90 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2061510 | Date of Collection: 6/3/11 8:44:00 AM |
| Dil. Factor: | 2.13 | Date of Analysis: 6/15/11 01:53 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 1.1 | Not Detected | 3.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 53 | 76 | 220 | 310 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 86 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 90 | 70-130 |

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061512 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 242 | Date of Analysis: 6/15/11 03:12 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | 14000 | 430 | 49000 |
| TPH ref. to Gasoline (MW=100) | 6000 | 910000 | 25000 | 3700000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 90 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214B-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 2061511 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 48.4 | Date of Analysis: 6/15/11 02:31 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 24 | 15000 E | 85 | 53000 E |
| TPH ref. to Gasoline (MW=100) | 1200 | 900000 | 4900 | 3700000 |

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1106214B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2061507 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 11:57 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 91 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 91 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1106214B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2061504 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 10:10 AM |

| Compound | %Recovery |
|----------|-----------|
|----------|-----------|

| | |
|-------------------------------|-----|
| Hexane | 88 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1106214B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2061505 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 10:45 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 95 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 85 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

7/8/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1106457B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/21/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 / 2 lists are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106457B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 06/21/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 07/08/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------------|--------------------------|-------------------------------|---------------------------|
| 01A | HAFB-VP26-B05(18)-HDOH | Modified TO-15 / 2 lists | 5.0 "Hg | 15 psi |
| 02A | HAFB-VP26-B05(24)-HDOH | Modified TO-15 / 2 lists | 5.0 "Hg | 15 psi |
| 03A | HAFB-VP26-B07(20)-HDOH | Modified TO-15 / 2 lists | 3.5 "Hg | 15 psi |
| 03AA | HAFB-VP26-B07(20)-HDOH Lab Duplic | Modified TO-15 / 2 lists | 3.5 "Hg | 15 psi |
| 04A | HAFB-VP26-B07(25)-HDOH | Modified TO-15 / 2 lists | 3.5 "Hg | 15 psi |
| 05A | HAFB-VP26-B08(21)-HDOH | Modified TO-15 / 2 lists | 4.0 "Hg | 15 psi |
| 06A | Lab Blank | Modified TO-15 / 2 lists | NA | NA |
| 07A | CCV | Modified TO-15 / 2 lists | NA | NA |
| 08A | LCS | Modified TO-15 / 2 lists | NA | NA |

CERTIFIED BY:



DATE: 07/08/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1106457B**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 21, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-VP26-B05(18)-HDOH, HAFB-VP26-B05(24)-HDOH, HAFB-VP26-B07(20)-HDOH, HAFB-VP26-B07(20)-HDOH Lab Duplicate, HAFB-VP26-B07(25)-HDOH and HAFB-VP26-B08(21)-HDOH due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457B-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1200 | 8600 | 4300 | 30000 |
| TPH ref. to Gasoline (MW=100) | 60000 | 8700000 | 250000 | 36000000 |

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457B-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 60000 | 3500000 | 210000 | 12000000 |
| TPH ref. to Gasoline (MW=100) | 3000000 | 72000000 | 12000000 | 290000000 |

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457B-03A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 57 | 1000 | 200 | 3700 |
| TPH ref. to Gasoline (MW=100) | 2800 | 5400000 | 12000 | 22000000 |

Client Sample ID: HAFB-VP26-B07(20)-HDOH Lab Duplicate

Lab ID#: 1106457B-03AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 15 | 1200 | 54 | 4100 |
| TPH ref. to Gasoline (MW=100) | 760 | 3900000 | 3100 | 16000000 |

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457B-04A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1100 | 66000 | 4000 | 230000 |
| TPH ref. to Gasoline (MW=100) | 57000 | 25000000 | 230000 | 100000000 |

**Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457B-05A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 16 | 6500 E | 55 | 23000 E |
| TPH ref. to Gasoline (MW=100) | 780 | 4800000 | 3200 | 20000000 |

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2062817 | Date of Collection: 6/16/11 11:44:00 AM |
| Dil. Factor: | 2420 | Date of Analysis: 6/29/11 06:53 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1200 | 8600 | 4300 | 30000 |
| TPH ref. to Gasoline (MW=100) | 60000 | 8700000 | 250000 | 36000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2062820 | Date of Collection: 6/16/11 12:32:00 PM |
| Dil. Factor: | 121000 | Date of Analysis: 6/29/11 09:09 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|-------------------|---------------|--------------------|----------------|
| 1,2-Dichloroethane | 60000 | Not Detected | 240000 | Not Detected |
| 1,2-Dibromoethane (EDB) | 60000 | Not Detected | 460000 | Not Detected |
| Hexane | 60000 | 3500000 | 210000 | 12000000 |
| TPH ref. to Gasoline (MW=100) | 3000000 | 72000000 | 12000000 | 290000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2062825 | Date of Collection: 6/16/11 12:42:00 PM |
| Dil. Factor: | 114 | Date of Analysis: 6/29/11 12:11 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 57 | 1000 | 200 | 3700 |
| TPH ref. to Gasoline (MW=100) | 2800 | 5400000 | 12000 | 22000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

Client Sample ID: HAFB-VP26-B07(20)-HDOH Lab Duplicate

Lab ID#: 1106457B-03AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2062823 | Date of Collection: 6/16/11 12:42:00 PM |
| Dil. Factor: | 30.5 | Date of Analysis: 6/29/11 10:46 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 15 | 1200 | 54 | 4100 |
| TPH ref. to Gasoline (MW=100) | 760 | 3900000 | 3100 | 16000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 129 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 114 | 70-130 |

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2062822 | Date of Collection: 6/16/11 1:25:00 PM |
| Dil. Factor: | 2290 | Date of Analysis: 6/29/11 10:17 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1100 | 66000 | 4000 | 230000 |
| TPH ref. to Gasoline (MW=100) | 57000 | 25000000 | 230000 | 100000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2062826 | Date of Collection: 6/16/11 11:18:00 AM |
| Dil. Factor: | 31.1 | Date of Analysis: 6/29/11 12:48 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 16 | 6500 E | 55 | 23000 E |
| TPH ref. to Gasoline (MW=100) | 780 | 4800000 | 3200 | 20000000 |

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 122 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1106457B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2062810 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/28/11 07:35 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|-------------------|---------------|--------------------|----------------|
| 1,2-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.50 | Not Detected | 3.8 | Not Detected |
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 91 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1106457B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2062804 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/28/11 03:54 PM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,2-Dichloroethane | 90 |
| 1,2-Dibromoethane (EDB) | 92 |
| Hexane | 94 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1106457B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2062807 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/28/11 05:43 PM |

| Compound | %Recovery |
|-------------------------------|------------|
| 1,2-Dichloroethane | 84 |
| 1,2-Dibromoethane (EDB) | 85 |
| Hexane | 85 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

8/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1107310B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 7/19/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1107310B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

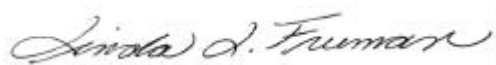
DATE RECEIVED: 07/19/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/02/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|---------------------|----------------|-------------------------------|---------------------------|
| 01A | HAFB-ST03-B58 (347) | Modified TO-15 | 5.5"Hg | 15 psi |
| 02A | HAFB-ST03-B58 (422) | Modified TO-15 | 4.0"Hg | 15 psi |
| 03A | HAFB-ST03-B58 (492) | Modified TO-15 | 5.0"Hg | 15 psi |
| 04A | HAFB-ST03-B58 (388) | Modified TO-15 | 4.5"Hg | 15 psi |
| 05A | Lab Blank | Modified TO-15 | NA | NA |
| 06A | CCV | Modified TO-15 | NA | NA |
| 07A | LCS | Modified TO-15 | NA | NA |
| 07AA | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 08/02/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1107310B**

Four 1 Liter Summa Canister (MA APH Certified) samples were received on July 19, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The Chain of Custody (COC) information for samples HAFB-ST03-B58 (347) and HAFB-ST03-B58 (492) did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-ST03-B58 (347), HAFB-ST03-B58 (422), HAFB-ST03-B58 (492) and HAFB-ST03-B58 (388) due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310B-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 4.9 | 74 | 17 | 260 |
| TPH ref. to Gasoline (MW=100) | 250 | 69000 | 1000 | 280000 |

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310B-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 3.1 | 38 | 11 | 130 |
| TPH ref. to Gasoline (MW=100) | 160 | 32000 | 630 | 130000 |

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310B-03A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 16 | 170 | 57 | 600 |
| TPH ref. to Gasoline (MW=100) | 810 | 210000 | 3300 | 860000 |

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310B-04A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 16 | 69 | 56 | 240 |
| TPH ref. to Gasoline (MW=100) | 790 | 200000 | 3200 | 820000 |

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2072127 | Date of Collection: 7/14/11 10:47:00 AM |
| Dil. Factor: | 9.88 | Date of Analysis: 7/21/11 09:52 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 4.9 | 74 | 17 | 260 |
| TPH ref. to Gasoline (MW=100) | 250 | 69000 | 1000 | 280000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 116 | 70-130 |

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2072128 | Date of Collection: 7/14/11 11:00:00 AM |
| Dil. Factor: | 6.21 | Date of Analysis: 7/21/11 10:21 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 3.1 | 38 | 11 | 130 |
| TPH ref. to Gasoline (MW=100) | 160 | 32000 | 630 | 130000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 95 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 114 | 70-130 |

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2072125 | Date of Collection: 7/14/11 11:55:00 AM |
| Dil. Factor: | 32.3 | Date of Analysis: 7/21/11 08:53 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 16 | 170 | 57 | 600 |
| TPH ref. to Gasoline (MW=100) | 810 | 210000 | 3300 | 860000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 116 | 70-130 |

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2072126 | Date of Collection: 7/14/11 12:08:00 PM |
| Dil. Factor: | 31.7 | Date of Analysis: 7/21/11 09:21 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 16 | 69 | 56 | 240 |
| TPH ref. to Gasoline (MW=100) | 790 | 200000 | 3200 | 820000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 115 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1107310B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2072110 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 7/21/11 11:14 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1107310B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2072102 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 7/21/11 06:45 AM |

| Compound | %Recovery |
|----------|-----------|
|----------|-----------|

| | |
|-------------------------------|-----|
| Hexane | 80 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 108 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1107310B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2072103 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 7/21/11 07:13 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 85 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 109 | 70-130 |

Client Sample ID: LCSD

Lab ID#: 1107310B-07AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2072104 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 7/21/11 07:42 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 87 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 110 | 70-130 |

9/9/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108544B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108544B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

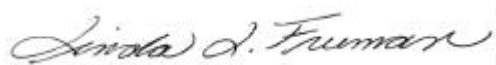
DATE RECEIVED: 08/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 09/09/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------|----------------|-------------------------------|---------------------------|
| 01A | HDOH-GASOLINE#1 | Modified TO-15 | 4.5 "Hg | 15 psi |
| 02A | HDOH-DIESEL#2 | Modified TO-15 | 4.0 "Hg | 15 psi |
| 02AA | HDOH-DIESEL#2 Lab Duplicate | Modified TO-15 | 4.0 "Hg | 15 psi |
| 03A | Lab Blank | Modified TO-15 | NA | NA |
| 04A | CCV | Modified TO-15 | NA | NA |
| 05A | LCS | Modified TO-15 | NA | NA |
| 05AA | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 09/09/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1108544B**

Two 1 Liter Summa Canister (MA APH Certified) samples were received on August 26, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HDOH-GASOLINE#1, HDOH-DIESEL#2 and HDOH-DIESEL#2 Lab Duplicate due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544B-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 24000 | 4200000 | 84000 | 15000000 |
| TPH ref. to Gasoline (MW=100) | 1200000 | 240000000 | 4900000 | 980000000 |

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544B-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 29 | 2200 | 100 | 7800 |
| TPH ref. to Gasoline (MW=100) | 1400 | 550000 | 6000 | 2200000 |

Client Sample ID: HDOH-DIESEL#2 Lab Duplicate

Lab ID#: 1108544B-02AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 29 | 2000 | 100 | 7000 |
| TPH ref. to Gasoline (MW=100) | 1400 | 500000 | 6000 | 2000000 |

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2083020 | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 47600 | Date of Analysis: 8/30/11 09:37 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 24000 | 4200000 | 84000 | 15000000 |
| TPH ref. to Gasoline (MW=100) | 1200000 | 240000000 | 4900000 | 980000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 89 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2083021 | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 58.2 | Date of Analysis: 8/30/11 11:16 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 29 | 2200 | 100 | 7800 |
| TPH ref. to Gasoline (MW=100) | 1400 | 550000 | 6000 | 2200000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 89 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 112 | 70-130 |

Client Sample ID: HDOH-DIESEL#2 Lab Duplicate

Lab ID#: 1108544B-02AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2083022 | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 58.2 | Date of Analysis: 8/31/11 12:07 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 29 | 2000 | 100 | 7000 |
| TPH ref. to Gasoline (MW=100) | 1400 | 500000 | 6000 | 2000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 86 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 112 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1108544B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2083008 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/30/11 09:51 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1108544B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2083002 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/30/11 05:47 AM |

| Compound | %Recovery |
|----------|-----------|
|----------|-----------|

| | |
|-------------------------------|-----|
| Hexane | 92 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1108544B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2083003 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/30/11 06:27 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 90 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 91 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 109 | 70-130 |

Client Sample ID: LCSD

Lab ID#: 1108544B-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2083004 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/30/11 06:57 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 90 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 89 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

8/26/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108300B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/15/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108300B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

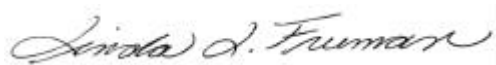
DATE RECEIVED: 08/15/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/26/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------|----------------|-------------------------------|---------------------------|
| 01A | HH-OUIC-MW10SG | Modified TO-15 | 4.0 "Hg | 15 psi |
| 02A | HH-OUIC-MW22R | Modified TO-15 | 5.0 "Hg | 15 psi |
| 03A | HH-OUIC-OTNS1 | Modified TO-15 | 3.2 "Hg | 15 psi |
| 03AA | HH-OUIC-OTNS1 Lab Duplicate | Modified TO-15 | 3.2 "Hg | 15 psi |
| 04A | Lab Blank | Modified TO-15 | NA | NA |
| 05A | CCV | Modified TO-15 | NA | NA |
| 06A | LCS | Modified TO-15 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 08/26/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1108300B**

Three 1 Liter Summa Canister (MA APH Certified) samples were received on August 15, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HH-OUIC-MW10SG, HH-OUIC-MW22R, HH-OUIC-OTNS1 and HH-OUIC-OTNS1 Lab Duplicate due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300B-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 780 | 150000 | 2700 | 520000 |
| TPH ref. to Gasoline (MW=100) | 39000 | 32000000 | 160000 | 130000000 |

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300B-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 480 | 73000 | 1700 | 260000 |
| TPH ref. to Gasoline (MW=100) | 24000 | 11000000 | 99000 | 45000000 |

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300B-03A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 76 | 540 | 270 | 1900 |
| TPH ref. to Gasoline (MW=100) | 3800 | 390000 | 15000 | 1600000 |

Client Sample ID: HH-OUIC-OTNS1 Lab Duplicate

Lab ID#: 1108300B-03AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 76 | 460 | 270 | 1600 |
| TPH ref. to Gasoline (MW=100) | 3800 | 340000 | 15000 | 1400000 |

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2081927 | Date of Collection: 8/11/11 2:03:00 PM |
| Dil. Factor: | 1550 | Date of Analysis: 8/19/11 11:20 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 780 | 150000 | 2700 | 520000 |
| TPH ref. to Gasoline (MW=100) | 39000 | 32000000 | 160000 | 130000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 93 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 109 | 70-130 |

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2081917 | Date of Collection: 8/11/11 1:38:00 PM |
| Dil. Factor: | 968 | Date of Analysis: 8/19/11 03:18 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 480 | 73000 | 1700 | 260000 |
| TPH ref. to Gasoline (MW=100) | 24000 | 11000000 | 99000 | 45000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 92 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2081916 | Date of Collection: 8/11/11 2:38:00 PM |
| Dil. Factor: | 151 | Date of Analysis: 8/19/11 02:38 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 76 | 540 | 270 | 1900 |
| TPH ref. to Gasoline (MW=100) | 3800 | 390000 | 15000 | 1600000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

Client Sample ID: HH-OUIC-OTNS1 Lab Duplicate

Lab ID#: 1108300B-03AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2081921 | Date of Collection: 8/11/11 2:38:00 PM |
| Dil. Factor: | 151 | Date of Analysis: 8/19/11 06:02 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 76 | 460 | 270 | 1600 |
| TPH ref. to Gasoline (MW=100) | 3800 | 340000 | 15000 | 1400000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 95 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1108300B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2081909 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/19/11 10:25 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1108300B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2081906 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/19/11 08:45 AM |

| Compound | %Recovery |
|----------|-----------|
|----------|-----------|

| | |
|-------------------------------|-----|
| Hexane | 82 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 111 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1108300B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|------------------------------------|
| File Name: | 2081907 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/19/11 09:13 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 86 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 114 | 70-130 |

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/21/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-------------------------------|----------------|-------------------------------|---------------------------|
| 01A | HAFB-SP43-VMP10 | Modified TO-15 | 5.2 "Hg | 15psi |
| 01AA | HAFB-SP43-VMP10 Lab Duplicate | Modified TO-15 | 5.2 "Hg | 15psi |
| 02A | HAFB-SP43-VMP11 | Modified TO-15 | 5.0 "Hg | 15psi |
| 03A | HAFB-SP43-VMP12 | Modified TO-15 | 4.5 "Hg | 15psi |
| 04A | HAFB-SP43-VMP16 | Modified TO-15 | 6.0 "Hg | 15psi |
| 05A | HAFB-SP43-VMP17 | Modified TO-15 | 5.5 "Hg | 15psi |
| 06A | FV-GP01-HDOH#2 | Modified TO-15 | 4.0 "Hg | 15psi |
| 07A | FV-GP08-HDOH#2 | Modified TO-15 | 5.0 "Hg | 15psi |
| 08A | FV-GP16R-HDOH#2 | Modified TO-15 | 5.5 "Hg | 15psi |
| 09A | JP8#1 | Modified TO-15 | 4.0 "Hg | 15psi |
| 10A | Lab Blank | Modified TO-15 | NA | NA |
| 11A | CCV | Modified TO-15 | NA | NA |
| 12A | LCS | Modified TO-15 | NA | NA |
| 12AA | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 10/21/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1110160B**

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-SP43-VMP10, HAFB-SP43-VMP10 Lab Duplicate, HAFB-SP43-VMP11, HAFB-SP43-VMP16, HAFB-SP43-VMP17, FV-GP08-HDOH#2, FV-GP16R-HDOH#2 and JP8#1 due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160B-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 6100 | 9900000 | 25000 | 40000000 |

Client Sample ID: HAFB-SP43-VMP10 Lab Duplicate

Lab ID#: 1110160B-01AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 6100 | 9500000 | 25000 | 39000000 |

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160B-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 6000 | 11000000 | 25000 | 45000000 |

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160B-03A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 60 | 1500 | 240 | 6100 |

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160B-04A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 6300 | 21000000 | 26000 | 86000000 |

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160B-05A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
|----------|----------------------|------------------|-----------------------|-------------------|

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160B-05A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 6200 | 2600000 | 25000 | 11000000 |

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160B-06A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.2 | 4.0 | 4.1 | 14 |
| TPH ref. to Gasoline (MW=100) | 58 | 13000 | 240 | 53000 |

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160B-07A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 600 | 660000 | 2500 | 2700000 |

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160B-08A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 6200 | 3200000 | 25000 | 13000000 |

Client Sample ID: JP8#1

Lab ID#: 1110160B-09A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | 27000 | 410 | 94000 |
| TPH ref. to Gasoline (MW=100) | 5800 | 3400000 | 24000 | 14000000 |

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|---|
| File Name: | 2101216 | Date of Collection: 10/5/11 2:05:00 PM |
| Dil. Factor: | 244 | Date of Analysis: 10/12/11 04:09 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 120 | Not Detected | 430 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 6100 | 9900000 | 25000 | 40000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 106 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: HAFB-SP43-VMP10 Lab Duplicate

Lab ID#: 1110160B-01AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|--------------------|
| File Name: | 2101217 | Date of Collection: | 10/5/11 2:05:00 PM |
| Dil. Factor: | 244 | Date of Analysis: | 10/12/11 04:52 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | Not Detected | 430 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 6100 | 9500000 | 25000 | 39000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 106 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|--------------------|
| File Name: | 2101218 | Date of Collection: | 10/5/11 1:15:00 PM |
| Dil. Factor: | 242 | Date of Analysis: | 10/12/11 05:31 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | Not Detected | 430 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 6000 | 11000000 | 25000 | 45000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2101222 | Date of Collection: | 10/5/11 12:44:00 PM |
| Dil. Factor: | 2.38 | Date of Analysis: | 10/12/11 08:39 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.2 | Not Detected | 4.2 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 60 | 1500 | 240 | 6100 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 90 | 70-130 |

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|--------------------|
| File Name: | 2101219 | Date of Collection: | 10/5/11 1:42:00 PM |
| Dil. Factor: | 252 | Date of Analysis: | 10/12/11 06:13 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 130 | Not Detected | 440 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 6300 | 21000000 | 26000 | 86000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 116 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2101214 | Date of Collection: | 10/5/11 11:52:00 AM |
| Dil. Factor: | 247 | Date of Analysis: | 10/12/11 01:43 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | Not Detected | 440 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 6200 | 2600000 | 25000 | 11000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 114 | 70-130 |
| Toluene-d8 | 113 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|--|
| File Name: | 2101223 | Date of Collection: 10/6/11 1:45:00 PM |
| Dil. Factor: | 2.33 | Date of Analysis: 10/12/11 09:15 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.2 | 4.0 | 4.1 | 14 |
| TPH ref. to Gasoline (MW=100) | 58 | 13000 | 240 | 53000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|--------------------|
| File Name: | 2101215 | Date of Collection: | 10/6/11 1:06:00 PM |
| Dil. Factor: | 24.2 | Date of Analysis: | 10/12/11 03:24 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 12 | Not Detected | 43 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 600 | 660000 | 2500 | 2700000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 114 | 70-130 |
| Toluene-d8 | 115 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2101224 | Date of Collection: 10/6/11 12:19:00 PM |
| Dil. Factor: | 247 | Date of Analysis: 10/12/11 09:52 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 120 | Not Detected | 440 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 6200 | 3200000 | 25000 | 13000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| Toluene-d8 | 106 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

Client Sample ID: JP8#1

Lab ID#: 1110160B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|--------------------|
| File Name: | 2101220 | Date of Collection: | 10/6/11 3:15:00 PM |
| Dil. Factor: | 233 | Date of Analysis: | 10/12/11 06:55 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 120 | 27000 | 410 | 94000 |
| TPH ref. to Gasoline (MW=100) | 5800 | 3400000 | 24000 | 14000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110160B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2101213 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/12/11 01:01 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 116 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 84 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110160B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2101206 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/12/11 07:49 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| Hexane | 105 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 113 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110160B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2101207 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/12/11 08:37 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 106 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 105 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

Client Sample ID: LCSD

Lab ID#: 1110160B-12AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2101208 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/12/11 09:11 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 104 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

11/3/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413B

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/03/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------------------------|----------------|-------------------------------|---------------------------|
| 01A | HAFB-VP26-B05(18) | Modified TO-15 | 4.0 "Hg | 5 psi |
| 02A | HAFB-VP26-B05(24) | Modified TO-15 | 3.5 "Hg | 5 psi |
| 03A | HAFB-VP26-B07(20) | Modified TO-15 | 2.5 "Hg | 5 psi |
| 04A | HAFB-VP26-B07(25) | Modified TO-15 | 4.5 "Hg | 5 psi |
| 05A | HAFB-ST03-B58(347) | Modified TO-15 | 4.4 "Hg | 5 psi |
| 05AA | HAFB-ST03-B58(347) Lab Duplicate | Modified TO-15 | 4.4 "Hg | 5 psi |
| 06A | HAFB-ST03-B58(422) | Modified TO-15 | 5.0 "Hg | 5 psi |
| 07A | HAFB-ST03-B58(492) | Modified TO-15 | 4.6 "Hg | 5 psi |
| 08A | HAFB-ST03-B59(388) | Modified TO-15 | 5.0 "Hg | 5 psi |
| 09A | HH-OU1C-MW10SG | Modified TO-15 | 6.0 "Hg | 5 psi |
| 10A | HH-OU1C-MW22R | Modified TO-15 | 5.4 "Hg | 5 psi |
| 11A | HH-OU1C-OTNS1 | Modified TO-15 | 4.2 "Hg | 5 psi |
| 12A | GASOLINE#2 | Modified TO-15 | 2.6 "Hg | 5 psi |
| 12AA | GASOLINE#2 Lab Duplicate | Modified TO-15 | 2.6 "Hg | 5 psi |
| 13A | DIESEL#3 | Modified TO-15 | 3.2 "Hg | 5 psi |
| 13AA | DIESEL#3 Lab Duplicate | Modified TO-15 | 3.2 "Hg | 5 psi |
| 14A | GASOLINE-EXHAUST | Modified TO-15 | 3.2 "Hg | 5 psi |

Continued on next page

WORK ORDER #: 1110413B

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/03/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------|----------------|-------------------------------|---------------------------|
| 15A | DIESEL-EXHAUST | Modified TO-15 | 3.0 "Hg | 5 psi |
| 16A | Lab Blank | Modified TO-15 | NA | NA |
| 16B | Lab Blank | Modified TO-15 | NA | NA |
| 16C | Lab Blank | Modified TO-15 | NA | NA |
| 17A | CCV | Modified TO-15 | NA | NA |
| 17B | CCV | Modified TO-15 | NA | NA |
| 17C | CCV | Modified TO-15 | NA | NA |
| 18A | LCS | Modified TO-15 | NA | NA |
| 18AA | LCSD | Modified TO-15 | NA | NA |
| 18B | LCS | Modified TO-15 | NA | NA |
| 18BB | LCSD | Modified TO-15 | NA | NA |
| 18C | LCS | Modified TO-15 | NA | NA |
| 18CC | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 11/03/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-15
Tetra Tech EM, Inc.
Workorder# 1110413B**

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

The Chain of Custody contained incorrect method information. ATL proceeded with the analysis as per the original contract or verbal agreement.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on samples HAFB-VP26-B05(24), DIESEL#3, DIESEL#3 Lab Duplicate and GASOLINE-EXHAUST due to the presence of high level target species.

Dilution was performed on samples HAFB-VP26-B05(18), HAFB-VP26-B07(20), HAFB-VP26-B07(25), HAFB-ST03-B58(347), HAFB-ST03-B58(347) Lab Duplicate, HAFB-ST03-B58(422), HAFB-ST03-B58(492), HAFB-ST03-B59(388), HH-OU1C-MW10SG, HH-OU1C-MW22R, GASOLINE#2 and GASOLINE#2 Lab Duplicate due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413B-01A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 520 | 3100 | 1800 | 11000 |
| TPH ref. to Gasoline (MW=100) | 26000 | 32000000 | 100000 | 130000000 |

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413B-02A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 13000 | 2500000 | 44000 | 8800000 |
| TPH ref. to Gasoline (MW=100) | 630000 | 67000000 | 2600000 | 270000000 |

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413B-03A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 730 | 57000 | 2600 | 200000 |
| TPH ref. to Gasoline (MW=100) | 36000 | 26000000 | 150000 | 110000000 |

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413B-04A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1600 | 80000 | 5600 | 280000 |
| TPH ref. to Gasoline (MW=100) | 79000 | 73000000 | 320000 | 300000000 |

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413B-05A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 7.8 | 91 | 28 | 320 |
| TPH ref. to Gasoline (MW=100) | 390 | 380000 | 1600 | 1600000 |

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HAFB-ST03-B58(347) Lab Duplicate

Lab ID#: 1110413B-05AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 7.8 | 87 | 28 | 300 |
| TPH ref. to Gasoline (MW=100) | 390 | 440000 | 1600 | 1800000 |

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413B-06A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 11 | 140 | 38 | 500 |
| TPH ref. to Gasoline (MW=100) | 540 | 590000 | 2200 | 2400000 |

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413B-07A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 10 | 140 | 37 | 500 |
| TPH ref. to Gasoline (MW=100) | 530 | 630000 | 2200 | 2600000 |

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413B-08A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.4 | 140 | 4.9 | 490 |
| TPH ref. to Gasoline (MW=100) | 69 | 54000 | 280 | 220000 |

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413B-09A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1700 | 130000 | 5900 | 450000 |
| TPH ref. to Gasoline (MW=100) | 84000 | 53000000 | 340000 | 220000000 |

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413B-10A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 4100 | 120000 | 14000 | 430000 |
| TPH ref. to Gasoline (MW=100) | 200000 | 43000000 | 830000 | 180000000 |

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413B-11A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| TPH ref. to Gasoline (MW=100) | 39 | 520 | 160 | 2100 |

Client Sample ID: GASOLINE#2

Lab ID#: 1110413B-12A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1200 | 59000 | 4300 | 210000 |
| TPH ref. to Gasoline (MW=100) | 61000 | 5600000 | 250000 | 23000000 |

Client Sample ID: GASOLINE#2 Lab Duplicate

Lab ID#: 1110413B-12AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 3700 | 63000 | 13000 | 220000 |
| TPH ref. to Gasoline (MW=100) | 180000 | 6300000 | 750000 | 26000000 |

Client Sample ID: DIESEL#3

Lab ID#: 1110413B-13A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 5.0 | 1800 | 18 | 6400 |
| TPH ref. to Gasoline (MW=100) | 250 | 140000 | 1000 | 570000 |

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: DIESEL#3 Lab Duplicate

Lab ID#: 1110413B-13AA

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 5.0 | 1700 | 18 | 6000 |
| TPH ref. to Gasoline (MW=100) | 250 | 130000 | 1000 | 530000 |

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413B-14A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 7.5 | 500 | 26 | 1800 |
| TPH ref. to Gasoline (MW=100) | 380 | 26000 | 1500 | 110000 |

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413B-15A

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| TPH ref. to Gasoline (MW=100) | 37 | 130 | 150 | 530 |

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102425 | Date of Collection: 10/13/11 10:12:00 A |
| Dil. Factor: | 1030 | Date of Analysis: 10/25/11 06:18 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 520 | 3100 | 1800 | 11000 |
| TPH ref. to Gasoline (MW=100) | 26000 | 32000000 | 100000 | 130000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102422 | Date of Collection: 10/13/11 10:46:00 A |
| Dil. Factor: | 25300 | Date of Analysis: 10/24/11 10:46 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 13000 | 2500000 | 44000 | 8800000 |
| TPH ref. to Gasoline (MW=100) | 630000 | 67000000 | 2600000 | 270000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102416 | Date of Collection: 10/13/11 11:23:00 A |
| Dil. Factor: | 1460 | Date of Analysis: 10/24/11 05:47 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 730 | 57000 | 2600 | 200000 |
| TPH ref. to Gasoline (MW=100) | 36000 | 26000000 | 150000 | 110000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 88 | 70-130 |

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102417 | Date of Collection: 10/13/11 11:49:00 A |
| Dil. Factor: | 3160 | Date of Analysis: 10/24/11 06:32 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1600 | 80000 | 5600 | 280000 |
| TPH ref. to Gasoline (MW=100) | 79000 | 73000000 | 320000 | 300000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 88 | 70-130 |

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2102113 | Date of Collection: | 10/14/11 9:35:00 AM |
| Dil. Factor: | 15.7 | Date of Analysis: | 10/21/11 04:24 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 7.8 | 91 | 28 | 320 |
| TPH ref. to Gasoline (MW=100) | 390 | 380000 | 1600 | 1600000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 111 | 70-130 |
| Toluene-d8 | 109 | 70-130 |
| 4-Bromofluorobenzene | 93 | 70-130 |

Client Sample ID: HAFB-ST03-B58(347) Lab Duplicate

Lab ID#: 1110413B-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2102114 | Date of Collection: | 10/14/11 9:35:00 AM |
| Dil. Factor: | 15.7 | Date of Analysis: | 10/21/11 05:20 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 7.8 | 87 | 28 | 300 |
| TPH ref. to Gasoline (MW=100) | 390 | 440000 | 1600 | 1800000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 112 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102115 | Date of Collection: 10/14/11 10:19:00 A |
| Dil. Factor: | 21.5 | Date of Analysis: 10/21/11 06:08 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 11 | 140 | 38 | 500 |
| TPH ref. to Gasoline (MW=100) | 540 | 590000 | 2200 | 2400000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 110 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102116 | Date of Collection: 10/14/11 10:36:00 A |
| Dil. Factor: | 21.1 | Date of Analysis: 10/21/11 06:58 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 10 | 140 | 37 | 500 |
| TPH ref. to Gasoline (MW=100) | 530 | 630000 | 2200 | 2600000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 110 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2102120 | Date of Collection: | 10/14/11 11:03:00 A |
| Dil. Factor: | 2.77 | Date of Analysis: | 10/21/11 10:07 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1.4 | 140 | 4.9 | 490 |
| TPH ref. to Gasoline (MW=100) | 69 | 54000 | 280 | 220000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 109 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102419 | Date of Collection: 10/18/11 11:43:00 A |
| Dil. Factor: | 3360 | Date of Analysis: 10/24/11 08:07 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1700 | 130000 | 5900 | 450000 |
| TPH ref. to Gasoline (MW=100) | 84000 | 53000000 | 340000 | 220000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 88 | 70-130 |

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102510 | Date of Collection: 10/18/11 11:09:00 A |
| Dil. Factor: | 8150 | Date of Analysis: 10/25/11 12:28 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 4100 | 120000 | 14000 | 430000 |
| TPH ref. to Gasoline (MW=100) | 200000 | 43000000 | 830000 | 180000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 83 | 70-130 |

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|---|
| File Name: | 2102117 | Date of Collection: 10/18/11 10:31:00 A |
| Dil. Factor: | 1.56 | Date of Analysis: 10/21/11 07:41 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.78 | Not Detected | 2.7 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 39 | 520 | 160 | 2100 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 110 | 70-130 |
| 4-Bromofluorobenzene | 90 | 70-130 |

Client Sample ID: GASOLINE#2

Lab ID#: 1110413B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2102512 | Date of Collection: | 10/18/11 8:35:00 AM |
| Dil. Factor: | 2450 | Date of Analysis: | 10/25/11 01:45 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 1200 | 59000 | 4300 | 210000 |
| TPH ref. to Gasoline (MW=100) | 61000 | 5600000 | 250000 | 23000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 82 | 70-130 |

Client Sample ID: GASOLINE#2 Lab Duplicate

Lab ID#: 1110413B-12AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2102511 | Date of Collection: | 10/18/11 8:35:00 AM |
| Dil. Factor: | 7350 | Date of Analysis: | 10/25/11 01:06 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 3700 | 63000 | 13000 | 220000 |
| TPH ref. to Gasoline (MW=100) | 180000 | 6300000 | 750000 | 26000000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: DIESEL#3

Lab ID#: 1110413B-13A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2102412 | Date of Collection: | 10/18/11 8:35:00 AM |
| Dil. Factor: | 10.0 | Date of Analysis: | 10/24/11 02:04 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 5.0 | 1800 | 18 | 6400 |
| TPH ref. to Gasoline (MW=100) | 250 | 140000 | 1000 | 570000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| Toluene-d8 | 107 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

Client Sample ID: DIESEL#3 Lab Duplicate

Lab ID#: 1110413B-13AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | | |
|--------------|---------|---------------------|---------------------|
| File Name: | 2102413 | Date of Collection: | 10/18/11 8:35:00 AM |
| Dil. Factor: | 10.0 | Date of Analysis: | 10/24/11 02:39 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 5.0 | 1700 | 18 | 6000 |
| TPH ref. to Gasoline (MW=100) | 250 | 130000 | 1000 | 530000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 105 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413B-14A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2102411 | Date of Collection: 10/18/11 8:50:00 AM |
| Dil. Factor: | 15.0 | Date of Analysis: 10/24/11 01:24 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 7.5 | 500 | 26 | 1800 |
| TPH ref. to Gasoline (MW=100) | 380 | 26000 | 1500 | 110000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 89 | 70-130 |

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413B-15A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2102118 | Date of Collection: 10/18/11 8:45:00 AM |
| Dil. Factor: | 1.49 | Date of Analysis: 10/21/11 08:27 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|------------------------------|--------------------------|-------------------------------|---------------------------|
| Hexane | 0.74 | Not Detected | 2.6 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 37 | 130 | 150 | 530 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|--------------------------|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 87 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110413B-16A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102108 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/21/11 12:01 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 113 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110413B-16B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102409 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/24/11 11:33 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110413B-16C

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102509 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 11:49 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------------|----------------------|------------------|-----------------------|-------------------|
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| TPH ref. to Gasoline (MW=100) | 25 | Not Detected | 100 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 82 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110413B-17A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2102102 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/21/11 07:54 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| Hexane | 119 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 116 | 70-130 |
| Toluene-d8 | 107 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110413B-17B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102405 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/24/11 08:59 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| Hexane | 118 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110413B-17C

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2102503 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 08:25 AM |

| Compound | %Recovery |
|-------------------------------|------------------|
| Hexane | 114 |
| TPH ref. to Gasoline (MW=100) | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|----------------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110413B-18A

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|---------------------|----------------|--|
| File Name: | 2102103 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/21/11 08:40 AM |

| Compound | %Recovery |
|-------------------------------|------------------|
| Hexane | 107 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|------------------|----------------------|
| 1,2-Dichloroethane-d4 | 111 | 70-130 |
| Toluene-d8 | 108 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: LCSD

Lab ID#: 1110413B-18AA

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102104 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/21/11 09:16 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 105 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 108 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110413B-18B

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102406 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/24/11 09:37 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 109 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: LCSD

Lab ID#: 1110413B-18BB

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102407 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/24/11 10:13 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 109 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110413B-18C

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102504 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 08:58 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 105 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

Client Sample ID: LCSD

Lab ID#: 1110413B-18CC

EPA METHOD TO-15 GC/MS FULL SCAN

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102505 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 09:30 AM |

| Compound | %Recovery |
|-------------------------------|------------|
| Hexane | 112 |
| TPH ref. to Gasoline (MW=100) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

6/22/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Fishing Village
Project #:
Workorder #: 1105519A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 5/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1105519A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Fishing Village

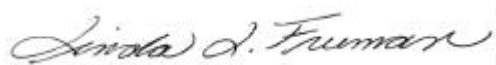
DATE RECEIVED: 05/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/20/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|------------------------------|-------------------|-------------------------------|---------------------------|
| 01A | FV-GP-01-HDOH | Massachusetts APH | 5.5 "Hg | 15 psi |
| 02A | FV-GP-06R-HDOH | Massachusetts APH | 4.5 "Hg | 15 psi |
| 02AA | FV-GP-06R-HDOH Lab Duplicate | Massachusetts APH | 4.5 "Hg | 15 psi |
| 03A | FV-GP-08-HDOH | Massachusetts APH | 2.0 "Hg | 15 psi |
| 04A | FV-GP-16R-HDOH | Massachusetts APH | 5.5 "Hg | 15 psi |
| 05A | FV-GP-17-HDOH | Massachusetts APH | 5.5 "Hg | 15 psi |
| 06A | G-IPB20-HDOH | Massachusetts APH | 6.5 "Hg | 15 psi |
| 07A | G-IPH11-HDOH | Massachusetts APH | 4.0 "Hg | 15 psi |
| 08A | G-IPL19-HDOH | Massachusetts APH | 5.0 "Hg | 15 psi |
| 09A | G-IP28-HDOH | Massachusetts APH | 9.5 "Hg | 15 psi |
| 10A | G-SG12-HDOH | Massachusetts APH | 4.0 "Hg | 15 psi |
| 11A | Lab Blank | Massachusetts APH | NA | NA |
| 11B | Lab Blank | Massachusetts APH | NA | NA |
| 12A | CCV | Massachusetts APH | NA | NA |
| 12B | CCV | Massachusetts APH | NA | NA |
| 13A | LCS | Massachusetts APH | NA | NA |
| 13B | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 06/21/11

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(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1105519A

Ten 1 Liter Summa Canister (MA APH Certified) samples were received on May 26, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported LCS for each daily batch has been derived from more than one analytical file.

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

A dilution was performed on samples FV-GP-01-HDOH, FV-GP-08-HDOH, FV-GP-16R-HDOH, G-IPB20-HDOH, G-IPH11-HDOH, G-IP28-HDOH and G-SG12-HDOH due to the presence of high level target species.

The per analytical batch duplicate analysis for samples analyzed on 06/03/2011 required for this project is associated with work order 1105583D.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: FV-GP-01-HDOH

Lab ID#: 1105519A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2060214a | Date of Collection: 5/19/11 10:55:00 AM |
| Dil. Factor: | 14.1 | Date of Analysis: 6/2/11 02:42 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 13 | Not Detected | 28 | Not Detected |
| Methyl tert-butyl ether | 7.8 | Not Detected | 28 | Not Detected |
| Benzene | 8.9 | Not Detected | 28 | Not Detected |
| Toluene | 7.5 | Not Detected | 28 | Not Detected |
| Ethyl Benzene | 6.5 | Not Detected | 28 | Not Detected |
| o-Xylene | 6.5 | Not Detected | 28 | Not Detected |
| m,p-Xylene | 6.5 | Not Detected | 28 | Not Detected |
| Naphthalene | 28 | Not Detected | 150 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 107 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: FV-GP-06R-HDOH

Lab ID#: 1105519A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2060216a | Date of Collection: 5/19/11 11:43:00 AM |
| Dil. Factor: | 2.38 | Date of Analysis: 6/2/11 03:53 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 2.1 | Not Detected | 4.7 | Not Detected |
| Methyl tert-butyl ether | 1.3 | Not Detected | 4.7 | Not Detected |
| Benzene | 1.5 | Not Detected | 4.8 | Not Detected |
| Toluene | 1.3 | Not Detected | 4.8 | Not Detected |
| Ethyl Benzene | 1.1 | Not Detected | 4.8 | Not Detected |
| o-Xylene | 1.1 | Not Detected | 4.8 | Not Detected |
| m,p-Xylene | 1.1 | Not Detected | 4.8 | Not Detected |
| Naphthalene | 4.8 | Not Detected | 25 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 125 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

Client Sample ID: FV-GP-06R-HDOH Lab Duplicate

Lab ID#: 1105519A-02AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2060215a | Date of Collection: 5/19/11 11:43:00 AM |
| Dil. Factor: | 7.32 | Date of Analysis: 6/2/11 03:20 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 6.6 | Not Detected | 14 | Not Detected |
| Methyl tert-butyl ether | 4.0 | Not Detected | 14 | Not Detected |
| Benzene | 4.6 | Not Detected | 15 | Not Detected |
| Toluene | 3.9 | Not Detected | 15 | Not Detected |
| Ethyl Benzene | 3.4 | Not Detected | 15 | Not Detected |
| o-Xylene | 3.4 | Not Detected | 15 | Not Detected |
| m,p-Xylene | 3.4 | Not Detected | 15 | Not Detected |
| Naphthalene | 15 | Not Detected | 77 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 114 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: FV-GP-08-HDOH

Lab ID#: 1105519A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2060217a | Date of Collection: 5/19/11 10:27:00 AM |
| Dil. Factor: | 18.8 | Date of Analysis: 6/2/11 04:25 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 17 | Not Detected | 37 | Not Detected |
| Methyl tert-butyl ether | 10 | Not Detected | 37 | Not Detected |
| Benzene | 12 | 16 | 38 | 50 |
| Toluene | 10 | 18 | 38 | 67 |
| Ethyl Benzene | 8.6 | 25 | 38 | 110 |
| o-Xylene | 8.6 | Not Detected | 38 | Not Detected |
| m,p-Xylene | 8.6 | Not Detected | 38 | Not Detected |
| Naphthalene | 38 | 120 | 200 | 600 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 112 | 70-130 |

Client Sample ID: FV-GP-16R-HDOH

Lab ID#: 1105519A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2060219a | Date of Collection: 5/19/11 9:41:00 AM |
| Dil. Factor: | 247 | Date of Analysis: 6/2/11 05:45 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 220 | Not Detected | 490 | Not Detected |
| Methyl tert-butyl ether | 140 | Not Detected | 490 | Not Detected |
| Benzene | 160 | Not Detected | 500 | Not Detected |
| Toluene | 130 | Not Detected | 490 | Not Detected |
| Ethyl Benzene | 110 | Not Detected | 490 | Not Detected |
| o-Xylene | 110 | Not Detected | 490 | Not Detected |
| m,p-Xylene | 110 | Not Detected | 490 | Not Detected |
| Naphthalene | 490 | Not Detected | 2600 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 106 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: FV-GP-17-HDOH

Lab ID#: 1105519A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2060308a | Date of Collection: 5/19/11 11:24:00 AM |
| Dil. Factor: | 2.47 | Date of Analysis: 6/3/11 10:36 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2.2 | Not Detected | 4.9 | Not Detected |
| Methyl tert-butyl ether | 1.4 | Not Detected | 4.9 | Not Detected |
| Benzene | 1.6 | Not Detected | 5.0 | Not Detected |
| Toluene | 1.3 | Not Detected | 4.9 | Not Detected |
| Ethyl Benzene | 1.1 | Not Detected | 4.9 | Not Detected |
| o-Xylene | 1.1 | Not Detected | 4.9 | Not Detected |
| m,p-Xylene | 1.1 | Not Detected | 4.9 | Not Detected |
| Naphthalene | 4.9 | Not Detected | 26 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 126 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2060223a | Date of Collection: 5/20/11 7:52:00 AM |
| Dil. Factor: | 73.7 | Date of Analysis: 6/2/11 08:43 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 66 | Not Detected | 150 | Not Detected |
| Methyl tert-butyl ether | 40 | Not Detected | 150 | Not Detected |
| Benzene | 46 | 10000 | 150 | 34000 |
| Toluene | 39 | 1600 | 150 | 5900 |
| Ethyl Benzene | 34 | 36 | 150 | 160 |
| o-Xylene | 34 | 47 | 150 | 200 |
| m,p-Xylene | 34 | 98 | 150 | 430 |
| Naphthalene | 150 | Not Detected | 770 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 112 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2060226a | Date of Collection: 5/20/11 7:37:00 AM |
| Dil. Factor: | 23300 | Date of Analysis: 6/2/11 10:51 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 21000 | Not Detected | 46000 | Not Detected |
| Methyl tert-butyl ether | 13000 | Not Detected | 46000 | Not Detected |
| Benzene | 15000 | 3000000 | 47000 | 9700000 |
| Toluene | 12000 | Not Detected | 46000 | Not Detected |
| Ethyl Benzene | 11000 | 19000 | 46000 | 81000 |
| o-Xylene | 11000 | Not Detected | 46000 | Not Detected |
| m,p-Xylene | 11000 | Not Detected | 46000 | Not Detected |
| Naphthalene | 47000 | Not Detected | 240000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2060309a | Date of Collection: 5/20/11 8:38:00 AM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/3/11 11:13 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2.2 | Not Detected | 4.8 | Not Detected |
| Methyl tert-butyl ether | 1.3 | Not Detected | 4.8 | Not Detected |
| Benzene | 1.5 | 150 | 4.9 | 480 |
| Toluene | 1.3 | 14 | 4.8 | 51 |
| Ethyl Benzene | 1.1 | 2.7 | 4.8 | 12 |
| o-Xylene | 1.1 | 3.0 | 4.8 | 13 |
| m,p-Xylene | 1.1 | 5.2 | 4.8 | 23 |
| Naphthalene | 4.8 | Not Detected | 25 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 125 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519A-09A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2060312a | Date of Collection: 5/20/11 8:35:00 AM |
| Dil. Factor: | 39500 | Date of Analysis: 6/3/11 01:13 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 36000 | Not Detected | 79000 | Not Detected |
| Methyl tert-butyl ether | 22000 | Not Detected | 78000 | Not Detected |
| Benzene | 25000 | 6800000 | 79000 | 22000000 |
| Toluene | 21000 | 160000 | 79000 | 620000 |
| Ethyl Benzene | 18000 | Not Detected | 79000 | Not Detected |
| o-Xylene | 18000 | Not Detected | 79000 | Not Detected |
| m,p-Xylene | 18000 | Not Detected | 79000 | Not Detected |
| Naphthalene | 79000 | Not Detected | 410000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 111 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519A-10A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2060315a | Date of Collection: 5/20/11 9:21:00 AM |
| Dil. Factor: | 6.66 | Date of Analysis: 6/3/11 02:56 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 6.0 | Not Detected | 13 | Not Detected |
| Methyl tert-butyl ether | 3.7 | 4.3 | 13 | 15 |
| Benzene | 4.2 | Not Detected | 13 | Not Detected |
| Toluene | 3.5 | Not Detected | 13 | Not Detected |
| Ethyl Benzene | 3.1 | Not Detected | 13 | Not Detected |
| o-Xylene | 3.1 | Not Detected | 13 | Not Detected |
| m,p-Xylene | 3.1 | Not Detected | 13 | Not Detected |
| Naphthalene | 13 | Not Detected | 70 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 117 | 70-130 |
| Toluene-d8 | 107 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1105519A-11A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|-----------------------------------|
| File Name: | 2060206a | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 09:28 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 116 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1105519A-11B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|-----------------------------------|
| File Name: | 2060306a | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 09:11 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 121 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1105519A-12A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2060204 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 08:02 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 92 |
| Methyl tert-butyl ether | 96 |
| Benzene | 88 |
| Toluene | 82 |
| Ethyl Benzene | 90 |
| o-Xylene | 89 |
| m,p-Xylene | 86 |
| Naphthalene | 94 |
| C5-C8 Aliphatic Hydrocarbons | 90 |
| C9-C12 Aliphatic Hydrocarbons | 86 |
| C9-C10 Aromatic Hydrocarbons | 72 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1105519A-12B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2060304 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 07:50 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 91 |
| Methyl tert-butyl ether | 100 |
| Benzene | 90 |
| Toluene | 85 |
| Ethyl Benzene | 84 |
| o-Xylene | 85 |
| m,p-Xylene | 80 |
| Naphthalene | 89 |
| C5-C8 Aliphatic Hydrocarbons | 92 |
| C9-C12 Aliphatic Hydrocarbons | 89 |
| C9-C10 Aromatic Hydrocarbons | 78 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1105519A-13A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2060205 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 08:37 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 124 |
| Methyl tert-butyl ether | 128 |
| Benzene | 114 |
| Toluene | 106 |
| Ethyl Benzene | 105 |
| o-Xylene | 104 |
| m,p-Xylene | 106 |
| Naphthalene | 97 |
| C5-C8 Aliphatic Hydrocarbons | 90 |
| C9-C12 Aliphatic Hydrocarbons | 95 |
| C9-C10 Aromatic Hydrocarbons | 80 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1105519A-13B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2060305 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/3/11 08:27 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 121 |
| Methyl tert-butyl ether | 127 |
| Benzene | 109 |
| Toluene | 101 |
| Ethyl Benzene | 102 |
| o-Xylene | 102 |
| m,p-Xylene | 102 |
| Naphthalene | 81 |
| C5-C8 Aliphatic Hydrocarbons | 93 |
| C9-C12 Aliphatic Hydrocarbons | 94 |
| C9-C10 Aromatic Hydrocarbons | 79 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 115 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.0% 1, 4-Difluorobenzene: %D from CCV: 3.4% Chlorobenzene-d5: %D from CCV: 11% MS Tuning Standard: Bromofluorobenzene | Client ID | FV-GP-01-HDOH | NA | | | |
| | Lab ID | 1105519A-01A | NA | | | |
| | Date Collected | 5/19/2011 | NA | | | |
| | Date Received | 5/26/2011 | NA | | | |
| | Date Analyzed | 6/2/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 28 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 5.5 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 14.1 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 28 | 13 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 28 | 7.8 | ND | ND | NA | NA |
| Benzene | 28 | 8.8 | ND | ND | NA | NA |
| Toluene | 28 | 7.5 | ND | ND | NA | NA |
| Ethylbenzene | 28 | 6.5 | ND | ND | NA | NA |
| m- & p- Xylenes | 28 | 6.5 | ND | ND | NA | NA |
| o-Xylene | 28 | 6.5 | ND | ND | NA | NA |
| Naphthalene | 150 | 28 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 170 | N/A | 9400 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 170 | N/A | 79000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 140 | N/A | 1200 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|----------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 5.5% 1, 4-Difluorobenzene: %D from CCV: 0.040% Chlorobenzene-d5: %D from CCV: 3.3% MS Tuning Standard: Bromofluorobenzene | Client ID | FV-GP-06R-HDOH | NA | | | |
| | Lab ID | 1105519A-02A | NA | | | |
| | Date Collected | 5/19/2011 | NA | | | |
| | Date Received | 5/26/2011 | NA | | | |
| | Date Analyzed | 6/2/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 4.5 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 2.38 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.8 | 2.2 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.8 | 1.3 | ND | ND | NA | NA |
| Benzene | 4.8 | 1.5 | ND | ND | NA | NA |
| Toluene | 4.8 | 1.3 | ND | ND | NA | NA |
| Ethylbenzene | 4.8 | 1.1 | ND | ND | NA | NA |
| m- & p- Xylenes | 4.8 | 1.1 | ND | ND | NA | NA |
| o-Xylene | 4.8 | 1.1 | ND | ND | NA | NA |
| Naphthalene | 25 | 4.8 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 28 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 28 | N/A | 610 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 24 | N/A | 72 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 0.25% 1, 4-Difluorobenzene: %D from CCV: 1.0% Chlorobenzene-d5: %D from CCV: 4.3% MS Tuning Standard: Bromofluorobenzene | Client ID | FV-GP-06R-HDOH Lab Du | NA | | | |
| | Lab ID | 1105519A-02AA | NA | | | |
| | Date Collected | 5/19/2011 | NA | | | |
| | Date Received | 5/26/2011 | NA | | | |
| | Date Analyzed | 6/2/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 4.5 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 7.32 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 15 | 6.6 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 15 | 4.0 | ND | ND | NA | NA |
| Benzene | 15 | 4.6 | ND | ND | NA | NA |
| Toluene | 15 | 3.9 | ND | ND | NA | NA |
| Ethylbenzene | 15 | 3.4 | ND | ND | NA | NA |
| m- & p- Xylenes | 15 | 3.4 | ND | ND | NA | NA |
| o-Xylene | 15 | 3.4 | ND | ND | NA | NA |
| Naphthalene | 77 | 15 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 88 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 88 | N/A | 130 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 73 | N/A | 82 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 0.58% 1, 4-Difluorobenzene: %D from CCV: 5.6% Chlorobenzene-d5: %D from CCV: 5.8% MS Tuning Standard: Bromofluorobenzene | Client ID | | FV-GP-08-HDOH | | NA | |
| | Lab ID | | 1105519A-03A | | NA | |
| | Date Collected | | 5/19/2011 | | NA | |
| | Date Received | | 5/26/2011 | | NA | |
| | Date Analyzed | | 6/2/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 29 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 0 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 2.0 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 18.8 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 38 | 17 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 38 | 10 | ND | ND | NA | NA |
| Benzene | 38 | 12 | 50 | 16 | NA | NA |
| Toluene | 38 | 10 | 67 | 18 | NA | NA |
| Ethylbenzene | 38 | 8.7 | 110 | 25 | NA | NA |
| m- & p- Xylenes | 38 | 8.7 | ND | ND | NA | NA |
| o-Xylene | 38 | 8.7 | ND | ND | NA | NA |
| Naphthalene | 200 | 38 | 600 | 120 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 220 | N/A | 520000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 220 | N/A | 3200000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 190 | N/A | 61000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE: 

POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 34% 1, 4-Difluorobenzene: %D from CCV: 30% Chlorobenzene-d5: %D from CCV: 34% MS Tuning Standard: Bromofluorobenzene | Client ID | | FV-GP-16R-HDOH | | NA | |
| | Lab ID | | 1105519A-04A | | NA | |
| | Date Collected | | 5/19/2011 | | NA | |
| | Date Received | | 5/26/2011 | | NA | |
| | Date Analyzed | | 6/2/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 26 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 5 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.5 | in. Hg | NA | in. Hg |
| Dilution Factor | | 247 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 490 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 490 | 140 | ND | ND | NA | NA |
| Benzene | 490 | 150 | ND | ND | NA | NA |
| Toluene | 490 | 130 | ND | ND | NA | NA |
| Ethylbenzene | 490 | 110 | ND | ND | NA | NA |
| m- & p- Xylenes | 490 | 110 | ND | ND | NA | NA |
| o-Xylene | 490 | 110 | ND | ND | NA | NA |
| Naphthalene | 2600 | 490 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 3000 | N/A | 1100000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 3000 | N/A | 4800000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2500 | N/A | 23000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.5% 1, 4-Difluorobenzene: %D from CCV: 1.6% Chlorobenzene-d5: %D from CCV: 2.0% MS Tuning Standard: Bromofluorobenzene | Client ID | | FV-GP-17-HDOH | | NA | |
| | Lab ID | | 1105519A-05A | | NA | |
| | Date Collected | | 5/19/2011 | | NA | |
| | Date Received | | 5/26/2011 | | NA | |
| | Date Analyzed | | 6/3/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 5 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.5 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 2.47 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.9 | 2.2 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.9 | 1.4 | ND | ND | NA | NA |
| Benzene | 4.9 | 1.5 | ND | ND | NA | NA |
| Toluene | 4.9 | 1.3 | ND | ND | NA | NA |
| Ethylbenzene | 4.9 | 1.1 | ND | ND | NA | NA |
| m- & p- Xylenes | 4.9 | 1.1 | ND | ND | NA | NA |
| o-Xylene | 4.9 | 1.1 | ND | ND | NA | NA |
| Naphthalene | 26 | 4.9 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 30 | N/A | 7000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 30 | N/A | 11000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 25 | N/A | 310 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 33% 1, 4-Difluorobenzene: %D from CCV: 30% Chlorobenzene-d5: %D from CCV: 39% MS Tuning Standard: Bromofluorobenzene | Client ID | | G-IPB20-HDOH | | NA | |
| | Lab ID | | 1105519A-06A | | NA | |
| | Date Collected | | 5/20/2011 | | NA | |
| | Date Received | | 5/26/2011 | | NA | |
| | Date Analyzed | | 6/2/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 29 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 5 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 6.5 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 73.7 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 150 | 67 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 150 | 40 | ND | ND | NA | NA |
| Benzene | 150 | 46 | 34000 | 10000 | NA | NA |
| Toluene | 150 | 39 | 5900 | 1600 | NA | NA |
| Ethylbenzene | 150 | 34 | 160 | 36 | NA | NA |
| m- & p- Xylenes | 150 | 34 | 430 | 98 | NA | NA |
| o-Xylene | 150 | 34 | 200 | 47 | NA | NA |
| Naphthalene | 770 | 150 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 880 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 880 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 740 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 3.1% 1, 4-Difluorobenzene: %D from CCV: 0.43% Chlorobenzene-d5: %D from CCV: 3.7% MS Tuning Standard: Bromofluorobenzene | Client ID | | G-IPH11-HDOH | | NA | |
| | Lab ID | | 1105519A-07A | | NA | |
| | Date Collected | | 5/20/2011 | | NA | |
| | Date Received | | 5/26/2011 | | NA | |
| | Date Analyzed | | 6/2/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 5 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.0 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 23300 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 47000 | 21000 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 47000 | 13000 | ND | ND | NA | NA |
| Benzene | 47000 | 14000 | 9700000 | 3000000 | NA | NA |
| Toluene | 47000 | 12000 | ND | ND | NA | NA |
| Ethylbenzene | 47000 | 11000 | 81000 | 19000 | NA | NA |
| m- & p- Xylenes | 47000 | 11000 | ND | ND | NA | NA |
| o-Xylene | 47000 | 11000 | ND | ND | NA | NA |
| Naphthalene | 240000 | 47000 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 280000 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 280000 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 230000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 1.3% Chlorobenzene-d5: %D from CCV: 4.1% MS Tuning Standard: Bromofluorobenzene | Client ID | | G-IPL19-HDOH | | NA | |
| | Lab ID | | 1105519A-08A | | NA | |
| | Date Collected | | 5/20/2011 | | NA | |
| | Date Received | | 5/26/2011 | | NA | |
| | Date Analyzed | | 6/3/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 5 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.0 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 2.42 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.8 | 2.2 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.8 | 1.3 | ND | ND | NA | NA |
| Benzene | 4.8 | 1.5 | 480 | 150 | NA | NA |
| Toluene | 4.8 | 1.3 | 51 | 14 | NA | NA |
| Ethylbenzene | 4.8 | 1.1 | 12 | 2.7 | NA | NA |
| m- & p- Xylenes | 4.8 | 1.1 | 23 | 5.2 | NA | NA |
| o-Xylene | 4.8 | 1.1 | 13 | 3.0 | NA | NA |
| Naphthalene | 25 | 4.8 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 29 | N/A | 540 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 29 | N/A | 120 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 24 | N/A | 29 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 12% 1, 4-Difluorobenzene: %D from CCV: 8.5% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene | Client ID | | G-IP28-HDOH | | NA | |
| | Lab ID | | 1105519A-09A | | NA | |
| | Date Collected | | 5/20/2011 | | NA | |
| | Date Received | | 5/26/2011 | | NA | |
| | Date Analyzed | | 6/3/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 8 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 9.5 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 39500 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 79000 | 36000 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 79000 | 22000 | ND | ND | NA | NA |
| Benzene | 79000 | 25000 | 22000000 | 6800000 | NA | NA |
| Toluene | 79000 | 21000 | 620000 | 160000 | NA | NA |
| Ethylbenzene | 79000 | 18000 | ND | ND | NA | NA |
| m- & p- Xylenes | 79000 | 18000 | ND | ND | NA | NA |
| o-Xylene | 79000 | 18000 | ND | ND | NA | NA |
| Naphthalene | 410000 | 79000 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 470000 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 470000 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 400000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|--------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 14% 1, 4-Difluorobenzene: %D from CCV: 10% Chlorobenzene-d5: %D from CCV: 11% MS Tuning Standard: Bromofluorobenzene | Client ID | G-SG12-HDOH | NA | | | |
| | Lab ID | 1105519A-10A | NA | | | |
| | Date Collected | 5/20/2011 | NA | | | |
| | Date Received | 5/26/2011 | NA | | | |
| | Date Analyzed | 6/3/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 4.0 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 6.66 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 13 | 6.0 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 13 | 3.7 | 15 | 4.3 | NA | NA |
| Benzene | 13 | 4.2 | ND | ND | NA | NA |
| Toluene | 13 | 3.5 | ND | ND | NA | NA |
| Ethylbenzene | 13 | 3.1 | ND | ND | NA | NA |
| m- & p- Xylenes | 13 | 3.1 | ND | ND | NA | NA |
| o-Xylene | 13 | 3.1 | ND | ND | NA | NA |
| Naphthalene | 70 | 13 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 80 | N/A | 2300 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 80 | N/A | 1600 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 67 | N/A | 320 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | |
|-----------------------------|---|---|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other | 0 0 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 4.8% 1, 4-Difluorobenzene: %D from CCV: 2.4% Chlorobenzene-d5: %D from CCV: 0.74% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1105519A-11A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 6/2/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

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POSITION: Laboratory Director

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DATE: 06/21/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | |
|-----------------------------|---|---|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other | 0 0 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 5.2% 1, 4-Difluorobenzene: %D from CCV: 2.9% Chlorobenzene-d5: %D from CCV: 4.0% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1105519A-11B | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 6/3/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/21/2011

6/27/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

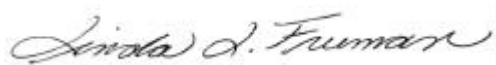
DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/24/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------|-------------------|-------------------------------|---------------------------|
| 01A | A-SV04-HDOH | Massachusetts APH | 3.0 "Hg | 15 psi |
| 02A | A-SVO13-HDOH | Massachusetts APH | 3.5" Hg | 15 psi |
| 03A | A-AS4-HDOH | Massachusetts APH | 1.5" Hg | 15 psi |
| 04A | Diesel#1-HDOH | Massachusetts APH | 5.0 "Hg | 15 psi |
| 04AA | Diesel#1-HDOH Lab Duplicate | Massachusetts APH | 5.0 "Hg | 15 psi |
| 05A | Ambient#1-HDOH | Massachusetts APH | 4.5 "Hg | 15 psi |
| 06A | Lab Blank | Massachusetts APH | NA | NA |
| 07A | CCV | Massachusetts APH | NA | NA |
| 08A | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 06/27/11

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1106214A**

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported LCS for each daily batch has been derived from more than one analytical file.

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

A dilution was performed on samples Diesel#1-HDOH and Diesel#1-HDOH Lab Duplicate due to the presence of high level target species.

Dilution was performed on sample Ambient#1-HDOH due to the presence of high level non-target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---------------------------------------|
| File Name: | 2061508a | Date of Collection: 6/3/11 8:15:00 AM |
| Dil. Factor: | 2.24 | Date of Analysis: 6/15/11 12:41 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2.0 | Not Detected | 4.4 | Not Detected |
| Methyl tert-butyl ether | 1.2 | Not Detected | 4.4 | Not Detected |
| Benzene | 1.4 | Not Detected | 4.5 | Not Detected |
| Toluene | 1.2 | Not Detected | 4.5 | Not Detected |
| Ethyl Benzene | 1.0 | Not Detected | 4.5 | Not Detected |
| o-Xylene | 1.0 | Not Detected | 4.5 | Not Detected |
| m,p-Xylene | 1.0 | Not Detected | 4.5 | Not Detected |
| Naphthalene | 4.5 | Not Detected | 23 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

Client Sample ID: A-SVO13-HDOH

Lab ID#: 1106214A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---------------------------------------|
| File Name: | 2061509a | Date of Collection: 6/3/11 8:44:00 AM |
| Dil. Factor: | 2.29 | Date of Analysis: 6/15/11 01:17 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2.1 | Not Detected | 4.6 | Not Detected |
| Methyl tert-butyl ether | 1.2 | Not Detected | 4.5 | Not Detected |
| Benzene | 1.4 | 3.2 | 4.6 | 10 |
| Toluene | 1.2 | Not Detected | 4.6 | Not Detected |
| Ethyl Benzene | 1.0 | 1.4 | 4.6 | 6.3 |
| o-Xylene | 1.0 | Not Detected | 4.6 | Not Detected |
| m,p-Xylene | 1.0 | 2.5 | 4.6 | 11 |
| Naphthalene | 4.6 | Not Detected | 24 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 90 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---------------------------------------|
| File Name: | 2061510a | Date of Collection: 6/3/11 8:58:00 AM |
| Dil. Factor: | 2.13 | Date of Analysis: 6/15/11 01:53 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 1.9 | Not Detected | 4.2 | Not Detected |
| Methyl tert-butyl ether | 1.2 | Not Detected | 4.2 | Not Detected |
| Benzene | 1.3 | Not Detected | 4.3 | Not Detected |
| Toluene | 1.1 | Not Detected | 4.2 | Not Detected |
| Ethyl Benzene | 0.98 | Not Detected | 4.2 | Not Detected |
| o-Xylene | 0.98 | Not Detected | 4.2 | Not Detected |
| m,p-Xylene | 0.98 | Not Detected | 4.2 | Not Detected |
| Naphthalene | 4.3 | Not Detected | 22 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 86 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 90 | 70-130 |

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---------------------------------------|
| File Name: | 2061512a | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 242 | Date of Analysis: 6/15/11 03:12 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 220 | Not Detected | 480 | Not Detected |
| Methyl tert-butyl ether | 130 | Not Detected | 480 | Not Detected |
| Benzene | 150 | 5100 | 490 | 16000 |
| Toluene | 130 | 11000 | 480 | 42000 |
| Ethyl Benzene | 110 | 2200 | 480 | 9700 |
| o-Xylene | 110 | 2300 | 480 | 9800 |
| m,p-Xylene | 110 | 5200 | 480 | 22000 |
| Naphthalene | 480 | Not Detected | 2500 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 90 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

Client Sample ID: Diesel#1-HDOH Lab Duplicate

Lab ID#: 1106214A-04AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---------------------------------------|
| File Name: | 2061511a | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 48.4 | Date of Analysis: 6/15/11 02:31 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 44 | Not Detected | 96 | Not Detected |
| Methyl tert-butyl ether | 27 | Not Detected | 96 | Not Detected |
| Benzene | 30 | 5400 | 97 | 17000 |
| Toluene | 26 | 11000 E | 97 | 41000 E |
| Ethyl Benzene | 22 | 2600 | 97 | 11000 |
| o-Xylene | 22 | 2800 | 97 | 12000 |
| m,p-Xylene | 22 | 6000 | 97 | 26000 |
| Naphthalene | 97 | 140 | 510 | 730 |

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---------------------------------------|
| File Name: | 2061521a | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 4.76 | Date of Analysis: 6/15/11 09:25 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 4.3 | Not Detected | 9.5 | Not Detected |
| Methyl tert-butyl ether | 2.6 | Not Detected | 9.4 | Not Detected |
| Benzene | 3.0 | Not Detected | 9.6 | Not Detected |
| Toluene | 2.5 | Not Detected | 9.5 | Not Detected |
| Ethyl Benzene | 2.2 | Not Detected | 9.5 | Not Detected |
| o-Xylene | 2.2 | Not Detected | 9.5 | Not Detected |
| m,p-Xylene | 2.2 | Not Detected | 9.5 | Not Detected |
| Naphthalene | 9.5 | Not Detected | 50 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 83 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1106214A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|------------------------------------|
| File Name: | 2061507d | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 11:57 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 91 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 91 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1106214A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2061504 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 10:10 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 81 |
| Methyl tert-butyl ether | 91 |
| Benzene | 98 |
| Toluene | 98 |
| Ethyl Benzene | 101 |
| o-Xylene | 100 |
| m,p-Xylene | 104 |
| Naphthalene | 123 |
| C5-C8 Aliphatic Hydrocarbons | 72 |
| C9-C12 Aliphatic Hydrocarbons | 79 |
| C9-C10 Aromatic Hydrocarbons | 91 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 88 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1106214A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2061505 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/15/11 10:45 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 91 |
| Methyl tert-butyl ether | 102 |
| Benzene | 111 |
| Toluene | 110 |
| Ethyl Benzene | 111 |
| o-Xylene | 111 |
| m,p-Xylene | 114 |
| Naphthalene | 125 |
| C5-C8 Aliphatic Hydrocarbons | 74 |
| C9-C12 Aliphatic Hydrocarbons | 78 |
| C9-C10 Aromatic Hydrocarbons | 90 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 85 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | |
|-----------------------------|--|---|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other | 0 0 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical <input checked="" type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input checked="" type="checkbox"/> ≤20% <input type="checkbox"/> >20% | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|--------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.4% 1, 4-Difluorobenzene: %D from CCV: 4.6% Chlorobenzene-d5: %D from CCV: 4.5% MS Tuning Standard: Bromofluorobenzene | Client ID | A-SV04-HDOH | NA | | | |
| | Lab ID | 1106214A-01A | NA | | | |
| | Date Collected | 6/3/2011 | NA | | | |
| | Date Received | 6/9/2011 | NA | | | |
| | Date Analyzed | 6/15/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 3 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 3.0 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 2.24 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.5 | 2.0 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.5 | 1.2 | ND | ND | NA | NA |
| Benzene | 4.5 | 1.4 | ND | ND | NA | NA |
| Toluene | 4.5 | 1.2 | ND | ND | NA | NA |
| Ethylbenzene | 4.5 | 1.0 | ND | ND | NA | NA |
| m- & p- Xylenes | 4.5 | 1.0 | ND | ND | NA | NA |
| o-Xylene | 4.5 | 1.0 | ND | ND | NA | NA |
| Naphthalene | 4.5 | 0.86 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 27 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 27 | N/A | 27 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 22 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/27/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

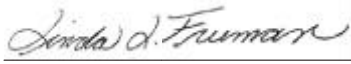
| | | | | | | |
|--|----------------------------|--------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.0% 1, 4-Difluorobenzene: %D from CCV: 3.3% Chlorobenzene-d5: %D from CCV: 2.9% MS Tuning Standard: Bromofluorobenzene | Client ID | A-SVO13-HDOH | | NA | | |
| | Lab ID | 1106214A-02A | | NA | | |
| | Date Collected | 6/3/2011 | | NA | | |
| | Date Received | 6/9/2011 | | NA | | |
| | Date Analyzed | 6/15/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30. | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4.5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.5 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 2.29 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.6 | 2.1 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.6 | 1.2 | ND | ND | NA | NA |
| Benzene | 4.6 | 1.4 | 10 | 3.2 | NA | NA |
| Toluene | 4.6 | 1.2 | ND | ND | NA | NA |
| Ethylbenzene | 4.6 | 1.0 | 6.3 | 1.4 | NA | NA |
| m- & p- Xylenes | 4.6 | 1.0 | 11 | 2.5 | NA | NA |
| o-Xylene | 4.6 | 1.0 | ND | ND | NA | NA |
| Naphthalene | 24 | 4.6 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 27 | N/A | 41 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 27 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 23 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

| | | |
|--|---|---|
| Were all QA/QC procedures REQUIRED by the APH Method followed? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were all performance/acceptance standards for required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were any significant modifications made to the APH method, as specified in Sect 11.1.2? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes - Details Attached |
| <p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p> | | |
| SIGNATURE:  | | POSITION: Laboratory Director |
| PRINTED NAME: Linda L. Freeman | | DATE: 06/24/2011 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|--------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 5.5% Chlorobenzene-d5: %D from CCV: 3.8% MS Tuning Standard: Bromofluorobenzene | Client ID | A-AS4-HDOH | NA | | | |
| | Lab ID | 1106214A-03A | NA | | | |
| | Date Collected | 6/3/2011 | NA | | | |
| | Date Received | 6/9/2011 | NA | | | |
| | Date Analyzed | 6/15/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 3 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 1.5 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 2.13 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.3 | 1.9 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.3 | 1.2 | ND | ND | NA | NA |
| Benzene | 4.3 | 1.3 | ND | ND | NA | NA |
| Toluene | 4.3 | 1.1 | ND | ND | NA | NA |
| Ethylbenzene | 4.3 | 0.98 | ND | ND | NA | NA |
| m- & p- Xylenes | 4.3 | 0.98 | ND | ND | NA | NA |
| o-Xylene | 4.3 | 0.98 | ND | ND | NA | NA |
| Naphthalene | 22 | 4.3 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 26 | N/A | 38 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 26 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 21 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 2.1% 1, 4-Difluorobenzene: %D from CCV: 3.3% Chlorobenzene-d5: %D from CCV: 0.69% MS Tuning Standard: Bromofluorobenzene | Client ID | | Diesel#1-HDOH | | NA | |
| | Lab ID | | 1106214A-04A | | NA | |
| | Date Collected | | 6/3/2011 | | NA | |
| | Date Received | | 6/9/2011 | | NA | |
| | Date Analyzed | | 6/15/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.0 | in. Hg | NA | in. Hg |
| Dilution Factor | | 242 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 480 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 480 | 130 | ND | ND | NA | NA |
| Benzene | 480 | 150 | 16000 | 5100 | NA | NA |
| Toluene | 480 | 130 | 42000 | 11000 | NA | NA |
| Ethylbenzene | 480 | 110 | 9700 | 2200 | NA | NA |
| m- & p- Xylenes | 480 | 110 | 22000 | 5200 | NA | NA |
| o-Xylene | 480 | 110 | 9800 | 2300 | NA | NA |
| Naphthalene | 2500 | 480 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 2900 | N/A | 1000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 2900 | N/A | 170000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2400 | N/A | 25000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|------------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.1% 1, 4-Difluorobenzene: %D from CCV: 3.2% Chlorobenzene-d5: %D from CCV: 7.8% MS Tuning Standard: Bromofluorobenzene | Client ID | Diesel#1-HDOH Lab Dupl | NA | | | |
| | Lab ID | 1106214A-04AA | NA | | | |
| | Date Collected | 6/3/2011 | NA | | | |
| | Date Received | 6/9/2011 | NA | | | |
| | Date Analyzed | 6/15/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 4 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 5.0 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 48.4 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 97 | 44 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 97 | 27 | ND | ND | NA | NA |
| Benzene | 97 | 30 | 17000 | 5400 | NA | NA |
| Toluene | 97 | 26 | 41000 E | 11000 E | NA | NA |
| Ethylbenzene | 97 | 22 | 11000 | 2600 | NA | NA |
| m- & p- Xylenes | 97 | 22 | 26000 | 6000 | NA | NA |
| o-Xylene | 97 | 22 | 12000 | 2800 | NA | NA |
| Naphthalene | 510 | 97 | 730 | 140 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 580 | N/A | 1000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 580 | N/A | 230000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 480 | N/A | 34000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 17% Chlorobenzene-d5: %D from CCV: 18% MS Tuning Standard: Bromofluorobenzene | Client ID | | Ambient#1-HDOH | | NA | |
| | Lab ID | | 1106214A-05A | | NA | |
| | Date Collected | | 6/3/2011 | | NA | |
| | Date Received | | 6/9/2011 | | NA | |
| | Date Analyzed | | 6/15/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.5 | in. Hg | NA | in. Hg |
| Dilution Factor | | 4.76 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 9.5 | 4.3 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 9.5 | 2.6 | ND | ND | NA | NA |
| Benzene | 9.5 | 3.0 | ND | ND | NA | NA |
| Toluene | 9.5 | 2.5 | ND | ND | NA | NA |
| Ethylbenzene | 9.5 | 2.2 | ND | ND | NA | NA |
| m- & p- Xylenes | 9.5 | 2.2 | ND | ND | NA | NA |
| o-Xylene | 9.5 | 2.2 | ND | ND | NA | NA |
| Naphthalene | 50 | 9.5 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 57 | N/A | 58 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 57 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 48 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | |
|-----------------------------|---|---|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other | 0 0 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 4.2% Chlorobenzene-d5: %D from CCV: 2.0% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1106214A-06A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 6/15/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

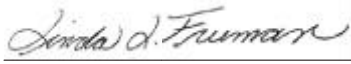
| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 2.1% 1, 4-Difluorobenzene: %D from CCV: 3.3% Chlorobenzene-d5: %D from CCV: 0.69% MS Tuning Standard: Bromofluorobenzene | Client ID | | Diesel#1-HDOH | | NA | |
| | Lab ID | | 1106214A-04A | | NA | |
| | Date Collected | | 6/3/2011 | | NA | |
| | Date Received | | 6/9/2011 | | NA | |
| | Date Analyzed | | 6/15/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.0 | in. Hg | NA | in. Hg |
| Dilution Factor | | 242 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 480 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 480 | 130 | ND | ND | NA | NA |
| Benzene | 480 | 150 | 16000 | 5100 | NA | NA |
| Toluene | 480 | 130 | 42000 | 11000 | NA | NA |
| Ethylbenzene | 480 | 110 | 9700 | 2200 | NA | NA |
| m- & p- Xylenes | 480 | 110 | 22000 | 5200 | NA | NA |
| o-Xylene | 480 | 110 | 9800 | 2300 | NA | NA |
| Naphthalene | 2500 | 480 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 2900 | N/A | 1000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 2900 | N/A | 170000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2400 | N/A | 25000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

| | | |
|--|---|---|
| Were all QA/QC procedures REQUIRED by the APH Method followed? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were all performance/acceptance standards for required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were any significant modifications made to the APH method, as specified in Sect 11.1.2? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes - Details Attached |
| <p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p> | | |
| SIGNATURE:  | | POSITION: Laboratory Director |
| PRINTED NAME: Linda L. Freeman | | DATE: 06/24/2011 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|------------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.1% 1, 4-Difluorobenzene: %D from CCV: 3.2% Chlorobenzene-d5: %D from CCV: 7.8% MS Tuning Standard: Bromofluorobenzene | Client ID | Diesel#1-HDOH Lab Dupl | NA | | | |
| | Lab ID | 1106214A-04AA | NA | | | |
| | Date Collected | 6/3/2011 | NA | | | |
| | Date Received | 6/9/2011 | NA | | | |
| | Date Analyzed | 6/15/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 4 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 5.0 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 48.4 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 97 | 44 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 97 | 27 | ND | ND | NA | NA |
| Benzene | 97 | 30 | 17000 | 5400 | NA | NA |
| Toluene | 97 | 26 | 41000 E | 11000 E | NA | NA |
| Ethylbenzene | 97 | 22 | 11000 | 2600 | NA | NA |
| m- & p- Xylenes | 97 | 22 | 26000 | 6000 | NA | NA |
| o-Xylene | 97 | 22 | 12000 | 2800 | NA | NA |
| Naphthalene | 510 | 97 | 730 | 140 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 580 | N/A | 1000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 580 | N/A | 230000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 480 | N/A | 34000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 06/24/2011

7/11/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1106457A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/21/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106457A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

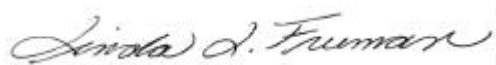
DATE RECEIVED: 06/21/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 07/11/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------------|-------------------|-------------------------------|---------------------------|
| 01A | HAFB-VP26-B05(18)-HDOH | Massachusetts APH | 5.0 "Hg | 15 psi |
| 02A | HAFB-VP26-B05(24)-HDOH | Massachusetts APH | 5.0 "Hg | 15 psi |
| 03A | HAFB-VP26-B07(20)-HDOH | Massachusetts APH | 3.5 "Hg | 15 psi |
| 03AA | HAFB-VP26-B07(20)-HDOH Lab Duplic | Massachusetts APH | 3.5 "Hg | 15 psi |
| 04A | HAFB-VP26-B07(25)-HDOH | Massachusetts APH | 3.5 "Hg | 15 psi |
| 05A | HAFB-VP26-B08(21)-HDOH | Massachusetts APH | 4.0 "Hg | 15 psi |
| 06A | Lab Blank | Massachusetts APH | NA | NA |
| 07A | CCV | Massachusetts APH | NA | NA |
| 08A | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 07/11/11

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1106457A

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 21, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The reported LCS for each daily batch has been derived from more than one analytical file.

Dilution was performed on samples HAFB-VP26-B05(18)-HDOH, HAFB-VP26-B05(24)-HDOH, HAFB-VP26-B07(20)-HDOH, HAFB-VP26-B07(20)-HDOH Lab Duplicate, HAFB-VP26-B07(25)-HDOH and HAFB-VP26-B08(21)-HDOH due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2062817a | Date of Collection: 6/16/11 11:44:00 AM |
| Dil. Factor: | 2420 | Date of Analysis: 6/29/11 06:53 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2200 | Not Detected | 4800 | Not Detected |
| Methyl tert-butyl ether | 1300 | Not Detected | 4800 | Not Detected |
| Benzene | 1500 | 9100 | 4900 | 29000 |
| Toluene | 1300 | Not Detected | 4800 | Not Detected |
| Ethyl Benzene | 1100 | 3300 | 4800 | 14000 |
| o-Xylene | 1100 | Not Detected | 4800 | Not Detected |
| m,p-Xylene | 1100 | Not Detected | 4800 | Not Detected |
| Naphthalene | 4800 | Not Detected | 25000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2062820a | Date of Collection: 6/16/11 12:32:00 PM |
| Dil. Factor: | 121000 | Date of Analysis: 6/29/11 09:09 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 110000 | Not Detected | 240000 | Not Detected |
| Methyl tert-butyl ether | 66000 | Not Detected | 240000 | Not Detected |
| Benzene | 76000 | 150000 | 240000 | 470000 |
| Toluene | 64000 | Not Detected | 240000 | Not Detected |
| Ethyl Benzene | 56000 | Not Detected | 240000 | Not Detected |
| o-Xylene | 56000 | Not Detected | 240000 | Not Detected |
| m,p-Xylene | 56000 | Not Detected | 240000 | Not Detected |
| Naphthalene | 240000 | Not Detected | 1300000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2062825a | Date of Collection: 6/16/11 12:42:00 PM |
| Dil. Factor: | 114 | Date of Analysis: 6/29/11 12:11 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 100 | Not Detected | 230 | Not Detected |
| Methyl tert-butyl ether | 63 | Not Detected | 230 | Not Detected |
| Benzene | 72 | 18000 | 230 | 58000 |
| Toluene | 60 | Not Detected | 230 | Not Detected |
| Ethyl Benzene | 52 | 9200 | 230 | 40000 |
| o-Xylene | 52 | Not Detected | 230 | Not Detected |
| m,p-Xylene | 52 | 99 | 230 | 430 |
| Naphthalene | 230 | Not Detected | 1200 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

Client Sample ID: HAFB-VP26-B07(20)-HDOH Lab Duplicate

Lab ID#: 1106457A-03AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2062823a | Date of Collection: 6/16/11 12:42:00 PM |
| Dil. Factor: | 30.5 | Date of Analysis: 6/29/11 10:46 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 27 | Not Detected | 61 | Not Detected |
| Methyl tert-butyl ether | 17 | Not Detected | 60 | Not Detected |
| Benzene | 19 | 17000 E | 61 | 54000 E |
| Toluene | 16 | 27 | 61 | 100 |
| Ethyl Benzene | 14 | 9800 E | 61 | 42000 E |
| o-Xylene | 14 | Not Detected | 61 | Not Detected |
| m,p-Xylene | 14 | 110 | 61 | 480 |
| Naphthalene | 61 | Not Detected | 320 | Not Detected |

E = Exceeds instrument calibration range.

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 129 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 114 | 70-130 |

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2062822a | Date of Collection: 6/16/11 1:25:00 PM |
| Dil. Factor: | 2290 | Date of Analysis: 6/29/11 10:17 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 2100 | Not Detected | 4600 | Not Detected |
| Methyl tert-butyl ether | 1200 | Not Detected | 4500 | Not Detected |
| Benzene | 1400 | 6000 | 4600 | 19000 |
| Toluene | 1200 | Not Detected | 4600 | Not Detected |
| Ethyl Benzene | 1000 | 2100 | 4600 | 9200 |
| o-Xylene | 1000 | Not Detected | 4600 | Not Detected |
| m,p-Xylene | 1000 | Not Detected | 4600 | Not Detected |
| Naphthalene | 4600 | Not Detected | 24000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2062826a | Date of Collection: 6/16/11 11:18:00 AM |
| Dil. Factor: | 31.1 | Date of Analysis: 6/29/11 12:48 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 28 | Not Detected | 62 | Not Detected |
| Methyl tert-butyl ether | 17 | Not Detected | 62 | Not Detected |
| Benzene | 20 | 180 | 62 | 570 |
| Toluene | 16 | 35 | 62 | 130 |
| Ethyl Benzene | 14 | 39 | 62 | 170 |
| o-Xylene | 14 | Not Detected | 62 | Not Detected |
| m,p-Xylene | 14 | 140 | 62 | 620 |
| Naphthalene | 62 | Not Detected | 330 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 122 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1106457A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|------------------------------------|
| File Name: | 2062810e | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/28/11 07:35 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 91 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1106457A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2062804 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/28/11 03:54 PM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 82 |
| Methyl tert-butyl ether | 85 |
| Benzene | 87 |
| Toluene | 88 |
| Ethyl Benzene | 86 |
| o-Xylene | 87 |
| m,p-Xylene | 85 |
| Naphthalene | 123 |
| C5-C8 Aliphatic Hydrocarbons | 70 |
| C9-C12 Aliphatic Hydrocarbons | 70 |
| C9-C10 Aromatic Hydrocarbons | 76 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1106457A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2062807 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/28/11 05:43 PM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 81 |
| Methyl tert-butyl ether | 80 |
| Benzene | 80 |
| Toluene | 80 |
| Ethyl Benzene | 80 |
| o-Xylene | 81 |
| m,p-Xylene | 80 |
| Naphthalene | 91 |
| C5-C8 Aliphatic Hydrocarbons | 80 |
| C9-C12 Aliphatic Hydrocarbons | 74 |
| C9-C10 Aromatic Hydrocarbons | 81 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|-----------------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 7.9% 1, 4-Difluorobenzene: %D from CCV: 3.0% Chlorobenzene-d5: %D from CCV: 3.1% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-VP26-B05(18)-HDO | | NA | | |
| | Lab ID | 1106457A-01A | | NA | | |
| | Date Collected | 6/16/2011 | | NA | | |
| | Date Received | 6/21/2011 | | NA | | |
| | Date Analyzed | 6/29/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 5.0 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 2420 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4800 | 2200 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4800 | 1300 | ND | ND | NA | NA |
| Benzene | 4800 | 1500 | 29000 | 9100 | NA | NA |
| Toluene | 4800 | 1300 | ND | ND | NA | NA |
| Ethylbenzene | 4800 | 1100 | 14000 | 3300 | NA | NA |
| m- & p- Xylenes | 4800 | 1100 | ND | ND | NA | NA |
| o-Xylene | 4800 | 1100 | ND | ND | NA | NA |
| Naphthalene | 25000 | 4800 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 29000 | N/A | 18000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 29000 | N/A | 330000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 24000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|-----------------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 16% Chlorobenzene-d5: %D from CCV: 15% MS Tuning Standard: Bromofluorobenzene | Client ID | | HAFB-VP26-B05(24)-HDO | | NA | |
| | Lab ID | | 1106457A-02A | | NA | |
| | Date Collected | | 6/16/2011 | | NA | |
| | Date Received | | 6/21/2011 | | NA | |
| | Date Analyzed | | 6/29/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 3 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.0 | in. Hg | NA | in. Hg |
| Dilution Factor | | 121000 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 240000 | 110000 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 240000 | 66000 | ND | ND | NA | NA |
| Benzene | 240000 | 76000 | 470000 | 150000 | NA | NA |
| Toluene | 240000 | 64000 | ND | ND | NA | NA |
| Ethylbenzene | 240000 | 56000 | ND | ND | NA | NA |
| m- & p- Xylenes | 240000 | 56000 | ND | ND | NA | NA |
| o-Xylene | 240000 | 56000 | ND | ND | NA | NA |
| Naphthalene | 1300000 | 240000 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 1400000 | N/A | 160000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 1400000 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 1200000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 15% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 11% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-VP26-B07(20)-HDO | | NA | | |
| | Lab ID | 1106457A-03A | | NA | | |
| | Date Collected | 6/16/2011 | | NA | | |
| | Date Received | 6/21/2011 | | NA | | |
| | Date Analyzed | 6/29/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.5 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 114 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 230 | 100 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 230 | 63 | ND | ND | NA | NA |
| Benzene | 230 | 71 | 58000 | 18000 | NA | NA |
| Toluene | 230 | 60 | ND | ND | NA | NA |
| Ethylbenzene | 230 | 52 | 40000 | 9200 | NA | NA |
| m- & p- Xylenes | 230 | 52 | 430 | 99 | NA | NA |
| o-Xylene | 230 | 52 | ND | ND | NA | NA |
| Naphthalene | 1200 | 230 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 1400 | N/A | 12000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 1400 | N/A | 220000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 1100 | N/A | 8000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/11/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 14% Chlorobenzene-d5: %D from CCV: 17% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-VP26-B07(20)-HDO | | NA | | |
| | Lab ID | 1106457A-03AA | | NA | | |
| | Date Collected | 6/16/2011 | | NA | | |
| | Date Received | 6/21/2011 | | NA | | |
| | Date Analyzed | 6/29/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.5 | in. Hg | NA | in. Hg | |
| Dilution Factor | 30.5 | | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 61 | 28 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 61 | 17 | ND | ND | NA | NA |
| Benzene | 61 | 19 | 54000 | 17000 | NA | NA |
| Toluene | 61 | 16 | 100 | 27 | NA | NA |
| Ethylbenzene | 61 | 14 | 42000 | 9800 | NA | NA |
| m- & p- Xylenes | 61 | 14 | 480 | 110 | NA | NA |
| o-Xylene | 61 | 14 | ND | ND | NA | NA |
| Naphthalene | 320 | 61 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 370 | N/A | 8800000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 370 | N/A | 260000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 300 | N/A | 9800 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/11/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 14% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 14% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-VP26-B07(25)-HDO | | NA | | |
| | Lab ID | 1106457A-04A | | NA | | |
| | Date Collected | 6/16/2011 | | NA | | |
| | Date Received | 6/21/2011 | | NA | | |
| | Date Analyzed | 6/29/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 3 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.5 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 2290 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4600 | 2100 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4600 | 1200 | ND | ND | NA | NA |
| Benzene | 4600 | 1400 | 19000 | 6000 | NA | NA |
| Toluene | 4600 | 1200 | ND | ND | NA | NA |
| Ethylbenzene | 4600 | 1000 | 9200 | 2100 | NA | NA |
| m- & p- Xylenes | 4600 | 1000 | ND | ND | NA | NA |
| o-Xylene | 4600 | 1000 | ND | ND | NA | NA |
| Naphthalene | 24000 | 4600 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 27000 | N/A | 58000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 27000 | N/A | 78000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 23000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|-----------------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 38% 1, 4-Difluorobenzene: %D from CCV: 24% Chlorobenzene-d5: %D from CCV: 7.5% MS Tuning Standard: Bromofluorobenzene | Client ID | | HAFB-VP26-B08(21)-HDO | | NA | |
| | Lab ID | | 1106457A-05A | | NA | |
| | Date Collected | | 6/16/2011 | | NA | |
| | Date Received | | 6/21/2011 | | NA | |
| | Date Analyzed | | 6/29/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.0 | in. Hg | NA | in. Hg |
| Dilution Factor | | 31.1 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 62 | 28 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 62 | 17 | ND | ND | NA | NA |
| Benzene | 62 | 19 | 570 | 180 | NA | NA |
| Toluene | 62 | 16 | 130 | 35 | NA | NA |
| Ethylbenzene | 62 | 14 | 170 | 39 | NA | NA |
| m- & p- Xylenes | 62 | 14 | 620 | 140 | NA | NA |
| o-Xylene | 62 | 14 | ND | ND | NA | NA |
| Naphthalene | 330 | 62 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 370 | N/A | 6700000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 370 | N/A | 920000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 310 | N/A | 10000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/11/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | |
|-----------------------------|---|---|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other | 0 0 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 15% 1, 4-Difluorobenzene: %D from CCV: 9.2% Chlorobenzene-d5: %D from CCV: 7.6% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1106457A-06A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 6/28/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | in. Hg | | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 07/07/2011

8/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1107310A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 7/19/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1107310A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

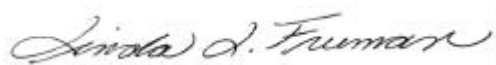
DATE RECEIVED: 07/19/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/02/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------------|-------------------|-------------------------------|---------------------------|
| 01A | HAFB-ST03-B58 (347) | Massachusetts APH | 5.5"Hg | 15 psi |
| 01AA | HAFB-ST03-B58 (347) Lab Duplicate | Massachusetts APH | 5.5"Hg | 15 psi |
| 02A | HAFB-ST03-B58 (422) | Massachusetts APH | 4.0"Hg | 15 psi |
| 03A | HAFB-ST03-B58 (492) | Massachusetts APH | 5.0"Hg | 15 psi |
| 04A | HAFB-ST03-B58 (388) | Massachusetts APH | 4.5"Hg | 15 psi |
| 05A | Lab Blank | Massachusetts APH | NA | NA |
| 06A | CCV | Massachusetts APH | NA | NA |
| 07A | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 08/02/11

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1107310A

Four 1 Liter Summa Canister (MA APH Certified) samples were received on July 19, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

The Chain of Custody (COC) information for samples HAFB-ST03-B58 (347) and HAFB-ST03-B58 (492) did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The reported LCS for each daily batch has been derived from more than one analytical file.

Dilution was performed on samples HAFB-ST03-B58 (347), HAFB-ST03-B58 (347) Lab Duplicate, HAFB-ST03-B58 (422), HAFB-ST03-B58 (492) and HAFB-ST03-B58 (388) due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2072127a | Date of Collection: 7/14/11 10:47:00 AM |
| Dil. Factor: | 9.88 | Date of Analysis: 7/21/11 09:52 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 8.9 | Not Detected | 20 | Not Detected |
| Methyl tert-butyl ether | 5.4 | Not Detected | 20 | Not Detected |
| Benzene | 6.2 | 6.8 | 20 | 22 |
| Toluene | 5.2 | 110 | 20 | 400 |
| Ethyl Benzene | 4.5 | 32 | 20 | 140 |
| o-Xylene | 4.5 | 28 | 20 | 120 |
| m,p-Xylene | 4.5 | 250 | 20 | 1100 |
| Naphthalene | 20 | Not Detected | 100 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 116 | 70-130 |

Client Sample ID: HAFB-ST03-B58 (347) Lab Duplicate

Lab ID#: 1107310A-01AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2072124a | Date of Collection: 7/14/11 10:47:00 AM |
| Dil. Factor: | 32.9 | Date of Analysis: 7/21/11 08:25 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 30 | Not Detected | 66 | Not Detected |
| Methyl tert-butyl ether | 18 | Not Detected | 65 | Not Detected |
| Benzene | 21 | Not Detected | 66 | Not Detected |
| Toluene | 17 | 130 | 66 | 490 |
| Ethyl Benzene | 15 | 37 | 66 | 160 |
| o-Xylene | 15 | 30 | 66 | 130 |
| m,p-Xylene | 15 | 280 | 66 | 1200 |
| Naphthalene | 66 | Not Detected | 340 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 95 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 112 | 70-130 |

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2072128a | Date of Collection: 7/14/11 11:00:00 AM |
| Dil. Factor: | 6.21 | Date of Analysis: 7/21/11 10:21 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 5.6 | Not Detected | 12 | Not Detected |
| Methyl tert-butyl ether | 3.4 | Not Detected | 12 | Not Detected |
| Benzene | 3.9 | 4.4 | 12 | 14 |
| Toluene | 3.3 | 55 | 12 | 210 |
| Ethyl Benzene | 2.8 | 12 | 12 | 54 |
| o-Xylene | 2.8 | 11 | 12 | 49 |
| m,p-Xylene | 2.8 | 64 | 12 | 280 |
| Naphthalene | 12 | Not Detected | 65 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 95 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 114 | 70-130 |

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2072125a | Date of Collection: 7/14/11 11:55:00 AM |
| Dil. Factor: | 32.3 | Date of Analysis: 7/21/11 08:53 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 29 | Not Detected | 64 | Not Detected |
| Methyl tert-butyl ether | 18 | Not Detected | 64 | Not Detected |
| Benzene | 20 | 25 | 65 | 79 |
| Toluene | 17 | 180 | 64 | 680 |
| Ethyl Benzene | 15 | 55 | 64 | 240 |
| o-Xylene | 15 | 50 | 64 | 220 |
| m,p-Xylene | 15 | 430 | 64 | 1900 |
| Naphthalene | 65 | Not Detected | 340 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 116 | 70-130 |

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2072126a | Date of Collection: 7/14/11 12:08:00 PM |
| Dil. Factor: | 31.7 | Date of Analysis: 7/21/11 09:21 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 28 | Not Detected | 63 | Not Detected |
| Methyl tert-butyl ether | 17 | Not Detected | 63 | Not Detected |
| Benzene | 20 | Not Detected | 64 | Not Detected |
| Toluene | 17 | 140 | 63 | 550 |
| Ethyl Benzene | 14 | 39 | 63 | 170 |
| o-Xylene | 14 | 38 | 63 | 160 |
| m,p-Xylene | 14 | 210 | 63 | 920 |
| Naphthalene | 63 | Not Detected | 330 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 115 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1107310A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|------------------------------------|
| File Name: | 2072110a | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 7/21/11 11:14 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1107310A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2072102 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 7/21/11 06:45 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 83 |
| Methyl tert-butyl ether | 88 |
| Benzene | 82 |
| Toluene | 80 |
| Ethyl Benzene | 85 |
| o-Xylene | 92 |
| m,p-Xylene | 91 |
| Naphthalene | 91 |
| C5-C8 Aliphatic Hydrocarbons | 84 |
| C9-C12 Aliphatic Hydrocarbons | 81 |
| C9-C10 Aromatic Hydrocarbons | 103 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 108 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1107310A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2072103 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 7/21/11 07:13 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 84 |
| Methyl tert-butyl ether | 99 |
| Benzene | 89 |
| Toluene | 87 |
| Ethyl Benzene | 94 |
| o-Xylene | 102 |
| m,p-Xylene | 100 |
| Naphthalene | 132 |
| C5-C8 Aliphatic Hydrocarbons | 84 |
| C9-C12 Aliphatic Hydrocarbons | 79 |
| C9-C10 Aromatic Hydrocarbons | 102 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 109 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 6.7% 1, 4-Difluorobenzene: %D from CCV: 2.7% Chlorobenzene-d5: %D from CCV: 2.8% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58 (347) | NA | | | |
| | Lab ID | 1107310A-01A | NA | | | |
| | Date Collected | 7/14/2011 | NA | | | |
| | Date Received | 7/19/2011 | NA | | | |
| | Date Analyzed | 7/21/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 5.5 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 9.88 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 20 | 8.9 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 20 | 5.4 | ND | ND | NA | NA |
| Benzene | 20 | 6.2 | 22 | 6.8 | NA | NA |
| Toluene | 20 | 5.2 | 400 | 110 | NA | NA |
| Ethylbenzene | 20 | 4.6 | 140 | 32 | NA | NA |
| m- & p- Xylenes | 20 | 4.6 | 1100 | 250 | NA | NA |
| o-Xylene | 20 | 4.6 | 120 | 28 | NA | NA |
| Naphthalene | 100 | 20 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 120 | N/A | 130000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 120 | N/A | 43000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 99 | N/A | 340 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|-------------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 3.0% 1, 4-Difluorobenzene: %D from CCV: 0.80% Chlorobenzene-d5: %D from CCV: 0.60% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58 (347) Lab | | NA | | |
| | Lab ID | 1107310A-01AA | | NA | | |
| | Date Collected | 7/14/2011 | | NA | | |
| | Date Received | 7/19/2011 | | NA | | |
| | Date Analyzed | 7/21/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 5.5 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 32.9 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 66 | 30 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 66 | 18 | ND | ND | NA | NA |
| Benzene | 66 | 20 | ND | ND | NA | NA |
| Toluene | 66 | 17 | 490 | 130 | NA | NA |
| Ethylbenzene | 66 | 15 | 160 | 37 | NA | NA |
| m- & p- Xylenes | 66 | 15 | 1200 | 280 | NA | NA |
| o-Xylene | 66 | 15 | 130 | 30 | NA | NA |
| Naphthalene | 340 | 66 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 390 | N/A | 150000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 390 | N/A | 38000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 330 | N/A | 370 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 5.4% 1, 4-Difluorobenzene: %D from CCV: 3.7% Chlorobenzene-d5: %D from CCV: 3.2% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58 (422) | NA | | | |
| | Lab ID | 1107310A-02A | NA | | | |
| | Date Collected | 7/14/2011 | NA | | | |
| | Date Received | 7/19/2011 | NA | | | |
| | Date Analyzed | 7/21/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 3 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 4.0 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 6.21 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 12 | 5.6 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 12 | 3.4 | ND | ND | NA | NA |
| Benzene | 12 | 3.9 | 14 | 4.4 | NA | NA |
| Toluene | 12 | 3.3 | 210 | 55 | NA | NA |
| Ethylbenzene | 12 | 2.9 | 54 | 12 | NA | NA |
| m- & p- Xylenes | 12 | 2.9 | 280 | 64 | NA | NA |
| o-Xylene | 12 | 2.9 | 49 | 11 | NA | NA |
| Naphthalene | 65 | 12 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 74 | N/A | 64000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 74 | N/A | 16000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 62 | N/A | 200 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | |
|-----------------------------|---|---|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input checked="" type="checkbox"/> ≤20% <input type="checkbox"/> >20% | | | | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|---------------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 5.3% 1, 4-Difluorobenzene: %D from CCV: 2.0% Chlorobenzene-d5: %D from CCV: 0.50% MS Tuning Standard: Bromofluorobenzene | Client ID | | HAFB-ST03-B58 (492) | | NA | |
| | Lab ID | | 1107310A-03A | | NA | |
| | Date Collected | | 7/14/2011 | | NA | |
| | Date Received | | 7/19/2011 | | NA | |
| | Date Analyzed | | 7/21/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 5 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.0 | in. Hg | NA | in. Hg |
| Dilution Factor | | 32.3 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 65 | 29 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 65 | 18 | ND | ND | NA | NA |
| Benzene | 65 | 20 | 79 | 25 | NA | NA |
| Toluene | 65 | 17 | 680 | 180 | NA | NA |
| Ethylbenzene | 65 | 15 | 240 | 55 | NA | NA |
| m- & p- Xylenes | 65 | 15 | 1900 | 430 | NA | NA |
| o-Xylene | 65 | 15 | 220 | 50 | NA | NA |
| Naphthalene | 340 | 65 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 390 | N/A | 420000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 390 | N/A | 110000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 320 | N/A | 850 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input checked="" type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.2% 1, 4-Difluorobenzene: %D from CCV: 2.2% Chlorobenzene-d5: %D from CCV: 1.6% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58 (388) | | NA | | |
| | Lab ID | 1107310A-04A | | NA | | |
| | Date Collected | 7/14/2011 | | NA | | |
| | Date Received | 7/19/2011 | | NA | | |
| | Date Analyzed | 7/21/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 4.5 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 31.7 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 63 | 29 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 63 | 17 | ND | ND | NA | NA |
| Benzene | 63 | 20 | ND | ND | NA | NA |
| Toluene | 63 | 17 | 550 | 140 | NA | NA |
| Ethylbenzene | 63 | 15 | 170 | 39 | NA | NA |
| m- & p- Xylenes | 63 | 15 | 920 | 210 | NA | NA |
| o-Xylene | 63 | 15 | 160 | 38 | NA | NA |
| Naphthalene | 330 | 63 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 380 | N/A | 410000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 380 | N/A | 100000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 320 | N/A | 700 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/02/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---------------------------------|---------------------------------|----------------------------------|--------------------------------|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

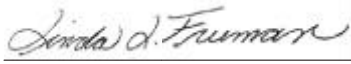
| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 6.5% 1, 4-Difluorobenzene: %D from CCV: 3.2% Chlorobenzene-d5: %D from CCV: 5.3% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1107310A-05A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 7/21/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

| | | |
|--|---|---|
| Were all QA/QC procedures REQUIRED by the APH Method followed? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were all performance/acceptance standards for required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were any significant modifications made to the APH method, as specified in Sect 11.1.2? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes - Details Attached |
| <p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p> | | |
| SIGNATURE:  | POSITION: <u>Laboratory Director</u> | |
| PRINTED NAME: <u>Linda L. Freeman</u> | DATE: <u>08/02/2011</u> | |

9/7/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108544A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108544A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

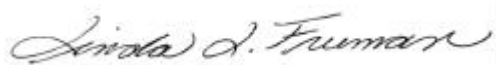
DATE RECEIVED: 08/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 09/07/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------|-------------------|-------------------------------|---------------------------|
| 01A | HDOH-GASOLINE#1 | Massachusetts APH | 4.5 "Hg | 15 psi |
| 02A | HDOH-DIESEL#2 | Massachusetts APH | 4.0 "Hg | 15 psi |
| 02AA | HDOH-DIESEL#2 Lab Duplicate | Massachusetts APH | 4.0 "Hg | 15 psi |
| 03A | Lab Blank | Massachusetts APH | NA | NA |
| 04A | CCV | Massachusetts APH | NA | NA |
| 05A | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 09/07/11

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1108544A

Two 1 Liter Summa Canister (MA APH Certified) samples were received on August 26, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The reported LCS for each daily batch has been derived from more than one analytical file.

Dilution was performed on samples HDOH-GASOLINE#1, HDOH-DIESEL#2 and HDOH-DIESEL#2 Lab Duplicate due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2083020a | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 47600 | Date of Analysis: 8/30/11 09:37 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 43000 | Not Detected | 95000 | Not Detected |
| Methyl tert-butyl ether | 26000 | Not Detected | 94000 | Not Detected |
| Benzene | 30000 | 1600000 | 96000 | 5100000 |
| Toluene | 25000 | 7500000 | 95000 | 28000000 |
| Ethyl Benzene | 22000 | 480000 | 95000 | 2100000 |
| o-Xylene | 22000 | 490000 | 95000 | 2100000 |
| m,p-Xylene | 22000 | 1700000 | 95000 | 7400000 |
| Naphthalene | 95000 | Not Detected | 500000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 89 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2083021a | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 58.2 | Date of Analysis: 8/30/11 11:16 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 52 | Not Detected | 120 | Not Detected |
| Methyl tert-butyl ether | 32 | Not Detected | 120 | Not Detected |
| Benzene | 37 | 900 | 120 | 2900 |
| Toluene | 31 | 5500 | 120 | 21000 |
| Ethyl Benzene | 27 | 1400 | 120 | 6000 |
| o-Xylene | 27 | 2700 | 120 | 12000 |
| m,p-Xylene | 27 | 5800 | 120 | 25000 |
| Naphthalene | 120 | 660 | 610 | 3500 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 89 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 112 | 70-130 |

Client Sample ID: HDOH-DIESEL#2 Lab Duplicate

Lab ID#: 1108544A-02AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2083022a | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 58.2 | Date of Analysis: 8/31/11 12:07 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 52 | Not Detected | 120 | Not Detected |
| Methyl tert-butyl ether | 32 | Not Detected | 120 | Not Detected |
| Benzene | 37 | 810 | 120 | 2600 |
| Toluene | 31 | 5000 | 120 | 19000 |
| Ethyl Benzene | 27 | 1200 | 120 | 5400 |
| o-Xylene | 27 | 2400 | 120 | 10000 |
| m,p-Xylene | 27 | 5300 | 120 | 23000 |
| Naphthalene | 120 | 600 | 610 | 3200 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 86 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 112 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1108544A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|------------------------------------|
| File Name: | 2083008e | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/30/11 09:51 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1108544A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2083002 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/30/11 05:47 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 92 |
| Methyl tert-butyl ether | 76 |
| Benzene | 92 |
| Toluene | 92 |
| Ethyl Benzene | 95 |
| o-Xylene | 102 |
| m,p-Xylene | 99 |
| Naphthalene | 96 |
| C5-C8 Aliphatic Hydrocarbons | 83 |
| C9-C12 Aliphatic Hydrocarbons | 81 |
| C9-C10 Aromatic Hydrocarbons | 107 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1108544A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2083003 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/30/11 06:27 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 92 |
| Methyl tert-butyl ether | 80 |
| Benzene | 95 |
| Toluene | 93 |
| Ethyl Benzene | 99 |
| o-Xylene | 108 |
| m,p-Xylene | 104 |
| Naphthalene | 118 |
| C5-C8 Aliphatic Hydrocarbons | 85 |
| C9-C12 Aliphatic Hydrocarbons | 82 |
| C9-C10 Aromatic Hydrocarbons | 103 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 91 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 109 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|-----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 12% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene | Client ID | | HDOH-GASOLINE#1 | | NA | |
| | Lab ID | | 1108544A-01A | | NA | |
| | Date Collected | | 8/25/2011 | | NA | |
| | Date Received | | 8/26/2011 | | NA | |
| | Date Analyzed | | 8/30/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 3 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.5 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 47600 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 95000 | 43000 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 95000 | 26000 | ND | ND | NA | NA |
| Benzene | 95000 | 30000 | 5100000 | 1600000 | NA | NA |
| Toluene | 95000 | 25000 | 28000000 | 7500000 | NA | NA |
| Ethylbenzene | 95000 | 22000 | 2100000 | 480000 | NA | NA |
| m- & p- Xylenes | 95000 | 22000 | 7300000 | 1700000 | NA | NA |
| o-Xylene | 95000 | 22000 | 2100000 | 490000 | NA | NA |
| Naphthalene | 500000 | 95000 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 570000 | N/A | 260000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 570000 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 480000 | N/A | 1700000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:

Linda L. Freeman

POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 09/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 14% 1, 4-Difluorobenzene: %D from CCV: 22% Chlorobenzene-d5: %D from CCV: 22% MS Tuning Standard: Bromofluorobenzene | Client ID | | HDOH-DIESEL#2 | | NA | |
| | Lab ID | | 1108544A-02A | | NA | |
| | Date Collected | | 8/25/2011 | | NA | |
| | Date Received | | 8/26/2011 | | NA | |
| | Date Analyzed | | 8/30/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.0 | in. Hg | NA | in. Hg |
| Dilution Factor | | 58.2 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 120 | 53 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 120 | 32 | ND | ND | NA | NA |
| Benzene | 120 | 36 | 2900 | 900 | NA | NA |
| Toluene | 120 | 31 | 21000 | 5500 | NA | NA |
| Ethylbenzene | 120 | 27 | 6000 | 1400 | NA | NA |
| m- & p- Xylenes | 120 | 27 | 25000 | 5800 | NA | NA |
| o-Xylene | 120 | 27 | 12000 | 2700 | NA | NA |
| Naphthalene | 610 | 120 | 3500 | 660 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 700 | N/A | 320000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 700 | N/A | 560000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 580 | N/A | 94000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 09/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 17% 1, 4-Difluorobenzene: %D from CCV: 25% Chlorobenzene-d5: %D from CCV: 25% MS Tuning Standard: Bromofluorobenzene | Client ID | | HDOH-DIESEL#2 Lab Dup | | NA | |
| | Lab ID | | 1108544A-02AA | | NA | |
| | Date Collected | | 8/25/2011 | | NA | |
| | Date Received | | 8/26/2011 | | NA | |
| | Date Analyzed | | 8/31/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.0 | in. Hg | NA | in. Hg |
| Dilution Factor | | 58.2 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 120 | 53 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 120 | 32 | ND | ND | NA | NA |
| Benzene | 120 | 36 | 2600 | 810 | NA | NA |
| Toluene | 120 | 31 | 19000 | 5000 | NA | NA |
| Ethylbenzene | 120 | 27 | 5400 | 1200 | NA | NA |
| m- & p- Xylenes | 120 | 27 | 23000 | 5300 | NA | NA |
| o-Xylene | 120 | 27 | 10000 | 2400 | NA | NA |
| Naphthalene | 610 | 120 | 3200 | 600 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 700 | N/A | 290000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 700 | N/A | 500000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 580 | N/A | 83000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 09/07/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | |
|-----------------------------|---|---|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other | 0 0 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 0.72% 1, 4-Difluorobenzene: %D from CCV: 3.9% Chlorobenzene-d5: %D from CCV: 4.3% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1108544A-03A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 8/30/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 09/07/2011

8/23/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108300A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/15/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108300A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

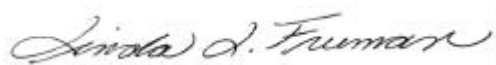
DATE RECEIVED: 08/15/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/23/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------------------|-------------------|-------------------------------|---------------------------|
| 01A | HH-OUIC-MW10SG | Massachusetts APH | 4.0 "Hg | 15 psi |
| 02A | HH-OUIC-MW22R | Massachusetts APH | 5.0 "Hg | 15 psi |
| 03A | HH-OUIC-OTNS1 | Massachusetts APH | 3.2 "Hg | 15 psi |
| 03AA | HH-OUIC-OTNS1 Lab Duplicate | Massachusetts APH | 3.2 "Hg | 15 psi |
| 04A | Lab Blank | Massachusetts APH | NA | NA |
| 05A | CCV | Massachusetts APH | NA | NA |
| 06A | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 08/23/11

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1108300A**

Three 1 Liter Summa Canister (MA APH Certified) samples were received on August 15, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The reported LCS for each daily batch has been derived from more than one analytical file.

Dilution was performed on samples HH-OUIC-MW10SG, HH-OUIC-MW22R, HH-OUIC-OTNS1 and HH-OUIC-OTNS1 Lab Duplicate due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2081927a | Date of Collection: 8/11/11 2:03:00 PM |
| Dil. Factor: | 1550 | Date of Analysis: 8/19/11 11:20 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 1400 | Not Detected | 3100 | Not Detected |
| Methyl tert-butyl ether | 850 | Not Detected | 3100 | Not Detected |
| Benzene | 980 | 3700 | 3100 | 12000 |
| Toluene | 820 | 960 | 3100 | 3600 |
| Ethyl Benzene | 710 | Not Detected | 3100 | Not Detected |
| o-Xylene | 710 | Not Detected | 3100 | Not Detected |
| m,p-Xylene | 710 | Not Detected | 3100 | Not Detected |
| Naphthalene | 3100 | Not Detected | 16000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 93 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 109 | 70-130 |

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2081917a | Date of Collection: 8/11/11 1:38:00 PM |
| Dil. Factor: | 968 | Date of Analysis: 8/19/11 03:18 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 870 | Not Detected | 1900 | Not Detected |
| Methyl tert-butyl ether | 530 | Not Detected | 1900 | Not Detected |
| Benzene | 610 | 2400 | 1900 | 7700 |
| Toluene | 510 | Not Detected | 1900 | Not Detected |
| Ethyl Benzene | 440 | Not Detected | 1900 | Not Detected |
| o-Xylene | 440 | Not Detected | 1900 | Not Detected |
| m,p-Xylene | 440 | Not Detected | 1900 | Not Detected |
| Naphthalene | 1900 | Not Detected | 10000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 92 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2081916a | Date of Collection: 8/11/11 2:38:00 PM |
| Dil. Factor: | 151 | Date of Analysis: 8/19/11 02:38 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 140 | Not Detected | 300 | Not Detected |
| Methyl tert-butyl ether | 83 | Not Detected | 300 | Not Detected |
| Benzene | 95 | Not Detected | 300 | Not Detected |
| Toluene | 80 | Not Detected | 300 | Not Detected |
| Ethyl Benzene | 69 | Not Detected | 300 | Not Detected |
| o-Xylene | 69 | Not Detected | 300 | Not Detected |
| m,p-Xylene | 69 | Not Detected | 300 | Not Detected |
| Naphthalene | 300 | Not Detected | 1600 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

Client Sample ID: HH-OUIC-OTNS1 Lab Duplicate

Lab ID#: 1108300A-03AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2081921a | Date of Collection: 8/11/11 2:38:00 PM |
| Dil. Factor: | 151 | Date of Analysis: 8/19/11 06:02 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 140 | Not Detected | 300 | Not Detected |
| Methyl tert-butyl ether | 83 | Not Detected | 300 | Not Detected |
| Benzene | 95 | Not Detected | 300 | Not Detected |
| Toluene | 80 | Not Detected | 300 | Not Detected |
| Ethyl Benzene | 69 | Not Detected | 300 | Not Detected |
| o-Xylene | 69 | Not Detected | 300 | Not Detected |
| m,p-Xylene | 69 | Not Detected | 300 | Not Detected |
| Naphthalene | 300 | Not Detected | 1600 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 95 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1108300A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|------------------------------------|
| File Name: | 2081909e | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/19/11 10:25 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1108300A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2081906 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/19/11 08:45 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 78 |
| Methyl tert-butyl ether | 71 |
| Benzene | 81 |
| Toluene | 83 |
| Ethyl Benzene | 86 |
| o-Xylene | 96 |
| m,p-Xylene | 93 |
| Naphthalene | 72 |
| C5-C8 Aliphatic Hydrocarbons | 86 |
| C9-C12 Aliphatic Hydrocarbons | 90 |
| C9-C10 Aromatic Hydrocarbons | 117 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 111 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1108300A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|---|
| File Name: | 2081907 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 8/19/11 09:13 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 85 |
| Methyl tert-butyl ether | 80 |
| Benzene | 90 |
| Toluene | 89 |
| Ethyl Benzene | 97 |
| o-Xylene | 108 |
| m,p-Xylene | 106 |
| Naphthalene | 146 |
| C5-C8 Aliphatic Hydrocarbons | 86 |
| C9-C12 Aliphatic Hydrocarbons | 86 |
| C9-C10 Aromatic Hydrocarbons | 108 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 114 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | |
|-----------------------------|--|---|---|---|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 13% 1, 4-Difluorobenzene: %D from CCV: 19% Chlorobenzene-d5: %D from CCV: 23% MS Tuning Standard: Bromofluorobenzene | Client ID | | HH-OUIC-MW10SG | | NA | |
| | Lab ID | | 1108300A-01A | | NA | |
| | Date Collected | | 8/11/2011 | | NA | |
| | Date Received | | 8/15/2011 | | NA | |
| | Date Analyzed | | 8/19/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 3 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.0 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1550 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 3100 | 1400 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 3100 | 850 | ND | ND | NA | NA |
| Benzene | 3100 | 970 | 12000 | 3700 | NA | NA |
| Toluene | 3100 | 820 | 3600 | 960 | NA | NA |
| Ethylbenzene | 3100 | 710 | ND | ND | NA | NA |
| m- & p- Xylenes | 3100 | 710 | ND | ND | NA | NA |
| o-Xylene | 3100 | 710 | ND | ND | NA | NA |
| Naphthalene | 16000 | 3100 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 19000 | N/A | 62000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 19000 | N/A | 1800000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 16000 | N/A | 35000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 10% 1, 4-Difluorobenzene: %D from CCV: 14% Chlorobenzene-d5: %D from CCV: 15% MS Tuning Standard: Bromofluorobenzene | Client ID | | HH-OUIC-MW22R | | NA | |
| | Lab ID | | 1108300A-02A | | NA | |
| | Date Collected | | 8/11/2011 | | NA | |
| | Date Received | | 8/15/2011 | | NA | |
| | Date Analyzed | | 8/19/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 28 in. Hg | | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 3 in. Hg | | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.0 in. Hg | | NA | in. Hg |
| Dilution Factor | | 968 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 1900 | 880 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 1900 | 530 | ND | ND | NA | NA |
| Benzene | 1900 | 600 | 7700 | 2400 | NA | NA |
| Toluene | 1900 | 510 | ND | ND | NA | NA |
| Ethylbenzene | 1900 | 450 | ND | ND | NA | NA |
| m- & p- Xylenes | 1900 | 450 | ND | ND | NA | NA |
| o-Xylene | 1900 | 450 | ND | ND | NA | NA |
| Naphthalene | 10000 | 1900 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12000 | N/A | 22000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12000 | N/A | 1200000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 9700 | N/A | 17000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 2.9% 1, 4-Difluorobenzene: %D from CCV: 5.8% Chlorobenzene-d5: %D from CCV: 6.2% MS Tuning Standard: Bromofluorobenzene | Client ID | HH-OUIC-OTNS1 | NA | | | |
| | Lab ID | 1108300A-03A | NA | | | |
| | Date Collected | 8/11/2011 | NA | | | |
| | Date Received | 8/15/2011 | NA | | | |
| | Date Analyzed | 8/19/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 3 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 3.2 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 151 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 300 | 140 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 300 | 83 | ND | ND | NA | NA |
| Benzene | 300 | 94 | ND | ND | NA | NA |
| Toluene | 300 | 80 | ND | ND | NA | NA |
| Ethylbenzene | 300 | 70 | ND | ND | NA | NA |
| m- & p- Xylenes | 300 | 70 | ND | ND | NA | NA |
| o-Xylene | 300 | 70 | ND | ND | NA | NA |
| Naphthalene | 1600 | 300 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 1800 | N/A | 740000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 1800 | N/A | 160000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 1500 | N/A | 2700 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

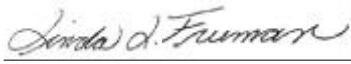
| | | | | | | |
|--|----------------------------|---------|-----------------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 5.4% 1, 4-Difluorobenzene: %D from CCV: 7.5% Chlorobenzene-d5: %D from CCV: 8.0% MS Tuning Standard: Bromofluorobenzene | Client ID | | HH-OUIC-OTNS1 Lab Dup | | NA | |
| | Lab ID | | 1108300A-03AA | | NA | |
| | Date Collected | | 8/11/2011 | | NA | |
| | Date Received | | 8/15/2011 | | NA | |
| | Date Analyzed | | 8/19/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 3 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 3.2 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 151 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 300 | 140 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 300 | 83 | ND | ND | NA | NA |
| Benzene | 300 | 94 | ND | ND | NA | NA |
| Toluene | 300 | 80 | ND | ND | NA | NA |
| Ethylbenzene | 300 | 70 | ND | ND | NA | NA |
| m- & p- Xylenes | 300 | 70 | ND | ND | NA | NA |
| o-Xylene | 300 | 70 | ND | ND | NA | NA |
| Naphthalene | 1600 | 300 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 1800 | N/A | 640000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 1800 | N/A | 120000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 1500 | N/A | 2500 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

| | | |
|--|---|---|
| Were all QA/QC procedures REQUIRED by the APH Method followed? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were all performance/acceptance standards for required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were any significant modifications made to the APH method, as specified in Sect 11.1.2? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes - Details Attached |
| <p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p> | | |
| SIGNATURE:  | | POSITION: Laboratory Director |
| PRINTED NAME: Linda L. Freeman | | DATE: 08/23/2011 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | |
|-----------------------------|---|---|-------------------------------------|---------------------------------|----------------------------------|--------------------------------|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input type="checkbox"/> Other |
| Sample Container(s) | <input type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | | | | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 4.0% 1, 4-Difluorobenzene: %D from CCV: 8.1% Chlorobenzene-d5: %D from CCV: 6.9% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1108300A-04A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 8/19/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 08/23/2011

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

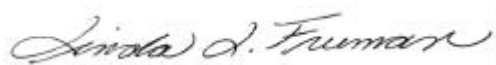
DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/20/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-------------------------------|-------------------|-------------------------------|---------------------------|
| 01A | HAFB-SP43-VMP10 | Massachusetts APH | 5.2 "Hg | 15psi |
| 01AA | HAFB-SP43-VMP10 Lab Duplicate | Massachusetts APH | 5.2 "Hg | 15psi |
| 02A | HAFB-SP43-VMP11 | Massachusetts APH | 5.0 "Hg | 15psi |
| 03A | HAFB-SP43-VMP12 | Massachusetts APH | 4.5 "Hg | 15psi |
| 04A | HAFB-SP43-VMP16 | Massachusetts APH | 6.0 "Hg | 15psi |
| 05A | HAFB-SP43-VMP17 | Massachusetts APH | 5.5 "Hg | 15psi |
| 06A | FV-GP01-HDOH#2 | Massachusetts APH | 4.0 "Hg | 15psi |
| 07A | FV-GP08-HDOH#2 | Massachusetts APH | 5.0 "Hg | 15psi |
| 08A | FV-GP16R-HDOH#2 | Massachusetts APH | 5.0 "Hg | 15psi |
| 09A | JP8#1 | Massachusetts APH | 4.0 "Hg | 15psi |
| 10A | Lab Blank | Massachusetts APH | NA | NA |
| 11A | CCV | Massachusetts APH | NA | NA |
| 12A | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 10/21/11

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1110160A**

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The reported LCS for each daily batch has been derived from more than one analytical file.

The Pre and Post Sample Vacuum (field) noted for samples FV-GP08-HDOH#2, FV-GP16R-HDOH#2 and JP8#1 were not documented on the Chain of Custody, therefore this data was reported as NA on the final report.

Dilution was performed on samples HAFB-SP43-VMP10, HAFB-SP43-VMP10 Lab Duplicate, HAFB-SP43-VMP11, HAFB-SP43-VMP16, HAFB-SP43-VMP17, FV-GP08-HDOH#2, FV-GP16R-HDOH#2 and JP8#1 due to the presence of high level APH Hydrocarbons.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2101216a | Date of Collection: 10/5/11 2:05:00 PM |
| Dil. Factor: | 244 | Date of Analysis: 10/12/11 04:09 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 220 | Not Detected | 480 | Not Detected |
| Methyl tert-butyl ether | 130 | Not Detected | 480 | Not Detected |
| Benzene | 150 | 500 | 490 | 1600 |
| Toluene | 130 | Not Detected | 490 | Not Detected |
| Ethyl Benzene | 110 | 1700 | 490 | 7200 |
| o-Xylene | 110 | Not Detected | 490 | Not Detected |
| m,p-Xylene | 110 | Not Detected | 490 | Not Detected |
| Naphthalene | 490 | 760 | 2600 | 4000 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 106 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

Client Sample ID: HAFB-SP43-VMP10 Lab Duplicate

Lab ID#: 1110160A-01AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2101217a | Date of Collection: 10/5/11 2:05:00 PM |
| Dil. Factor: | 244 | Date of Analysis: 10/12/11 04:52 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 220 | Not Detected | 480 | Not Detected |
| Methyl tert-butyl ether | 130 | Not Detected | 480 | Not Detected |
| Benzene | 150 | 500 | 490 | 1600 |
| Toluene | 130 | Not Detected | 490 | Not Detected |
| Ethyl Benzene | 110 | 1600 | 490 | 6700 |
| o-Xylene | 110 | Not Detected | 490 | Not Detected |
| m,p-Xylene | 110 | Not Detected | 490 | Not Detected |
| Naphthalene | 490 | 780 | 2600 | 4100 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 106 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2101218a | Date of Collection: 10/5/11 1:15:00 PM |
| Dil. Factor: | 242 | Date of Analysis: 10/12/11 05:31 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 220 | Not Detected | 480 | Not Detected |
| Methyl tert-butyl ether | 130 | Not Detected | 480 | Not Detected |
| Benzene | 150 | Not Detected | 490 | Not Detected |
| Toluene | 130 | Not Detected | 480 | Not Detected |
| Ethyl Benzene | 110 | 9500 | 480 | 41000 |
| o-Xylene | 110 | 120 | 480 | 510 |
| m,p-Xylene | 110 | Not Detected | 480 | Not Detected |
| Naphthalene | 480 | 490 | 2500 | 2600 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2101222a | Date of Collection: 10/5/11 12:44:00 PM |
| Dil. Factor: | 2.38 | Date of Analysis: 10/12/11 08:39 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2.1 | Not Detected | 4.7 | Not Detected |
| Methyl tert-butyl ether | 1.3 | Not Detected | 4.7 | Not Detected |
| Benzene | 1.5 | Not Detected | 4.8 | Not Detected |
| Toluene | 1.3 | Not Detected | 4.8 | Not Detected |
| Ethyl Benzene | 1.1 | Not Detected | 4.8 | Not Detected |
| o-Xylene | 1.1 | Not Detected | 4.8 | Not Detected |
| m,p-Xylene | 1.1 | Not Detected | 4.8 | Not Detected |
| Naphthalene | 4.8 | Not Detected | 25 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 90 | 70-130 |

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2101219a | Date of Collection: 10/5/11 1:42:00 PM |
| Dil. Factor: | 252 | Date of Analysis: 10/12/11 06:13 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 230 | Not Detected | 500 | Not Detected |
| Methyl tert-butyl ether | 140 | Not Detected | 500 | Not Detected |
| Benzene | 160 | 480 | 510 | 1500 |
| Toluene | 130 | Not Detected | 500 | Not Detected |
| Ethyl Benzene | 120 | 370 | 500 | 1600 |
| o-Xylene | 120 | Not Detected | 500 | Not Detected |
| m,p-Xylene | 120 | Not Detected | 500 | Not Detected |
| Naphthalene | 500 | Not Detected | 2600 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 116 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2101214a | Date of Collection: 10/5/11 11:52:00 AM |
| Dil. Factor: | 247 | Date of Analysis: 10/12/11 01:43 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 220 | Not Detected | 490 | Not Detected |
| Methyl tert-butyl ether | 140 | Not Detected | 490 | Not Detected |
| Benzene | 160 | Not Detected | 500 | Not Detected |
| Toluene | 130 | Not Detected | 490 | Not Detected |
| Ethyl Benzene | 110 | 1400 | 490 | 6000 |
| o-Xylene | 110 | Not Detected | 490 | Not Detected |
| m,p-Xylene | 110 | Not Detected | 490 | Not Detected |
| Naphthalene | 490 | Not Detected | 2600 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 114 | 70-130 |
| Toluene-d8 | 113 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2101223a | Date of Collection: 10/6/11 1:45:00 PM |
| Dil. Factor: | 2.33 | Date of Analysis: 10/12/11 09:15 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 2.1 | Not Detected | 4.6 | Not Detected |
| Methyl tert-butyl ether | 1.3 | Not Detected | 4.6 | Not Detected |
| Benzene | 1.5 | Not Detected | 4.7 | Not Detected |
| Toluene | 1.2 | Not Detected | 4.6 | Not Detected |
| Ethyl Benzene | 1.1 | Not Detected | 4.6 | Not Detected |
| o-Xylene | 1.1 | Not Detected | 4.6 | Not Detected |
| m,p-Xylene | 1.1 | Not Detected | 4.6 | Not Detected |
| Naphthalene | 4.7 | Not Detected | 24 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2101215a | Date of Collection: 10/6/11 1:06:00 PM |
| Dil. Factor: | 24.2 | Date of Analysis: 10/12/11 03:24 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 22 | Not Detected | 48 | Not Detected |
| Methyl tert-butyl ether | 13 | Not Detected | 48 | Not Detected |
| Benzene | 15 | 15 | 49 | 49 |
| Toluene | 13 | 13 | 48 | 51 |
| Ethyl Benzene | 11 | Not Detected | 48 | Not Detected |
| o-Xylene | 11 | Not Detected | 48 | Not Detected |
| m,p-Xylene | 11 | Not Detected | 48 | Not Detected |
| Naphthalene | 48 | Not Detected | 250 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 114 | 70-130 |
| Toluene-d8 | 115 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2101224a | Date of Collection: 10/6/11 12:19:00 PM |
| Dil. Factor: | 247 | Date of Analysis: 10/12/11 09:52 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 220 | Not Detected | 490 | Not Detected |
| Methyl tert-butyl ether | 140 | Not Detected | 490 | Not Detected |
| Benzene | 160 | Not Detected | 500 | Not Detected |
| Toluene | 130 | Not Detected | 490 | Not Detected |
| Ethyl Benzene | 110 | Not Detected | 490 | Not Detected |
| o-Xylene | 110 | Not Detected | 490 | Not Detected |
| m,p-Xylene | 110 | Not Detected | 490 | Not Detected |
| Naphthalene | 490 | Not Detected | 2600 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| Toluene-d8 | 106 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

Client Sample ID: JP8#1

Lab ID#: 1110160A-09A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|--|
| File Name: | 2101220a | Date of Collection: 10/6/11 3:15:00 PM |
| Dil. Factor: | 233 | Date of Analysis: 10/12/11 06:55 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 210 | Not Detected | 460 | Not Detected |
| Methyl tert-butyl ether | 130 | Not Detected | 460 | Not Detected |
| Benzene | 150 | 6200 | 470 | 20000 |
| Toluene | 120 | 16000 | 460 | 62000 |
| Ethyl Benzene | 110 | 5000 | 460 | 22000 |
| o-Xylene | 110 | 8300 | 460 | 36000 |
| m,p-Xylene | 110 | 18000 | 460 | 79000 |
| Naphthalene | 470 | 1200 | 2400 | 6100 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110160A-10A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|-------------------------------------|
| File Name: | 2101213d | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/12/11 01:01 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 116 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 84 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110160A-11A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2101206 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/12/11 07:49 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 107 |
| Methyl tert-butyl ether | 108 |
| Benzene | 89 |
| Toluene | 86 |
| Ethyl Benzene | 92 |
| o-Xylene | 97 |
| m,p-Xylene | 94 |
| Naphthalene | 69 |
| C5-C8 Aliphatic Hydrocarbons | 99 |
| C9-C12 Aliphatic Hydrocarbons | 82 |
| C9-C10 Aromatic Hydrocarbons | 93 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 113 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110160A-12A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2101207 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/12/11 08:37 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 110 |
| Methyl tert-butyl ether | 114 |
| Benzene | 94 |
| Toluene | 88 |
| Ethyl Benzene | 92 |
| o-Xylene | 99 |
| m,p-Xylene | 95 |
| Naphthalene | 73 |
| C5-C8 Aliphatic Hydrocarbons | 116 |
| C9-C12 Aliphatic Hydrocarbons | 100 |
| C9-C10 Aromatic Hydrocarbons | 112 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 105 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|-----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 11% 1, 4-Difluorobenzene: %D from CCV: 14% Chlorobenzene-d5: %D from CCV: 20% MS Tuning Standard: Bromofluorobenzene | Client ID | | HAFB-SP43-VMP10 | | NA | |
| | Lab ID | | 1110160A-01A | | NA | |
| | Date Collected | | 10/5/2011 | | NA | |
| | Date Received | | 10/8/2011 | | NA | |
| | Date Analyzed | | 10/12/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.2 | in. Hg | NA | in. Hg |
| Dilution Factor | | 244 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 490 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 490 | 130 | ND | ND | NA | NA |
| Benzene | 490 | 150 | 1600 | 500 | NA | NA |
| Toluene | 490 | 130 | ND | ND | NA | NA |
| Ethylbenzene | 490 | 110 | 7200 | 1700 | NA | NA |
| m- & p- Xylenes | 490 | 110 | ND | ND | NA | NA |
| o-Xylene | 490 | 110 | ND | ND | NA | NA |
| Naphthalene | 2600 | 490 | 4000 | 760 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 2900 | N/A | 13000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 2900 | N/A | 6400000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2400 | N/A | 120000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/18/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 16% 1, 4-Difluorobenzene: %D from CCV: 19% Chlorobenzene-d5: %D from CCV: 24% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-SP43-VMP10 Lab D | NA | | | |
| | Lab ID | 1110160A-01AA | NA | | | |
| | Date Collected | 10/5/2011 | NA | | | |
| | Date Received | 10/8/2011 | NA | | | |
| | Date Analyzed | 10/12/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 4 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 5.2 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 244 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 490 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 490 | 130 | ND | ND | NA | NA |
| Benzene | 490 | 150 | 1600 | 500 | NA | NA |
| Toluene | 490 | 130 | ND | ND | NA | NA |
| Ethylbenzene | 490 | 110 | 6700 | 1600 | NA | NA |
| m- & p- Xylenes | 490 | 110 | ND | ND | NA | NA |
| o-Xylene | 490 | 110 | ND | ND | NA | NA |
| Naphthalene | 2600 | 490 | 4100 | 780 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 2900 | N/A | 12000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 2900 | N/A | 5900000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2400 | N/A | 110000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/18/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 21% 1, 4-Difluorobenzene: %D from CCV: 25% Chlorobenzene-d5: %D from CCV: 28% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-SP43-VMP11 | | NA | | |
| | Lab ID | 1110160A-02A | | NA | | |
| | Date Collected | 10/5/2011 | | NA | | |
| | Date Received | 10/8/2011 | | NA | | |
| | Date Analyzed | 10/12/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 5.0 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 242 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 480 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 480 | 130 | ND | ND | NA | NA |
| Benzene | 480 | 150 | ND | ND | NA | NA |
| Toluene | 480 | 130 | ND | ND | NA | NA |
| Ethylbenzene | 480 | 110 | 41000 | 9500 | NA | NA |
| m- & p- Xylenes | 480 | 110 | ND | ND | NA | NA |
| o-Xylene | 480 | 110 | 510 | 120 | NA | NA |
| Naphthalene | 2500 | 480 | 2600 | 490 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 2900 | N/A | 14000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 2900 | N/A | 5900000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2400 | N/A | 82000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

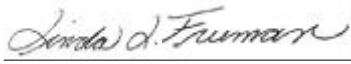
²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

| | | |
|---|---|---|
| Were all QA/QC procedures REQUIRED by the APH Method followed? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were all performance/acceptance standards for required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were any significant modifications made to the APH method, as specified in Sect 11.1.2? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes - Details Attached |

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:  POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman DATE: 10/18/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 11% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 23% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-SP43-VMP12 | NA | | | |
| | Lab ID | 1110160A-03A | NA | | | |
| | Date Collected | 10/5/2011 | NA | | | |
| | Date Received | 10/8/2011 | NA | | | |
| | Date Analyzed | 10/12/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 4 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 4.5 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 2.38 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.8 | 2.2 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.8 | 1.3 | ND | ND | NA | NA |
| Benzene | 4.8 | 1.5 | ND | ND | NA | NA |
| Toluene | 4.8 | 1.3 | ND | ND | NA | NA |
| Ethylbenzene | 4.8 | 1.1 | ND | ND | NA | NA |
| m- & p- Xylenes | 4.8 | 1.1 | ND | ND | NA | NA |
| o-Xylene | 4.8 | 1.1 | ND | ND | NA | NA |
| Naphthalene | 25 | 4.8 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 28 | N/A | 1500 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 28 | N/A | 630 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 24 | N/A | 28 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 22% 1, 4-Difluorobenzene: %D from CCV: 28% Chlorobenzene-d5: %D from CCV: 33% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-SP43-VMP16 | | NA | | |
| | Lab ID | 1110160A-04A | | NA | | |
| | Date Collected | 10/5/2011 | | NA | | |
| | Date Received | 10/8/2011 | | NA | | |
| | Date Analyzed | 10/12/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 6.0 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 252 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 500 | 230 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 500 | 140 | ND | ND | NA | NA |
| Benzene | 500 | 160 | 1500 | 480 | NA | NA |
| Toluene | 500 | 130 | ND | ND | NA | NA |
| Ethylbenzene | 500 | 120 | 1600 | 370 | NA | NA |
| m- & p- Xylenes | 500 | 120 | ND | ND | NA | NA |
| o-Xylene | 500 | 120 | ND | ND | NA | NA |
| Naphthalene | 2600 | 500 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 3000 | N/A | 32000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 3000 | N/A | 5700000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2500 | N/A | 130000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|---|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | | | | | | |

APH ANALYTICAL RESULTS

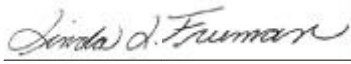
| | | | | | | |
|---|----------------------------|---------|-----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.7% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 2.2% MS Tuning Standard: Bromofluorobenzene | Client ID | | HAFB-SP43-VMP17 | | NA | |
| | Lab ID | | 1110160A-05A | | NA | |
| | Date Collected | | 10/5/2011 | | NA | |
| | Date Received | | 10/8/2011 | | NA | |
| | Date Analyzed | | 10/12/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 in. Hg | | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 in. Hg | | NA | in. Hg |
| | Lab Receipt Vacuum | | 5.5 in. Hg | | NA | in. Hg |
| Dilution Factor | | 247 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 490 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 490 | 140 | ND | ND | NA | NA |
| Benzene | 500 | 160 | ND | ND | NA | NA |
| Toluene | 490 | 130 | ND | ND | NA | NA |
| Ethylbenzene | 490 | 110 | 6000 | 1400 | NA | NA |
| m- & p- Xylenes | 490 | 110 | ND | ND | NA | NA |
| o-Xylene | 490 | 110 | ND | ND | NA | NA |
| Naphthalene | 2600 | 490 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 3000 | N/A | 4600000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 3000 | N/A | 1900000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2500 | N/A | 30000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

| | | |
|--|---|---|
| Were all QA/QC procedures REQUIRED by the APH Method followed? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were all performance/acceptance standards for required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No - Details Attached |
| Were any significant modifications made to the APH method, as specified in Sect 11.1.2? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes - Details Attached |
| <p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p> | | |
| SIGNATURE:  | POSITION: <u>Laboratory Director</u> | |
| PRINTED NAME: <u>Linda L. Freeman</u> | DATE: <u>10/21/2011</u> | |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|----------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 16% 1, 4-Difluorobenzene: %D from CCV: 21% Chlorobenzene-d5: %D from CCV: 24% MS Tuning Standard: Bromofluorobenzene | Client ID | FV-GP01-HDOH#2 | NA | | | |
| | Lab ID | 1110160A-06A | NA | | | |
| | Date Collected | 10/6/2011 | NA | | | |
| | Date Received | 10/8/2011 | NA | | | |
| | Date Analyzed | 10/12/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 4 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 4.0 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 2.33 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4.7 | 2.1 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4.7 | 1.3 | ND | ND | NA | NA |
| Benzene | 4.7 | 1.4 | ND | ND | NA | NA |
| Toluene | 4.7 | 1.2 | ND | ND | NA | NA |
| Ethylbenzene | 4.7 | 1.1 | ND | ND | NA | NA |
| m- & p- Xylenes | 4.7 | 1.1 | ND | ND | NA | NA |
| o-Xylene | 4.7 | 1.1 | ND | ND | NA | NA |
| Naphthalene | 24 | 4.7 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 28 | N/A | 8400 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 28 | N/A | 20000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 23 | N/A | 72 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 6.3% 1, 4-Difluorobenzene: %D from CCV: 6.1% Chlorobenzene-d5: %D from CCV: 7.0% MS Tuning Standard: Bromofluorobenzene | Client ID | | FV-GP08-HDOH#2 | | NA | |
| | Lab ID | | 1110160A-07A | | NA | |
| | Date Collected | | 10/6/2011 | | NA | |
| | Date Received | | 10/8/2011 | | NA | |
| | Date Analyzed | | 10/12/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA in. Hg | | NA in. Hg | |
| | Post-Sample Vacuum (field) | | NA in. Hg | | NA in. Hg | |
| | Lab Receipt Vacuum | | 5.0 in. Hg | | NA in. Hg | |
| | Dilution Factor | | 24.2 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 48 | 22 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 48 | 13 | ND | ND | NA | NA |
| Benzene | 48 | 15 | 49 | 15 | NA | NA |
| Toluene | 48 | 13 | 51 | 13 | NA | NA |
| Ethylbenzene | 48 | 11 | ND | ND | NA | NA |
| m- & p- Xylenes | 48 | 11 | ND | ND | NA | NA |
| o-Xylene | 48 | 11 | ND | ND | NA | NA |
| Naphthalene | 250 | 48 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 290 | N/A | 680000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 290 | N/A | 920000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 240 | N/A | 9700 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-----------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 16% 1, 4-Difluorobenzene: %D from CCV: 17% Chlorobenzene-d5: %D from CCV: 22% MS Tuning Standard: Bromofluorobenzene | Client ID | FV-GP16R-HDOH#2 | NA | | | |
| | Lab ID | 1110160A-08A | NA | | | |
| | Date Collected | 10/6/2011 | NA | | | |
| | Date Received | 10/8/2011 | NA | | | |
| | Date Analyzed | 10/12/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | NA in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | NA in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 5.0 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 247 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 490 | 220 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 490 | 140 | ND | ND | NA | NA |
| Benzene | 490 | 150 | ND | ND | NA | NA |
| Toluene | 490 | 130 | ND | ND | NA | NA |
| Ethylbenzene | 490 | 110 | ND | ND | NA | NA |
| m- & p- Xylenes | 490 | 110 | ND | ND | NA | NA |
| o-Xylene | 490 | 110 | ND | ND | NA | NA |
| Naphthalene | 2600 | 490 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 3000 | N/A | 1700000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 3000 | N/A | 5200000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2500 | N/A | 17000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 23% 1, 4-Difluorobenzene: %D from CCV: 29% Chlorobenzene-d5: %D from CCV: 29% MS Tuning Standard: Bromofluorobenzene | Client ID | | JP8#1 | | NA | |
| | Lab ID | | 1110160A-09A | | NA | |
| | Date Collected | | 10/6/2011 | | NA | |
| | Date Received | | 10/8/2011 | | NA | |
| | Date Analyzed | | 10/12/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA in. Hg | | NA in. Hg | |
| | Post-Sample Vacuum (field) | | NA in. Hg | | NA in. Hg | |
| | Lab Receipt Vacuum | | 4.0 in. Hg | | NA in. Hg | |
| Dilution Factor | | 233 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 470 | 210 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 470 | 130 | ND | ND | NA | NA |
| Benzene | 470 | 140 | 20000 | 6200 | NA | NA |
| Toluene | 470 | 120 | 62000 | 16000 | NA | NA |
| Ethylbenzene | 470 | 110 | 22000 | 5000 | NA | NA |
| m- & p- Xylenes | 470 | 110 | 79000 | 18000 | NA | NA |
| o-Xylene | 470 | 110 | 36000 | 8300 | NA | NA |
| Naphthalene | 2400 | 470 | 6100 | 1200 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 2800 | N/A | 4500000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 2800 | N/A | 1300000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 2300 | N/A | 210000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | |
|-----------------------------|---|---|---|---------------------------------|----------------------------------|--------------------------------|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | | | | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 10% 1, 4-Difluorobenzene: %D from CCV: 22% Chlorobenzene-d5: %D from CCV: 19% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1110160A-10A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 10/12/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 10/20/2011

11/17/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413A

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Massachusetts APH are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413A

Work Order Summary

| | | |
|---|---|--|
| CLIENT: PHONE: FAX: DATE RECEIVED: DATE COMPLETED: | Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 808-586-4328 808-586-7537 10/20/2011 11/09/2011 | BILL TO: Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 P.O. # 1077200 PROJECT # CONTACT: Kelly Buettner |
|---|---|--|

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------------------------|-------------------|-------------------------------|---------------------------|
| 01A | HAFB-VP26-B05(18) | Massachusetts APH | 4.0 "Hg | 5 psi |
| 02A | HAFB-VP26-B05(24) | Massachusetts APH | 3.5 "Hg | 5 psi |
| 03A | HAFB-VP26-B07(20) | Massachusetts APH | 2.5 "Hg | 5 psi |
| 04A | HAFB-VP26-B07(25) | Massachusetts APH | 4.5 "Hg | 5 psi |
| 05A | HAFB-ST03-B58(347) | Massachusetts APH | 4.4 "Hg | 5 psi |
| 05AA | HAFB-ST03-B58(347) Lab Duplicate | Massachusetts APH | 4.4 "Hg | 5 psi |
| 06A | HAFB-ST03-B58(422) | Massachusetts APH | 5.0 "Hg | 5 psi |
| 07A | HAFB-ST03-B58(492) | Massachusetts APH | 4.6 "Hg | 5 psi |
| 08A | HAFB-ST03-B59(388) | Massachusetts APH | 5.0 "Hg | 5 psi |
| 09A | HH-OU1C-MW10SG | Massachusetts APH | 6.0 "Hg | 5 psi |
| 10A | HH-OU1C-MW22R | Massachusetts APH | 5.4 "Hg | 5 psi |
| 11A | HH-OU1C-OTNS1 | Massachusetts APH | 4.2 "Hg | 5 psi |
| 12A | GASOLINE#2 | Massachusetts APH | 2.6 "Hg | 5 psi |
| 12AA | GASOLINE#2 Lab Duplicate | Massachusetts APH | 2.6 "Hg | 5 psi |
| 13A | DIESEL#3 | Massachusetts APH | 3.2 "Hg | 5 psi |
| 13AA | DIESEL#3 Lab Duplicate | Massachusetts APH | 3.2 "Hg | 5 psi |
| 14A | GASOLINE-EXHAUST | Massachusetts APH | 3.2 "Hg | 5 psi |

Continued on next page

WORK ORDER #: 1110413A

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

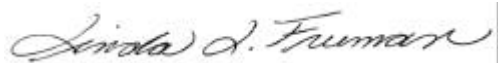
DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/09/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------|-------------------|-------------------------------|---------------------------|
| 15A | DIESEL-EXHAUST | Massachusetts APH | 3.0 "Hg | 5 psi |
| 16A | Lab Blank | Massachusetts APH | NA | NA |
| 16B | Lab Blank | Massachusetts APH | NA | NA |
| 16C | Lab Blank | Massachusetts APH | NA | NA |
| 17A | CCV | Massachusetts APH | NA | NA |
| 17B | CCV | Massachusetts APH | NA | NA |
| 17C | CCV | Massachusetts APH | NA | NA |
| 18A | LCS | Massachusetts APH | NA | NA |
| 18B | LCS | Massachusetts APH | NA | NA |
| 18C | LCS | Massachusetts APH | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 11/17/11

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Massachusetts DEP APH
Tetra Tech EM, Inc.
Workorder# 1110413A

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis via Massachusetts DEP APH method using GC/MS in the full scan mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis. This method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. The volatile aliphatic hydrocarbons are collectively quantified within the C5 to C8 range and within the C9 to C12 range. Additionally, the volatile aromatic hydrocarbons are collectively quantified within the C9 to C10 range.

Receiving Notes

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

The reported LCS for each daily batch has been derived from more than one analytical file.

A dilution was performed on samples HAFB-VP26-B05(18), HAFB-VP26-B05(24), HAFB-VP26-B07(20), HAFB-VP26-B07(25), HAFB-ST03-B58(347), HAFB-ST03-B58(347) Lab Duplicate, HAFB-ST03-B58(422), HAFB-ST03-B58(492), HAFB-ST03-B59(388), HH-OU1C-MW10SG, HH-OU1C-MW22R, GASOLINE#2, GASOLINE#2 Lab Duplicate, DIESEL#3, DIESEL#3 Lab Duplicate and GASOLINE-EXHAUST due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413A-01A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102425a | Date of Collection: 10/13/11 10:12:00 A |
| Dil. Factor: | 1030 | Date of Analysis: 10/25/11 06:18 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 930 | Not Detected | 2000 | Not Detected |
| Methyl tert-butyl ether | 570 | Not Detected | 2000 | Not Detected |
| Benzene | 650 | 12000 | 2100 | 40000 |
| Toluene | 540 | Not Detected | 2000 | Not Detected |
| Ethyl Benzene | 470 | 4100 | 2000 | 18000 |
| o-Xylene | 470 | Not Detected | 2000 | Not Detected |
| m,p-Xylene | 470 | Not Detected | 2000 | Not Detected |
| Naphthalene | 2100 | Not Detected | 11000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413A-02A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102422a | Date of Collection: 10/13/11 10:46:00 A |
| Dil. Factor: | 25300 | Date of Analysis: 10/24/11 10:46 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 23000 | Not Detected | 50000 | Not Detected |
| Methyl tert-butyl ether | 14000 | Not Detected | 50000 | Not Detected |
| Benzene | 16000 | 88000 | 51000 | 280000 |
| Toluene | 13000 | Not Detected | 50000 | Not Detected |
| Ethyl Benzene | 12000 | Not Detected | 50000 | Not Detected |
| o-Xylene | 12000 | Not Detected | 50000 | Not Detected |
| m,p-Xylene | 12000 | Not Detected | 50000 | Not Detected |
| Naphthalene | 51000 | Not Detected | 260000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413A-03A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102416a | Date of Collection: 10/13/11 11:23:00 A |
| Dil. Factor: | 1460 | Date of Analysis: 10/24/11 05:47 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 1300 | Not Detected | 2900 | Not Detected |
| Methyl tert-butyl ether | 800 | Not Detected | 2900 | Not Detected |
| Benzene | 920 | 26000 | 2900 | 84000 |
| Toluene | 770 | Not Detected | 2900 | Not Detected |
| Ethyl Benzene | 670 | 8600 | 2900 | 37000 |
| o-Xylene | 670 | Not Detected | 2900 | Not Detected |
| m,p-Xylene | 670 | Not Detected | 2900 | Not Detected |
| Naphthalene | 2900 | Not Detected | 15000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 88 | 70-130 |

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413A-04A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102417a | Date of Collection: 10/13/11 11:49:00 A |
| Dil. Factor: | 3160 | Date of Analysis: 10/24/11 06:32 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 2800 | Not Detected | 6300 | Not Detected |
| Methyl tert-butyl ether | 1700 | Not Detected | 6300 | Not Detected |
| Benzene | 2000 | 14000 | 6400 | 45000 |
| Toluene | 1700 | Not Detected | 6300 | Not Detected |
| Ethyl Benzene | 1400 | 4700 | 6300 | 20000 |
| o-Xylene | 1400 | Not Detected | 6300 | Not Detected |
| m,p-Xylene | 1400 | Not Detected | 6300 | Not Detected |
| Naphthalene | 6300 | Not Detected | 33000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 88 | 70-130 |

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413A-05A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102113a | Date of Collection: 10/14/11 9:35:00 AM |
| Dil. Factor: | 15.7 | Date of Analysis: 10/21/11 04:24 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 14 | Not Detected | 31 | Not Detected |
| Methyl tert-butyl ether | 8.6 | Not Detected | 31 | Not Detected |
| Benzene | 9.9 | Not Detected | 32 | Not Detected |
| Toluene | 8.3 | 31 | 31 | 120 |
| Ethyl Benzene | 7.2 | 120 | 31 | 500 |
| o-Xylene | 7.2 | 290 | 31 | 1300 |
| m,p-Xylene | 7.2 | 2500 | 31 | 11000 |
| Naphthalene | 31 | Not Detected | 160 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 111 | 70-130 |
| Toluene-d8 | 109 | 70-130 |
| 4-Bromofluorobenzene | 93 | 70-130 |

Client Sample ID: HAFB-ST03-B58(347) Lab Duplicate

Lab ID#: 1110413A-05AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102114a | Date of Collection: 10/14/11 9:35:00 AM |
| Dil. Factor: | 15.7 | Date of Analysis: 10/21/11 05:20 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 14 | Not Detected | 31 | Not Detected |
| Methyl tert-butyl ether | 8.6 | Not Detected | 31 | Not Detected |
| Benzene | 9.9 | Not Detected | 32 | Not Detected |
| Toluene | 8.3 | 30 | 31 | 110 |
| Ethyl Benzene | 7.2 | 120 | 31 | 510 |
| o-Xylene | 7.2 | 320 | 31 | 1400 |
| m,p-Xylene | 7.2 | 2800 | 31 | 12000 |
| Naphthalene | 31 | Not Detected | 160 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 112 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413A-06A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102115a | Date of Collection: 10/14/11 10:19:00 A |
| Dil. Factor: | 21.5 | Date of Analysis: 10/21/11 06:08 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 19 | Not Detected | 43 | Not Detected |
| Methyl tert-butyl ether | 12 | Not Detected | 43 | Not Detected |
| Benzene | 14 | Not Detected | 43 | Not Detected |
| Toluene | 11 | 35 | 43 | 130 |
| Ethyl Benzene | 9.9 | 140 | 43 | 620 |
| o-Xylene | 9.9 | 370 | 43 | 1600 |
| m,p-Xylene | 9.9 | 3300 | 43 | 14000 |
| Naphthalene | 43 | Not Detected | 220 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 110 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413A-07A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102116a | Date of Collection: 10/14/11 10:36:00 A |
| Dil. Factor: | 21.1 | Date of Analysis: 10/21/11 06:58 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 19 | Not Detected | 42 | Not Detected |
| Methyl tert-butyl ether | 12 | Not Detected | 42 | Not Detected |
| Benzene | 13 | Not Detected | 42 | Not Detected |
| Toluene | 11 | 41 | 42 | 160 |
| Ethyl Benzene | 9.7 | 170 | 42 | 720 |
| o-Xylene | 9.7 | 450 | 42 | 2000 |
| m,p-Xylene | 9.7 | 3900 | 42 | 17000 |
| Naphthalene | 42 | Not Detected | 220 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 110 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413A-08A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102120a | Date of Collection: 10/14/11 11:03:00 A |
| Dil. Factor: | 2.77 | Date of Analysis: 10/21/11 10:07 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2.5 | Not Detected | 5.5 | Not Detected |
| Methyl tert-butyl ether | 1.5 | 22 | 5.5 | 78 |
| Benzene | 1.7 | 56 | 5.6 | 180 |
| Toluene | 1.5 | 97 | 5.5 | 360 |
| Ethyl Benzene | 1.3 | 29 | 5.5 | 120 |
| o-Xylene | 1.3 | 96 | 5.5 | 420 |
| m,p-Xylene | 1.3 | 450 | 5.5 | 2000 |
| Naphthalene | 5.5 | 26 | 29 | 140 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 109 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413A-09A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102419a | Date of Collection: 10/18/11 11:43:00 A |
| Dil. Factor: | 3360 | Date of Analysis: 10/24/11 08:07 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 3000 | Not Detected | 6700 | Not Detected |
| Methyl tert-butyl ether | 1800 | Not Detected | 6700 | Not Detected |
| Benzene | 2100 | 4900 | 6800 | 16000 |
| Toluene | 1800 | Not Detected | 6700 | Not Detected |
| Ethyl Benzene | 1500 | Not Detected | 6700 | Not Detected |
| o-Xylene | 1500 | Not Detected | 6700 | Not Detected |
| m,p-Xylene | 1500 | Not Detected | 6700 | Not Detected |
| Naphthalene | 6700 | Not Detected | 35000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 96 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 88 | 70-130 |

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413A-10A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102510a | Date of Collection: 10/18/11 11:09:00 A |
| Dil. Factor: | 8150 | Date of Analysis: 10/25/11 12:28 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 7300 | Not Detected | 16000 | Not Detected |
| Methyl tert-butyl ether | 4500 | Not Detected | 16000 | Not Detected |
| Benzene | 5100 | Not Detected | 16000 | Not Detected |
| Toluene | 4300 | Not Detected | 16000 | Not Detected |
| Ethyl Benzene | 3700 | Not Detected | 16000 | Not Detected |
| o-Xylene | 3700 | Not Detected | 16000 | Not Detected |
| m,p-Xylene | 3700 | Not Detected | 16000 | Not Detected |
| Naphthalene | 16000 | Not Detected | 85000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 83 | 70-130 |

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413A-11A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102117a | Date of Collection: 10/18/11 10:31:00 A |
| Dil. Factor: | 1.56 | Date of Analysis: 10/21/11 07:41 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 1.4 | Not Detected | 3.1 | Not Detected |
| Methyl tert-butyl ether | 0.86 | Not Detected | 3.1 | Not Detected |
| Benzene | 0.98 | Not Detected | 3.1 | Not Detected |
| Toluene | 0.83 | Not Detected | 3.1 | Not Detected |
| Ethyl Benzene | 0.72 | Not Detected | 3.1 | Not Detected |
| o-Xylene | 0.72 | Not Detected | 3.1 | Not Detected |
| m,p-Xylene | 0.72 | Not Detected | 3.1 | Not Detected |
| Naphthalene | 3.1 | Not Detected | 16 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 110 | 70-130 |
| 4-Bromofluorobenzene | 90 | 70-130 |

Client Sample ID: GASOLINE#2

Lab ID#: 1110413A-12A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102512a | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 2450 | Date of Analysis: 10/25/11 01:45 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 2200 | Not Detected | 4900 | Not Detected |
| Methyl tert-butyl ether | 1300 | Not Detected | 4800 | Not Detected |
| Benzene | 1500 | 9200 | 4900 | 29000 |
| Toluene | 1300 | 34000 | 4900 | 130000 |
| Ethyl Benzene | 1100 | 2500 | 4900 | 11000 |
| o-Xylene | 1100 | 2600 | 4900 | 11000 |
| m,p-Xylene | 1100 | 8700 | 4900 | 38000 |
| Naphthalene | 4900 | Not Detected | 26000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 82 | 70-130 |

Client Sample ID: GASOLINE#2 Lab Duplicate

Lab ID#: 1110413A-12AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102511a | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 7350 | Date of Analysis: 10/25/11 01:06 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 6600 | Not Detected | 15000 | Not Detected |
| Methyl tert-butyl ether | 4000 | Not Detected | 14000 | Not Detected |
| Benzene | 4600 | 11000 | 15000 | 34000 |
| Toluene | 3900 | 40000 | 15000 | 150000 |
| Ethyl Benzene | 3400 | Not Detected | 15000 | Not Detected |
| o-Xylene | 3400 | Not Detected | 15000 | Not Detected |
| m,p-Xylene | 3400 | 9200 | 15000 | 40000 |
| Naphthalene | 15000 | Not Detected | 77000 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: DIESEL#3

Lab ID#: 1110413A-13A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102412a | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 10.0 | Date of Analysis: 10/24/11 02:04 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 9.0 | Not Detected | 20 | Not Detected |
| Methyl tert-butyl ether | 5.5 | Not Detected | 20 | Not Detected |
| Benzene | 6.3 | 330 | 20 | 1000 |
| Toluene | 5.3 | 1100 | 20 | 4000 |
| Ethyl Benzene | 4.6 | 200 | 20 | 850 |
| o-Xylene | 4.6 | 250 | 20 | 1100 |
| m,p-Xylene | 4.6 | 630 | 20 | 2700 |
| Naphthalene | 20 | 24 | 100 | 120 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 110 | 70-130 |
| Toluene-d8 | 107 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

Client Sample ID: DIESEL#3 Lab Duplicate

Lab ID#: 1110413A-13AA

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102413a | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 10.0 | Date of Analysis: 10/24/11 02:39 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 9.0 | Not Detected | 20 | Not Detected |
| Methyl tert-butyl ether | 5.5 | Not Detected | 20 | Not Detected |
| Benzene | 6.3 | 310 | 20 | 1000 |
| Toluene | 5.3 | 990 | 20 | 3700 |
| Ethyl Benzene | 4.6 | 190 | 20 | 810 |
| o-Xylene | 4.6 | 240 | 20 | 1000 |
| m,p-Xylene | 4.6 | 590 | 20 | 2600 |
| Naphthalene | 20 | 22 | 100 | 120 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 105 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413A-14A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102411a | Date of Collection: 10/18/11 8:50:00 AM |
| Dil. Factor: | 15.0 | Date of Analysis: 10/24/11 01:24 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 14 | 83 | 30 | 180 |
| Methyl tert-butyl ether | 8.2 | Not Detected | 30 | Not Detected |
| Benzene | 9.4 | 1500 | 30 | 4700 |
| Toluene | 8.0 | 1700 | 30 | 6400 |
| Ethyl Benzene | 6.9 | 240 | 30 | 1000 |
| o-Xylene | 6.9 | 320 | 30 | 1400 |
| m,p-Xylene | 6.9 | 880 | 30 | 3800 |
| Naphthalene | 30 | Not Detected | 160 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 104 | 70-130 |
| 4-Bromofluorobenzene | 89 | 70-130 |

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413A-15A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|---|
| File Name: | 2102118a | Date of Collection: 10/18/11 8:45:00 AM |
| Dil. Factor: | 1.49 | Date of Analysis: 10/21/11 08:27 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|----------------------|------------------|-----------------------|-------------------|
| 1,3-Butadiene | 1.3 | 2.6 | 3.0 | 5.8 |
| Methyl tert-butyl ether | 0.82 | Not Detected | 3.0 | Not Detected |
| Benzene | 0.94 | 4.5 | 3.0 | 14 |
| Toluene | 0.79 | 1.2 | 3.0 | 4.6 |
| Ethyl Benzene | 0.68 | Not Detected | 3.0 | Not Detected |
| o-Xylene | 0.68 | Not Detected | 3.0 | Not Detected |
| m,p-Xylene | 0.68 | Not Detected | 3.0 | Not Detected |
| Naphthalene | 3.0 | Not Detected | 16 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|------------------|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 87 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110413A-16A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|----------|-------------------------------------|
| File Name: | 2102108a | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/21/11 12:01 PM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 113 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110413A-16B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102409 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/24/11 11:33 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 81 | 70-130 |

Client Sample ID: Lab Blank

Lab ID#: 1110413A-16C

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102509 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 11:49 AM |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|-------------------------|-------------------|---------------|--------------------|----------------|
| 1,3-Butadiene | 0.90 | Not Detected | 2.0 | Not Detected |
| Methyl tert-butyl ether | 0.55 | Not Detected | 2.0 | Not Detected |
| Benzene | 0.63 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.53 | Not Detected | 2.0 | Not Detected |
| Ethyl Benzene | 0.46 | Not Detected | 2.0 | Not Detected |
| o-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| m,p-Xylene | 0.46 | Not Detected | 2.0 | Not Detected |
| Naphthalene | 2.0 | Not Detected | 10 | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 82 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110413A-17A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2102102 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/21/11 07:54 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 118 |
| Methyl tert-butyl ether | 106 |
| Benzene | 101 |
| Toluene | 101 |
| Ethyl Benzene | 106 |
| o-Xylene | 117 |
| m,p-Xylene | 112 |
| Naphthalene | 108 |
| C5-C8 Aliphatic Hydrocarbons | 101 |
| C9-C12 Aliphatic Hydrocarbons | 94 |
| C9-C10 Aromatic Hydrocarbons | 100 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 116 | 70-130 |
| Toluene-d8 | 107 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110413A-17B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2102405 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/24/11 08:59 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 120 |
| Methyl tert-butyl ether | 119 |
| Benzene | 101 |
| Toluene | 94 |
| Ethyl Benzene | 104 |
| o-Xylene | 111 |
| m,p-Xylene | 110 |
| Naphthalene | 116 |
| C5-C8 Aliphatic Hydrocarbons | 99 |
| C9-C12 Aliphatic Hydrocarbons | 81 |
| C9-C10 Aromatic Hydrocarbons | 101 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: CCV

Lab ID#: 1110413A-17C

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2102503 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 08:25 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 112 |
| Methyl tert-butyl ether | 118 |
| Benzene | 98 |
| Toluene | 91 |
| Ethyl Benzene | 101 |
| o-Xylene | 107 |
| m,p-Xylene | 106 |
| Naphthalene | 101 |
| C5-C8 Aliphatic Hydrocarbons | 92 |
| C9-C12 Aliphatic Hydrocarbons | 85 |
| C9-C10 Aromatic Hydrocarbons | 95 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110413A-18A

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2102103 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/21/11 08:40 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 115 |
| Methyl tert-butyl ether | 106 |
| Benzene | 97 |
| Toluene | 95 |
| Ethyl Benzene | 100 |
| o-Xylene | 112 |
| m,p-Xylene | 107 |
| Naphthalene | 87 |
| C5-C8 Aliphatic Hydrocarbons | 94 |
| C9-C12 Aliphatic Hydrocarbons | 89 |
| C9-C10 Aromatic Hydrocarbons | 92 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 111 | 70-130 |
| Toluene-d8 | 108 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110413A-18B

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|--------------|---------|-------------------------------------|
| File Name: | 2102406 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/24/11 09:37 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 111 |
| Methyl tert-butyl ether | 117 |
| Benzene | 96 |
| Toluene | 88 |
| Ethyl Benzene | 96 |
| o-Xylene | 106 |
| m,p-Xylene | 104 |
| Naphthalene | 93 |
| C5-C8 Aliphatic Hydrocarbons | 73 |
| C9-C12 Aliphatic Hydrocarbons | 89 |
| C9-C10 Aromatic Hydrocarbons | 90 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 103 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

Client Sample ID: LCS

Lab ID#: 1110413A-18C

AIR PHASE PETROLEUM HYDROCARBONS BY GC/MS

| | | |
|---------------------|----------------|--|
| File Name: | 2102504 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/25/11 08:58 AM |

| Compound | %Recovery |
|-------------------------------|-----------|
| 1,3-Butadiene | 102 |
| Methyl tert-butyl ether | 114 |
| Benzene | 93 |
| Toluene | 85 |
| Ethyl Benzene | 93 |
| o-Xylene | 98 |
| m,p-Xylene | 98 |
| Naphthalene | 94 |
| C5-C8 Aliphatic Hydrocarbons | 85 |
| C9-C12 Aliphatic Hydrocarbons | 77 |
| C9-C10 Aromatic Hydrocarbons | 84 |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|-----------------------|-----------|---------------|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|-------------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 2.8% 1, 4-Difluorobenzene: %D from CCV: 9.6% Chlorobenzene-d5: %D from CCV: 14% MS Tuning Standard: Bromofluorobenzene | Client ID | | HAFB-VP26-B05(18) | | NA | |
| | Lab ID | | 1110413A-01A | | NA | |
| | Date Collected | | 10/13/2011 | | NA | |
| | Date Received | | 10/20/2011 | | NA | |
| | Date Analyzed | | 10/25/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 3 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.0 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1030 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2000 | 930 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2000 | 570 | ND | ND | NA | NA |
| Benzene | 2100 | 650 | 40000 | 12000 | NA | NA |
| Toluene | 2000 | 540 | ND | ND | NA | NA |
| Ethylbenzene | 2000 | 470 | 18000 | 4100 | NA | NA |
| m- & p- Xylenes | 2000 | 470 | ND | ND | NA | NA |
| o-Xylene | 2000 | 470 | ND | ND | NA | NA |
| Naphthalene | 11000 | 2100 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12000 | N/A | 48000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12000 | N/A | 1400000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10000 | N/A | 12000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|-------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 3.0% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 7.9% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-VP26-B05(24) | | NA | | |
| | Lab ID | 1110413A-02A | | NA | | |
| | Date Collected | 10/13/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | 10/24/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.5 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 25300 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 50000 | 23000 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 50000 | 14000 | ND | ND | NA | NA |
| Benzene | 51000 | 16000 | 280000 | 88000 | NA | NA |
| Toluene | 50000 | 13000 | ND | ND | NA | NA |
| Ethylbenzene | 50000 | 12000 | ND | ND | NA | NA |
| m- & p- Xylenes | 50000 | 12000 | ND | ND | NA | NA |
| o-Xylene | 50000 | 12000 | ND | ND | NA | NA |
| Naphthalene | 260000 | 51000 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 300000 | N/A | 94000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 300000 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 250000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|-------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 3.9% 1, 4-Difluorobenzene: %D from CCV: 16% Chlorobenzene-d5: %D from CCV: 16% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-VP26-B07(20) | | NA | | |
| | Lab ID | 1110413A-03A | | NA | | |
| | Date Collected | 10/13/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | 10/24/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 2.5 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 1460 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2900 | 1300 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2900 | 800 | ND | ND | NA | NA |
| Benzene | 2900 | 920 | 84000 | 26000 | NA | NA |
| Toluene | 2900 | 770 | ND | ND | NA | NA |
| Ethylbenzene | 2900 | 670 | 37000 | 8600 | NA | NA |
| m- & p- Xylenes | 2900 | 670 | ND | ND | NA | NA |
| o-Xylene | 2900 | 670 | ND | ND | NA | NA |
| Naphthalene | 15000 | 2900 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 18000 | N/A | 38000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 18000 | N/A | 260000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 15000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|-------------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 8.9% 1, 4-Difluorobenzene: %D from CCV: 20% Chlorobenzene-d5: %D from CCV: 20% MS Tuning Standard: Bromofluorobenzene | Client ID | | HAFB-VP26-B07(25) | | NA | |
| | Lab ID | | 1110413A-04A | | NA | |
| | Date Collected | | 10/13/2011 | | NA | |
| | Date Received | | 10/20/2011 | | NA | |
| | Date Analyzed | | 10/24/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 in. Hg | | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 4 in. Hg | | NA | in. Hg |
| | Lab Receipt Vacuum | | 4.5 in. Hg | | NA | in. Hg |
| | Dilution Factor | | 3160 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 6300 | 2800 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 6300 | 1700 | ND | ND | NA | NA |
| Benzene | 6400 | 2000 | 45000 | 14000 | NA | NA |
| Toluene | 6300 | 1700 | ND | ND | NA | NA |
| Ethylbenzene | 6300 | 1400 | 20000 | 4700 | NA | NA |
| m- & p- Xylenes | 6300 | 1400 | ND | ND | NA | NA |
| o-Xylene | 6300 | 1400 | ND | ND | NA | NA |
| Naphthalene | 33000 | 6300 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 38000 | N/A | 100000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 38000 | N/A | 380000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 32000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|--------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 7.8% 1, 4-Difluorobenzene: %D from CCV: 11% Chlorobenzene-d5: %D from CCV: 20% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58(347) | | NA | | |
| | Lab ID | 1110413A-05A | | NA | | |
| | Date Collected | 10/14/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | 10/21/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 4.4 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 15.7 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 31 | 14 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 31 | 8.6 | ND | ND | NA | NA |
| Benzene | 32 | 9.9 | ND | ND | NA | NA |
| Toluene | 31 | 8.3 | 120 | 31 | NA | NA |
| Ethylbenzene | 31 | 7.2 | 500 | 120 | NA | NA |
| m- & p- Xylenes | 31 | 7.2 | 11000 | 2500 | NA | NA |
| o-Xylene | 31 | 7.2 | 1300 | 290 | NA | NA |
| Naphthalene | 160 | 31 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 190 | N/A | 310000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 190 | N/A | 220000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 160 | N/A | 32000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|------------------------|-----------------------|---------|-----------------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 12% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 30% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58(347) Lab | | NA | | |
| | Lab ID | 1110413A-05AA | | NA | | |
| | Date Collected | 10/14/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 4 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 4.4 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 15.7 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 31 | 14 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 31 | 8.6 | ND | ND | NA | NA |
| Benzene | 32 | 9.9 | ND | ND | NA | NA |
| Toluene | 31 | 8.3 | 110 | 30 | NA | NA |
| Ethylbenzene | 31 | 7.2 | 510 | 120 | NA | NA |
| m- & p- Xylenes | 31 | 7.2 | 12000 | 2800 | NA | NA |
| o-Xylene | 31 | 7.2 | 1400 | 320 | NA | NA |
| Naphthalene | 160 | 31 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 190 | N/A | 320000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 190 | N/A | 260000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 160 | N/A | 44000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|--------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 18% 1, 4-Difluorobenzene: %D from CCV: 33% Chlorobenzene-d5: %D from CCV: 44% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58(422) | NA | | | |
| | Lab ID | 1110413A-06A | NA | | | |
| | Date Collected | 10/14/2011 | NA | | | |
| | Date Received | 10/20/2011 | NA | | | |
| | Date Analyzed | 10/21/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 4 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 5.0 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 21.5 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 43 | 19 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 43 | 12 | ND | ND | NA | NA |
| Benzene | 43 | 14 | ND | ND | NA | NA |
| Toluene | 43 | 11 | 130 | 35 | NA | NA |
| Ethylbenzene | 43 | 9.9 | 620 | 140 | NA | NA |
| m- & p- Xylenes | 43 | 9.9 | 14000 | 3300 | NA | NA |
| o-Xylene | 43 | 9.9 | 1600 | 370 | NA | NA |
| Naphthalene | 220 | 43 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 260 | N/A | 450000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 260 | N/A | 450000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 220 | N/A | 44000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|--------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 8.7% 1, 4-Difluorobenzene: %D from CCV: 18% Chlorobenzene-d5: %D from CCV: 29% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B58(492) | NA | | | |
| | Lab ID | 1110413A-07A | NA | | | |
| | Date Collected | 10/14/2011 | NA | | | |
| | Date Received | 10/20/2011 | NA | | | |
| | Date Analyzed | 10/21/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 4.6 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 21.1 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 42 | 19 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 42 | 12 | ND | ND | NA | NA |
| Benzene | 42 | 13 | ND | ND | NA | NA |
| Toluene | 42 | 11 | 160 | 41 | NA | NA |
| Ethylbenzene | 42 | 9.7 | 720 | 170 | NA | NA |
| m- & p- Xylenes | 42 | 9.7 | 17000 | 3900 | NA | NA |
| o-Xylene | 42 | 9.7 | 2000 | 450 | NA | NA |
| Naphthalene | 220 | 40 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 250 | N/A | 460000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 250 | N/A | 380000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 210 | N/A | 58000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|--------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 19% 1, 4-Difluorobenzene: %D from CCV: 27% Chlorobenzene-d5: %D from CCV: 32% MS Tuning Standard: Bromofluorobenzene | Client ID | HAFB-ST03-B59(388) | NA | | | |
| | Lab ID | 1110413A-08A | NA | | | |
| | Date Collected | 10/14/2011 | NA | | | |
| | Date Received | 10/20/2011 | NA | | | |
| | Date Analyzed | 10/21/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA in. Hg | | | |
| | Post-Sample Vacuum (field) | 4 in. Hg | NA in. Hg | | | |
| | Lab Receipt Vacuum | 5.0 in. Hg | NA in. Hg | | | |
| | Dilution Factor | 2.77 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 5.5 | 2.5 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 5.5 | 1.5 | 78 | 22 | NA | NA |
| Benzene | 5.6 | 1.7 | 180 | 56 | NA | NA |
| Toluene | 5.5 | 1.5 | 360 | 97 | NA | NA |
| Ethylbenzene | 5.5 | 1.3 | 120 | 29 | NA | NA |
| m- & p- Xylenes | 5.5 | 1.3 | 2000 | 450 | NA | NA |
| o-Xylene | 5.5 | 1.3 | 420 | 96 | NA | NA |
| Naphthalene | 29 | 5.5 | 140 | 26 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 33 | N/A | 30000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 33 | N/A | 32000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 28 | N/A | 10000 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 21% 1, 4-Difluorobenzene: %D from CCV: 32% Chlorobenzene-d5: %D from CCV: 29% MS Tuning Standard: Bromofluorobenzene | Client ID | | HH-OU1C-MW10SG | | NA | |
| | Lab ID | | 1110413A-09A | | NA | |
| | Date Collected | | 10/18/2011 | | NA | |
| | Date Received | | 10/20/2011 | | NA | |
| | Date Analyzed | | 10/24/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | 30 | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | 3 | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | 6.0 | in. Hg | NA | in. Hg |
| | Dilution Factor | | 3360 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 6700 | 3000 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 6700 | 1800 | ND | ND | NA | NA |
| Benzene | 6800 | 2100 | 16000 | 4900 | NA | NA |
| Toluene | 6700 | 1800 | ND | ND | NA | NA |
| Ethylbenzene | 6700 | 1500 | ND | ND | NA | NA |
| m- & p- Xylenes | 6700 | 1500 | ND | ND | NA | NA |
| o-Xylene | 6700 | 1500 | ND | ND | NA | NA |
| Naphthalene | 35000 | 6700 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 40000 | N/A | 66000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 40000 | N/A | 1000000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 34000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 3.4% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene | Client ID | HH-OU1C-MW22R | NA | | | |
| | Lab ID | 1110413A-10A | NA | | | |
| | Date Collected | 10/18/2011 | NA | | | |
| | Date Received | 10/20/2011 | NA | | | |
| | Date Analyzed | 10/25/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 5.4 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 8150 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 16000 | 7300 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 16000 | 4500 | ND | ND | NA | NA |
| Benzene | 16000 | 5100 | ND | ND | NA | NA |
| Toluene | 16000 | 4300 | ND | ND | NA | NA |
| Ethylbenzene | 16000 | 3700 | ND | ND | NA | NA |
| m- & p- Xylenes | 16000 | 3700 | ND | ND | NA | NA |
| o-Xylene | 16000 | 3700 | ND | ND | NA | NA |
| Naphthalene | 85000 | 16000 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 98000 | N/A | 63000000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 98000 | N/A | 2300000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 82000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 11% 1, 4-Difluorobenzene: %D from CCV: 11% Chlorobenzene-d5: %D from CCV: 14% MS Tuning Standard: Bromofluorobenzene | Client ID | HH-OU1C-OTNS1 | NA | | | |
| | Lab ID | 1110413A-11A | NA | | | |
| | Date Collected | 10/18/2011 | NA | | | |
| | Date Received | 10/20/2011 | NA | | | |
| | Date Analyzed | 10/21/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 4.2 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 1.56 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 3.1 | 1.4 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 3.1 | 0.86 | ND | ND | NA | NA |
| Benzene | 3.1 | 0.98 | ND | ND | NA | NA |
| Toluene | 3.1 | 0.83 | ND | ND | NA | NA |
| Ethylbenzene | 3.1 | 0.72 | ND | ND | NA | NA |
| m- & p- Xylenes | 3.1 | 0.72 | ND | ND | NA | NA |
| o-Xylene | 3.1 | 0.72 | ND | ND | NA | NA |
| Naphthalene | 16 | 3.1 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 19 | N/A | 620 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 19 | N/A | 71 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 16 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|--------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 4.8% 1, 4-Difluorobenzene: %D from CCV: 0.22% Chlorobenzene-d5: %D from CCV: 2.9% MS Tuning Standard: Bromofluorobenzene | Client ID | GASOLINE#2 | NA | | | |
| | Lab ID | 1110413A-12A | NA | | | |
| | Date Collected | 10/18/2011 | NA | | | |
| | Date Received | 10/20/2011 | NA | | | |
| | Date Analyzed | 10/25/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 2.6 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 2450 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 4900 | 2200 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 4800 | 1300 | ND | ND | NA | NA |
| Benzene | 4900 | 1500 | 29000 | 9200 | NA | NA |
| Toluene | 4900 | 1300 | 130000 | 34000 | NA | NA |
| Ethylbenzene | 4900 | 1100 | 11000 | 2500 | NA | NA |
| m- & p- Xylenes | 4900 | 1100 | 38000 | 8700 | NA | NA |
| o-Xylene | 4900 | 1100 | 11000 | 2600 | NA | NA |
| Naphthalene | 26000 | 4900 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 29000 | N/A | 8200000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 29000 | N/A | 130000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 24000 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|--------------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 6.5% 1, 4-Difluorobenzene: %D from CCV: 3.6% Chlorobenzene-d5: %D from CCV: 1.3% MS Tuning Standard: Bromofluorobenzene | Client ID | GASOLINE#2 Lab Duplicate | | NA | | |
| | Lab ID | 1110413A-12AA | | NA | | |
| | Date Collected | 10/18/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | 10/25/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 2.6 | in. Hg | NA | in. Hg | |
| Dilution Factor | 7350 | | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 15000 | 6600 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 14000 | 4000 | ND | ND | NA | NA |
| Benzene | 15000 | 4600 | 34000 | 11000 | NA | NA |
| Toluene | 15000 | 3900 | 150000 | 40000 | NA | NA |
| Ethylbenzene | 15000 | 3400 | ND | ND | NA | NA |
| m- & p- Xylenes | 15000 | 3400 | 40000 | 9200 | NA | NA |
| o-Xylene | 15000 | 3400 | ND | ND | NA | NA |
| Naphthalene | 77000 | 15000 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 88000 | N/A | 9500000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 88000 | N/A | 130000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 74000 | N/A | ND | N/A | NA | N/A |

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²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

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POSITION: Laboratory Director

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DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|--------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 9.8% 1, 4-Difluorobenzene: %D from CCV: 3.5% Chlorobenzene-d5: %D from CCV: 7.4% MS Tuning Standard: Bromofluorobenzene | Client ID | DIESEL#3 | NA | | | |
| | Lab ID | 1110413A-13A | NA | | | |
| | Date Collected | 10/18/2011 | NA | | | |
| | Date Received | 10/20/2011 | NA | | | |
| | Date Analyzed | 10/24/2011 | NA | | | |
| | Pre-Sample Vacuum (field) | 30 in. Hg | NA | in. Hg | | |
| | Post-Sample Vacuum (field) | 5 in. Hg | NA | in. Hg | | |
| | Lab Receipt Vacuum | 3.2 in. Hg | NA | in. Hg | | |
| | Dilution Factor | 10 | NA | | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 20 | 9.0 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 20 | 5.5 | ND | ND | NA | NA |
| Benzene | 20 | 6.3 | 1000 | 330 | NA | NA |
| Toluene | 20 | 5.3 | 4000 | 1100 | NA | NA |
| Ethylbenzene | 20 | 4.6 | 850 | 200 | NA | NA |
| m- & p- Xylenes | 20 | 4.6 | 2700 | 630 | NA | NA |
| o-Xylene | 20 | 4.6 | 1100 | 250 | NA | NA |
| Naphthalene | 100 | 20 | 120 | 24 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 120 | N/A | 160000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 120 | N/A | 43000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 100 | N/A | 5200 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

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³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

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APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|------------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 3.3% 1, 4-Difluorobenzene: %D from CCV: 4.1% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene | Client ID | DIESEL#3 Lab Duplicate | | NA | | |
| | Lab ID | 1110413A-13AA | | NA | | |
| | Date Collected | 10/18/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | 10/24/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.2 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 10 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 20 | 9.0 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 20 | 5.5 | ND | ND | NA | NA |
| Benzene | 20 | 6.3 | 1000 | 310 | NA | NA |
| Toluene | 20 | 5.3 | 3700 | 990 | NA | NA |
| Ethylbenzene | 20 | 4.6 | 810 | 190 | NA | NA |
| m- & p- Xylenes | 20 | 4.6 | 2600 | 590 | NA | NA |
| o-Xylene | 20 | 4.6 | 1000 | 240 | NA | NA |
| Naphthalene | 100 | 20 | 120 | 22 | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 120 | N/A | 150000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 120 | N/A | 40000 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 100 | N/A | 4800 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|------------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 8.4% 1, 4-Difluorobenzene: %D from CCV: 7.2% Chlorobenzene-d5: %D from CCV: 6.4% MS Tuning Standard: Bromofluorobenzene | Client ID | GASOLINE-EXHAUST | | NA | | |
| | Lab ID | 1110413A-14A | | NA | | |
| | Date Collected | 10/18/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | 10/24/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.2 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 15 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 30 | 14 | 180 | 83 | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 30 | 8.2 | ND | ND | NA | NA |
| Benzene | 30 | 9.4 | 4700 | 1500 | NA | NA |
| Toluene | 30 | 8.0 | 6400 | 1700 | NA | NA |
| Ethylbenzene | 30 | 6.9 | 1000 | 240 | NA | NA |
| m- & p- Xylenes | 30 | 6.9 | 3800 | 880 | NA | NA |
| o-Xylene | 30 | 6.9 | 1400 | 320 | NA | NA |
| Naphthalene | 160 | 30 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 180 | N/A | 25000 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 180 | N/A | 340 | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 150 | N/A | 2200 | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

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SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/10/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|---|---------------------------------|----------------------------------|---|
| Sample Type(s) | <input type="checkbox"/> Grab | <input checked="" type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input checked="" type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input checked="" type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input checked="" type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input checked="" type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|----------------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 5.3% 1, 4-Difluorobenzene: %D from CCV: 0.35% Chlorobenzene-d5: %D from CCV: 3.9% MS Tuning Standard: Bromofluorobenzene | Client ID | DIESEL-EXHAUST | | NA | | |
| | Lab ID | 1110413A-15A | | NA | | |
| | Date Collected | 10/18/2011 | | NA | | |
| | Date Received | 10/20/2011 | | NA | | |
| | Date Analyzed | 10/21/2011 | | NA | | |
| | Pre-Sample Vacuum (field) | 30 | in. Hg | NA | in. Hg | |
| | Post-Sample Vacuum (field) | 5 | in. Hg | NA | in. Hg | |
| | Lab Receipt Vacuum | 3.0 | in. Hg | NA | in. Hg | |
| | Dilution Factor | 1.49 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 3.0 | 1.3 | 5.8 | 2.6 | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 3.0 | 0.82 | ND | ND | NA | NA |
| Benzene | 3.0 | 0.94 | 14 | 4.5 | NA | NA |
| Toluene | 3.0 | 0.79 | 4.6 | 1.2 | NA | NA |
| Ethylbenzene | 3.0 | 0.68 | ND | ND | NA | NA |
| m- & p- Xylenes | 3.0 | 0.68 | ND | ND | NA | NA |
| o-Xylene | 3.0 | 0.68 | ND | ND | NA | NA |
| Naphthalene | 16 | 3.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 18 | N/A | 45 | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 18 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 15 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | |
|-----------------------------|---|---|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour <input type="checkbox"/> 4 hour <input type="checkbox"/> 8 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L <input type="checkbox"/> 15-L <input type="checkbox"/> Other | 0 0 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical <input type="checkbox"/> Fixed-Orifice <input type="checkbox"/> Electronic <input type="checkbox"/> Other | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | |

APH ANALYTICAL RESULTS

| | | | | | | |
|--|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 0.36% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 8.5% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1110413A-16A | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 10/21/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| | Dilution Factor | | 1 | | NA | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

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I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | |
|-----------------------------|---|---|-------------------------------------|---------------------------------|----------------------------------|--------------------------------|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): <input checked="" type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): <input type="checkbox"/> <=20% <input type="checkbox"/> >20% | | | | | |

APH ANALYTICAL RESULTS

| | | | |
|--|------------------------------------|----------------|-----------|
| Internal Standards: Bromochloroethane: %D from CCV: 0.36% 1, 4-Difluorobenzene: %D from CCV: 12% Chlorobenzene-d5: %D from CCV: 8.5% MS Tuning Standard: Bromofluorobenzene | Client ID | Lab Blank | NA |
| | Lab ID | 1110413A-16B | NA |
| | Date Collected | NA | NA |
| | Date Received | NA | NA |
| | Date Analyzed | 10/24/2011 | NA |
| | Pre-Sample Vacuum (field) | NA in. Hg | NA in. Hg |
| | Post-Sample Vacuum (field) | NA in. Hg | NA in. Hg |
| | Lab Receipt Vacuum | NA in. Hg | NA in. Hg |
| Target APH Analytes & Hydrocarbon Ranges | Dilution Factor | 1 | NA |
| | Reporting Limit | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 |
| | ppb v/v | µg/m3 | ppb v/v |
| | 1,3-Butadiene | 2.0 | 0.90 |
| | Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 |
| | Benzene | 2.0 | 0.63 |
| | Toluene | 2.0 | 0.53 |
| Ethylbenzene m- & p- Xylenes o-Xylene Naphthalene C5-C8 Aliphatic Hydrocarbons ^{1 2} C9-C12 Aliphatic Hydrocarbons ^{1 3} C9-C10 Aromatic Hydrocarbons | 2.0 | 0.46 | ND |
| | 2.0 | 0.46 | ND |
| | 10 | 2.0 | ND |
| | 12 | N/A | ND |
| | 12 | N/A | ND |
| | 10 | N/A | ND |
| | 2.0 | 0.46 | ND |
| | 2.0 | 0.46 | ND |
| | 2.0 | 0.46 | ND |
| | 2.0 | 0.46 | ND |
| | 2.0 | 0.46 | ND |
| | 2.0 | 0.46 | ND |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details Attached

Were all performance/acceptance standards for required QA/QC procedures achieved? ☒ Yes ☐ No - Details Attached

Were any significant modifications made to the APH method, as specified in Sect 11.1.2? ☒ No ☐ Yes - Details Attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:

Linda L. Freeman

POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

APH DATA REPORTING INFORMATION

SAMPLE INFORMATION (check all that apply)

| | | | | | | | |
|-----------------------------|--|---|-------------------------------------|---------------------------------|---------------------------------|----------------------------------|--------------------------------|
| Sample Type(s) | <input checked="" type="checkbox"/> Grab | <input type="checkbox"/> Time-integrated: | <input type="checkbox"/> 2 hour | <input type="checkbox"/> 4 hour | <input type="checkbox"/> 8 hour | <input type="checkbox"/> 24 hour | <input type="checkbox"/> Other |
| Sample Container(s) | <input checked="" type="checkbox"/> Canister(s): | <input checked="" type="checkbox"/> 6-L | <input type="checkbox"/> 15-L | <input type="checkbox"/> Other | 0 | 0 | 0 |
| Sampling Flow Controller(s) | <input type="checkbox"/> Mechanical | <input type="checkbox"/> Fixed-Orifice | <input type="checkbox"/> Electronic | <input type="checkbox"/> Other | | | |
| Sampling Flow Meter(s) | RPD of pre & post-sampling calibration check(s): | | | <input type="checkbox"/> <=20% | <input type="checkbox"/> >20% | | |

APH ANALYTICAL RESULTS

| | | | | | | |
|---|----------------------------|---------|----------------|---------|----------------|---------|
| Internal Standards: Bromochloroethane: %D from CCV: 13% 1, 4-Difluorobenzene: %D from CCV: 13% Chlorobenzene-d5: %D from CCV: 12% MS Tuning Standard: Bromofluorobenzene | Client ID | | Lab Blank | | NA | |
| | Lab ID | | 1110413A-16C | | NA | |
| | Date Collected | | NA | | NA | |
| | Date Received | | NA | | NA | |
| | Date Analyzed | | 10/25/2011 | | NA | |
| | Pre-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Post-Sample Vacuum (field) | | NA | in. Hg | NA | in. Hg |
| | Lab Receipt Vacuum | | NA | in. Hg | NA | in. Hg |
| Dilution Factor | | 1 | | NA | | |
| Target APH Analytes & Hydrocarbon Ranges | Reporting Limit | | Sample Results | | Sample Results | |
| | µg/m3 | ppb v/v | µg/m3 | ppb v/v | µg/m3 | ppb v/v |
| 1,3-Butadiene | 2.0 | 0.90 | ND | ND | NA | NA |
| Methyl tertiary butyl ether (MTBE) | 2.0 | 0.55 | ND | ND | NA | NA |
| Benzene | 2.0 | 0.63 | ND | ND | NA | NA |
| Toluene | 2.0 | 0.53 | ND | ND | NA | NA |
| Ethylbenzene | 2.0 | 0.46 | ND | ND | NA | NA |
| m- & p- Xylenes | 2.0 | 0.46 | ND | ND | NA | NA |
| o-Xylene | 2.0 | 0.46 | ND | ND | NA | NA |
| Naphthalene | 10 | 2.0 | ND | ND | NA | NA |
| C5-C8 Aliphatic Hydrocarbons ^{1 2} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C12 Aliphatic Hydrocarbons ^{1 3} | 12 | N/A | ND | N/A | NA | N/A |
| C9-C10 Aromatic Hydrocarbons | 10 | N/A | ND | N/A | NA | N/A |

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range

²C5-C8 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range

³C9-C12 aliphatic hydrocarbons excluding the concentration of Target TO-15/APH Analytes eluting in that range AND concentration of C9-C10 aromatic hydrocarbons

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I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE:



POSITION: Laboratory Director

PRINTED NAME: Linda L. Freeman

DATE: 11/17/2011

2/1/2012

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:
Project #:
Workorder #: 1110157R1

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110157R1

Work Order Summary

| | | | |
|------------------------|---|------------------|---|
| CLIENT: | Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 | BILL TO: | Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 |
| PHONE: | 808-586-4328 | P.O. # | 1077200 |
| FAX: | 808-586-7537 | PROJECT # | |
| DATE RECEIVED: | 10/08/2011 | CONTACT: | Kelly Buettner |
| DATE COMPLETED: | 11/16/2011 | | |
| DATE REISSUED: | 02/01/2012 | | |

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> |
|-------------------|------------------------|-------------------|
| 01A | HAFB-SP43-VMP10(TO17A) | Modified TO-17 VI |
| 02A | HAFB-SP43-VMP10(TO17B) | Modified TO-17 VI |
| 03A | HAFB-SP43-VMP11(TO17A) | Modified TO-17 VI |
| 04A | HAFB-SP43-VMP11(TO17B) | Modified TO-17 VI |
| 05A | HAFB-SP43-VMP12(TO17A) | Modified TO-17 VI |
| 06A | HAFB-SP43-VMP12(TO17B) | Modified TO-17 VI |
| 07A | HAFB-SP43-VMP16(TO17A) | Modified TO-17 VI |
| 08A | HAFB-SP43-VMP16(TO17B) | Modified TO-17 VI |
| 09A | HAFB-SP43-VMP17(TO17A) | Modified TO-17 VI |
| 10A | HAFB-SP43-VMP17(TO17B) | Modified TO-17 VI |
| 11A | FV-GP01-HDOH#2(TO17A) | Modified TO-17 VI |
| 12A | FV-GP01-HDOH#2(TO17B) | Modified TO-17 VI |
| 13A | FV-GP08-HDOH#2(TO17A) | Modified TO-17 VI |
| 14A | FV-GP08-HDOH#2(TO17B) | Modified TO-17 VI |
| 15A | FV-GP16R-HDOH#2(TO17A) | Modified TO-17 VI |
| 16A | FV-GP16R-HDOH#2(TO17B) | Modified TO-17 VI |
| 17A | JP8#1(TO17A) | Modified TO-17 VI |

Continued on next page

WORK ORDER #: 1110157R1

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/16/2011

DATE REISSUED: 02/01/2012

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> |
|-------------------|--------------|-------------------|
| 18A | JP8#1(TO17B) | Modified TO-17 VI |
| 19A | TRIP BLANK | Modified TO-17 VI |
| 20A | Lab Blank | Modified TO-17 VI |
| 20B | Lab Blank | Modified TO-17 VI |
| 20C | Lab Blank | Modified TO-17 VI |
| 21A | CCV | Modified TO-17 VI |
| 21B | CCV | Modified TO-17 VI |
| 21C | CCV | Modified TO-17 VI |
| 22A | LCS | Modified TO-17 VI |
| 22B | LCS | Modified TO-17 VI |
| 22C | LCS | Modified TO-17 VI |

CERTIFIED BY:



Laboratory Director

DATE: 02/01/12

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE
EPA Method TO-17
Tetra Tech EM, Inc.
Workorder# 1110157R1**

Eighteen TO-17 VI Tube samples plus one Trip Blank were received on October 08, 2011. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for further separation.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The samples were analyzed following MA DEP APH methodology with several modifications to accommodate the project requirements. Sorbent tubes were used for sample collection instead of canisters as specified by the method. Additionally, the GC column used for this extended MA APH range had a smaller film thickness than what was required by the MA APH method. This modification allowed for higher GC temperatures which were necessary to effectively extend the target compound range to C24. However, the column was unable to resolve several aliphatic calibration compounds from internal standard and target compounds. This required a slight modification in the specific hydrocarbons utilized to generate calibration factors for the C5-C8 aliphatic and C9-C12 aliphatic ranges. No significant impact on data quality is expected.

The aliphatic range C13-C18 recovered below the laboratory acceptance limits of 60-140% in the daily CCV analyzed on 10/26/11 and 10/31/11. Associated detections and non-detections were flagged to indicate a potential low bias. Several components recovered above laboratory acceptance criterion for the CCV. Associated detections were flagged as estimated values.

The field surrogate Naphthalene-d8 exceeded laboratory limits of 50-150% due to high level matrix interference in samples HAFB-SP43-VMP10(TO-17A), HAFB-SP43-VMP11(TO17A), and HAFB-SP43-VMP16(TO17A).

TPH referenced to gasoline was calculated using a single point calibration.

Each sample was collected with 2 tubes in series with the TO17A designation indicating the front, or sample side, of the train. The TO17B designation indicated the back side of the train to measure potential breakthrough of unretained compounds. Several back tubes had detections above the reporting limit; however, the detections were not indicative of breakthrough based on the chromatographic pattern.

Samples HAFB-SP43-VMP10(TO-17A), HAFB-SP43-VMP11(TO17A), HAFB-SP43-VMP16(TO17A), and FV-GP16R-HDOH#2(TO17A) were analyzed at a higher split than the calibration due to high concentrations. The split used resulted in a 4-fold dilution and the reporting limit and calibration range were raised accordingly.

THE WORKORDER WAS REISSUED ON FEBRUARY 1, 2012 TO ADD TPH (DIESEL RANGE) PER CLIENT REQUEST. THE DIESEL RANGE WAS BRACKETED BY THE RETENTION TIME MARKERS C9 AND C24.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-SP43-VMP10(TO17A)

Lab ID#: 1110157R1-01A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 84 | 1700 |
| Ethyl Benzene | 17 | 340 | 500 | 10000 |
| m,p-Xylene | 17 | 340 | 32 | 640 |
| Naphthalene | 8.0 | 160 | 100 | 2000 |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 660000 | 13000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 320000 | 6500000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 3300 J | 66000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 9100 | 180000 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 910000 | 18000000 |
| TPH (Diesel Range) | 4000 | 80000 | 36000 | 730000 |

Client Sample ID: HAFB-SP43-VMP10(TO17B)

Lab ID#: 1110157R1-02A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP11(TO17A)

Lab ID#: 1110157R1-03A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 38 | 750 |
| Ethyl Benzene | 17 | 340 | 2000 E | 39000 E |
| m,p-Xylene | 17 | 340 | 50 | 1000 |
| o-Xylene | 17 | 340 | 34 | 680 |
| Naphthalene | 8.0 | 160 | 58 | 1200 |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 850000 | 17000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 310000 | 6200000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 5100 J | 100000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 7000 | 140000 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 230000 | 4600000 |
| TPH (Diesel Range) | 4000 | 80000 | 35000 | 710000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-SP43-VMP11(TO17B)

Lab ID#: 1110157R1-04A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------|--------------------|-----------------------|----------------|-------------------|
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 24 | 480 |

Client Sample ID: HAFB-SP43-VMP12(TO17A)

Lab ID#: 1110157R1-05A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|----------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.0 | 80 |

Client Sample ID: HAFB-SP43-VMP12(TO17B)

Lab ID#: 1110157R1-06A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP16(TO17A)

Lab ID#: 1110157R1-07A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 60 | 1200 |
| Toluene | 3.8 | 76 | 16 | 330 |
| Ethyl Benzene | 4.3 | 86 | 86 | 1700 |
| m,p-Xylene | 4.3 | 86 | 56 | 1100 |
| o-Xylene | 4.3 | 86 | 19 | 390 |
| Naphthalene | 2.0 | 40 | 9.8 | 200 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 1300000 | 26000000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 230000 | 4600000 |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 620 J | 12000 J |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 6600 | 130000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1300000 | 26000000 |
| TPH (Diesel Range) | 1000 | 20000 | 16000 | 320000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-SP43-VMP16(TO17B)

Lab ID#: 1110157R1-08A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP17(TO17A)

Lab ID#: 1110157R1-09A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Naphthalene | 2.0 | 33 | 12 | 200 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | 450 | 7500 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | 170 J | 2800 J |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | 1200 | 20000 |

Client Sample ID: HAFB-SP43-VMP17(TO17B)

Lab ID#: 1110157R1-10A

No Detections Were Found.

Client Sample ID: FV-GP01-HDOH#2(TO17A)

Lab ID#: 1110157R1-11A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 53 | 6.3 | 100 |
| m,p-Xylene | 4.3 | 72 | 5.5 | 92 |
| Hexane | 3.5 | 58 | 3.5 | 59 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | 660 | 11000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | 780 J | 13000 J |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | 1600 | 27000 |

Client Sample ID: FV-GP01-HDOH#2(TO17B)

Lab ID#: 1110157R1-12A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------|--------------------|-----------------------|----------------|-------------------|
| Toluene | 3.8 | 63 | 4.9 | 82 |
| m,p-Xylene | 4.3 | 72 | 5.0 | 84 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: FV-GP01-HDOH#2(TO17B)

Lab ID#: 1110157R1-12A

| | | | | |
|------------------------------------|------|-------|------|--------|
| Naphthalene | 2.0 | 33 | 64 | 1100 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | 71 J | 1200 J |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | 1200 | 19000 |

Client Sample ID: FV-GP08-HDOH#2(TO17A)

Lab ID#: 1110157R1-13A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 16 | 320 |
| Ethyl Benzene | 4.3 | 86 | 4.5 | 90 |
| m,p-Xylene | 4.3 | 86 | 5.0 | 99 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 45000 | 900000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 32000 J | 640000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 300 J | 6000 J |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 540 | 11000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 43000 | 860000 |
| TPH (Diesel Range) | 1000 | 20000 | 6500 | 130000 |

Client Sample ID: FV-GP08-HDOH#2(TO17B)

Lab ID#: 1110157R1-14A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|-------------------------------|--------------------|-----------------------|----------------|-------------------|
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 42 | 830 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 37 J | 750 J |

Client Sample ID: FV-GP16R-HDOH#2(TO17A)

Lab ID#: 1110157R1-15A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|--------------------------------|--------------------|-----------------------|----------------|-------------------|
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 160000 | 3200000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 270000 | 5500000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 6300 J | 130000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 1600 | 32000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: FV-GP16R-HDOH#2(TO17A)

Lab ID#: 1110157R1-15A

| | | | | |
|------------------------------------|------|-------|--------|----------|
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 510000 | 10000000 |
| TPH (Diesel Range) | 4000 | 80000 | 44000 | 890000 |

Client Sample ID: FV-GP16R-HDOH#2(TO17B)

Lab ID#: 1110157R1-16A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|-------------------------------|--------------------|-----------------------|----------------|-------------------|
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 80 | 1600 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 45 J | 890 J |

Client Sample ID: JP8#1(TO17A)

Lab ID#: 1110157R1-17A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 76 | 7600 |
| Toluene | 3.8 | 380 | 300 | 30000 |
| Ethyl Benzene | 4.3 | 430 | 110 | 11000 |
| m,p-Xylene | 4.3 | 430 | 360 | 36000 |
| o-Xylene | 4.3 | 430 | 170 J | 17000 J |
| Hexane | 3.5 | 350 | 280 | 28000 |
| Naphthalene | 2.0 | 200 | 28 | 2800 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 18000 | 1800000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | 13000 J | 1300000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | 1500 | 150000 |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | 1900 J | 190000 J |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | 170 | 17000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 21000 | 2100000 |
| TPH (Diesel Range) | 1000 | 100000 | 3800 | 380000 |

Client Sample ID: JP8#1(TO17B)

Lab ID#: 1110157R1-18A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|----------|--------------------|-----------------------|----------------|-------------------|
|----------|--------------------|-----------------------|----------------|-------------------|

**Summary of Detected Compounds
EPA METHOD TO-17**

Client Sample ID: JP8#1(TO17B)

Lab ID#: 1110157R1-18A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|----------------------------|-------------------------------|------------------------|---------------------------|
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 1200 | 120000 |

Client Sample ID: TRIP BLANK

Lab ID#: 1110157R1-19A

No Detections Were Found.

Client Sample ID: HAFB-SP43-VMP10(TO17A)

Lab ID#: 1110157R1-01A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|--|
| File Name: | j103135 | Date of Extraction: NA | Date of Collection: 10/5/11 2:15:00 PM |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 06:12 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 84 | 1700 |
| Toluene | 15 | 300 | Not Detected | Not Detected |
| Ethyl Benzene | 17 | 340 | 500 | 10000 |
| m,p-Xylene | 17 | 340 | 32 | 640 |
| o-Xylene | 17 | 340 | Not Detected | Not Detected |
| Hexane | 14 | 280 | Not Detected | Not Detected |
| Naphthalene | 8.0 | 160 | 100 | 2000 |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 660000 | 13000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 320000 | 6500000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 3300 J | 66000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 9100 | 180000 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 910000 | 18000000 |
| TPH (Diesel Range) | 4000 | 80000 | 36000 | 730000 |

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 122 | 50-150 |
| Naphthalene-d8 | 206 Q | 50-150 |

Client Sample ID: HAFB-SP43-VMP10(TO17B)

Lab ID#: 1110157R1-02A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102720 | Date of Extraction: NA | Date of Collection: 10/5/11 2:15:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 09:19 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 70 | 50-150 |
| Naphthalene-d8 | 65 | 50-150 |

Client Sample ID: HAFB-SP43-VMP11(TO17A)

Lab ID#: 1110157R1-03A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|--|
| File Name: | j103126 | Date of Extraction: NA | Date of Collection: 10/5/11 1:18:00 PM |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 01:01 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 38 | 750 |
| Toluene | 15 | 300 | Not Detected | Not Detected |
| Ethyl Benzene | 17 | 340 | 2000 E | 39000 E |
| m,p-Xylene | 17 | 340 | 50 | 1000 |
| o-Xylene | 17 | 340 | 34 | 680 |
| Hexane | 14 | 280 | Not Detected | Not Detected |
| Naphthalene | 8.0 | 160 | 58 | 1200 |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 850000 | 17000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 310000 | 6200000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 5100 J | 100000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 7000 | 140000 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 230000 | 4600000 |
| TPH (Diesel Range) | 4000 | 80000 | 35000 | 710000 |

E = Exceeds instrument calibration range.

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 125 | 50-150 |
| Naphthalene-d8 | 193 Q | 50-150 |

Client Sample ID: HAFB-SP43-VMP11(TO17B)

Lab ID#: 1110157R1-04A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102723 | Date of Extraction: NA | Date of Collection: 10/5/11 1:18:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 11:07 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 24 | 480 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 67 | 50-150 |
| Naphthalene-d8 | 70 | 50-150 |

Client Sample ID: HAFB-SP43-VMP12(TO17A)

Lab ID#: 1110157R1-05A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102628 | Date of Extraction: NA | Date of Collection: 10/5/11 12:45:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 02:53 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | 4.0 | 80 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 114 | 50-150 |
| Naphthalene-d8 | 116 | 50-150 |

Client Sample ID: HAFB-SP43-VMP12(TO17B)

Lab ID#: 1110157R1-06A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102717 | Date of Extraction: NA | Date of Collection: 10/5/11 12:45:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 07:31 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 75 | 50-150 |
| Naphthalene-d8 | 63 | 50-150 |

Client Sample ID: HAFB-SP43-VMP16(TO17A)

Lab ID#: 1110157R1-07A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j103123 | Date of Extraction: NA | Date of Collection: 10/5/11 1:45:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 11:20 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 60 | 1200 |
| Toluene | 3.8 | 76 | 16 | 330 |
| Ethyl Benzene | 4.3 | 86 | 86 | 1700 |
| m,p-Xylene | 4.3 | 86 | 56 | 1100 |
| o-Xylene | 4.3 | 86 | 19 | 390 |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | 9.8 | 200 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 1300000 | 26000000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 230000 | 4600000 |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 620 J | 12000 J |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 6600 | 130000 |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1300000 | 26000000 |
| TPH (Diesel Range) | 1000 | 20000 | 16000 | 320000 |

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 123 | 50-150 |
| Naphthalene-d8 | 172 Q | 50-150 |

Client Sample ID: HAFB-SP43-VMP16(TO17B)

Lab ID#: 1110157R1-08A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102721 | Date of Extraction: NA | Date of Collection: 10/5/11 1:45:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 09:55 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 75 | 50-150 |
| Naphthalene-d8 | 68 | 50-150 |

Client Sample ID: HAFB-SP43-VMP17(TO17A)

Lab ID#: 1110157R1-09A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102710 | Date of Extraction: NA | Date of Collection: 10/5/11 11:55:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 03:11 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 53 | Not Detected | Not Detected |
| Toluene | 3.8 | 63 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 33 | 12 | 200 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | 450 | 7500 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | 170 J | 2800 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | 1200 | 20000 |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 96 | 50-150 |
| Naphthalene-d8 | 85 | 50-150 |

Client Sample ID: HAFB-SP43-VMP17(TO17B)

Lab ID#: 1110157R1-10A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102724 | Date of Extraction: NA | Date of Collection: 10/5/11 11:55:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 11:43 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 53 | Not Detected | Not Detected |
| Toluene | 3.8 | 63 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 33 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 79 | 50-150 |
| Naphthalene-d8 | 78 | 50-150 |

Client Sample ID: FV-GP01-HDOH#2(TO17A)

Lab ID#: 1110157R1-11A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102629 | Date of Extraction: NA | Date of Collection: 10/6/11 1:48:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 03:29 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 53 | 6.3 | 100 |
| Toluene | 3.8 | 63 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | 5.5 | 92 |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | 3.5 | 59 |
| Naphthalene | 2.0 | 33 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | 660 | 11000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | 780 J | 13000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | 1600 | 27000 |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

J = Estimated value due to bias in the CCV.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 117 | 50-150 |
| Naphthalene-d8 | 123 | 50-150 |

Client Sample ID: FV-GP01-HDOH#2(TO17B)

Lab ID#: 1110157R1-12A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102722 | Date of Extraction: NA | Date of Collection: 10/6/11 1:48:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 10:31 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 53 | Not Detected | Not Detected |
| Toluene | 3.8 | 63 | 4.9 | 82 |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | 5.0 | 84 |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 33 | 64 | 1100 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | 71 J | 1200 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | 1200 | 19000 |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 72 | 50-150 |
| Naphthalene-d8 | 71 | 50-150 |

Client Sample ID: FV-GP08-HDOH#2(TO17A)

Lab ID#: 1110157R1-13A

EPA METHOD TO-17

| | | | |
|---------------------|---------|--|---|
| File Name: | j102630 | Date of Extraction: NA | Date of Collection: 10/6/11 1:10:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 04:06 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 16 | 320 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | 4.5 | 90 |
| m,p-Xylene | 4.3 | 86 | 5.0 | 99 |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 45000 | 900000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 32000 J | 640000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 300 J | 6000 J |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 540 | 11000 |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 43000 | 860000 |
| TPH (Diesel Range) | 1000 | 20000 | 6500 | 130000 |

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 92 | 50-150 |
| Naphthalene-d8 | 123 | 50-150 |

Client Sample ID: FV-GP08-HDOH#2(TO17B)

Lab ID#: 1110157R1-14A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102718 | Date of Extraction: NA | Date of Collection: 10/6/11 1:10:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 08:07 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 42 | 830 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 37 J | 750 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 79 | 50-150 |
| Naphthalene-d8 | 77 | 50-150 |

Client Sample ID: FV-GP16R-HDOH#2(TO17A)

Lab ID#: 1110157R1-15A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103125 | Date of Extraction: NA | Date of Collection: 10/6/11 12:19:00 PM |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 12:27 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | Not Detected | Not Detected |
| Toluene | 15 | 300 | Not Detected | Not Detected |
| Ethyl Benzene | 17 | 340 | Not Detected | Not Detected |
| m,p-Xylene | 17 | 340 | Not Detected | Not Detected |
| o-Xylene | 17 | 340 | Not Detected | Not Detected |
| Hexane | 14 | 280 | Not Detected | Not Detected |
| Naphthalene | 8.0 | 160 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 160000 | 3200000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 270000 | 5500000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 6300 J | 130000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 1600 | 32000 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 510000 | 10000000 |
| TPH (Diesel Range) | 4000 | 80000 | 44000 | 890000 |

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 98 | 50-150 |
| Naphthalene-d8 | 144 | 50-150 |

Client Sample ID: FV-GP16R-HDOH#2(TO17B)

Lab ID#: 1110157R1-16A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102719 | Date of Extraction: NA | Date of Collection: 10/6/11 12:19:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 08:43 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 80 | 1600 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 45 J | 890 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 76 | 50-150 |
| Naphthalene-d8 | 70 | 50-150 |

Client Sample ID: JP8#1(TO17A)

Lab ID#: 1110157R1-17A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102713 | Date of Extraction: NA | Date of Collection: 10/6/11 3:30:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 05:09 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 76 | 7600 |
| Toluene | 3.8 | 380 | 300 | 30000 |
| Ethyl Benzene | 4.3 | 430 | 110 | 11000 |
| m,p-Xylene | 4.3 | 430 | 360 | 36000 |
| o-Xylene | 4.3 | 430 | 170 J | 17000 J |
| Hexane | 3.5 | 350 | 280 | 28000 |
| Naphthalene | 2.0 | 200 | 28 | 2800 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 18000 | 1800000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | 13000 J | 1300000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | 1500 | 150000 |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | 1900 J | 190000 J |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | 170 | 17000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 21000 | 2100000 |
| TPH (Diesel Range) | 1000 | 100000 | 3800 | 380000 |

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 98 | 50-150 |
| Naphthalene-d8 | 114 | 50-150 |

Client Sample ID: JP8#1(TO17B)

Lab ID#: 1110157R1-18A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|--|
| File Name: | j102725 | Date of Extraction: NA | Date of Collection: 10/6/11 3:30:00 PM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 12:19 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | Not Detected | Not Detected |
| Toluene | 3.8 | 380 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 430 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| Hexane | 3.5 | 350 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 1200 | 120000 |
| TPH (Diesel Range) | 1000 | 100000 | Not Detected | Not Detected |

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 68 | 50-150 |
| Naphthalene-d8 | 65 | 50-150 |

Client Sample ID: TRIP BLANK

Lab ID#: 1110157R1-19A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102716 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 06:55 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 53 | Not Detected | Not Detected |
| Toluene | 3.8 | 63 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 33 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 76 | 50-150 |
| Naphthalene-d8 | 61 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110157R1-20A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102627 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 02:16 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 53 | Not Detected | Not Detected |
| Toluene | 3.8 | 63 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 33 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 100 | 50-150 |
| Naphthalene-d8 | 100 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110157R1-20B

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102709 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 02:32 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 53 | Not Detected | Not Detected |
| Toluene | 3.8 | 63 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 33 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 89 | 50-150 |
| Naphthalene-d8 | 100 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110157R1-20C

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j103112 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 03:52 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 53 | Not Detected | Not Detected |
| Toluene | 3.8 | 63 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 72 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 72 | Not Detected | Not Detected |
| Hexane | 3.5 | 58 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 33 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 380 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 580 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 1700 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 420 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 1700 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 17000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 17000 | Not Detected | Not Detected |

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 98 | 50-150 |
| Naphthalene-d8 | 118 | 50-150 |

Client Sample ID: CCV
Lab ID#: 1110157R1-21A
EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102606 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/26/11 01:19 PM | |

| Compound | %Recovery |
|------------------------------------|-----------|
| Benzene | 106 |
| Toluene | 108 |
| Ethyl Benzene | 120 |
| m,p-Xylene | 117 |
| o-Xylene | 122 |
| Hexane | 102 |
| Naphthalene | 111 |
| C5-C8 Aliphatic Hydrocarbons | 82 |
| C9-C12 Aliphatic Hydrocarbons | 135 Q |
| C13-C18 Aliphatic Hydrocarbons | 57 Q |
| C9-C10 Aromatic Hydrocarbons | 129 |
| C11-C16 Aromatic Hydrocarbons | 118 |
| Total TPH (C5-C24) ref to Gasoline | 100 |
| TPH (Diesel Range) | 100 |

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 116 | 50-150 |
| Naphthalene-d8 | 133 | 50-150 |

Client Sample ID: CCV
Lab ID#: 1110157R1-21B
EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102706 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 12:30 PM | |

| Compound | %Recovery |
|------------------------------------|-----------|
| Benzene | 92 |
| Toluene | 119 |
| Ethyl Benzene | 128 |
| m,p-Xylene | 125 |
| o-Xylene | 131 Q |
| Hexane | 92 |
| Naphthalene | 78 |
| C5-C8 Aliphatic Hydrocarbons | 94 |
| C9-C12 Aliphatic Hydrocarbons | 138 Q |
| C13-C18 Aliphatic Hydrocarbons | 65 |
| C9-C10 Aromatic Hydrocarbons | 143 Q |
| C11-C16 Aromatic Hydrocarbons | 82 |
| Total TPH (C5-C24) ref to Gasoline | 107 |
| TPH (Diesel Range) | 100 |

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 71 | 50-150 |
| Naphthalene-d8 | 112 | 50-150 |

Client Sample ID: CCV
Lab ID#: 1110157R1-21C
EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j103102 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 08:21 AM | |

| Compound | %Recovery |
|------------------------------------|-----------|
| Benzene | 77 |
| Toluene | 90 |
| Ethyl Benzene | 95 |
| m,p-Xylene | 95 |
| o-Xylene | 96 |
| Hexane | 90 |
| Naphthalene | 137 |
| C5-C8 Aliphatic Hydrocarbons | 82 |
| C9-C12 Aliphatic Hydrocarbons | 121 |
| C13-C18 Aliphatic Hydrocarbons | 57 Q |
| C9-C10 Aromatic Hydrocarbons | 106 |
| C11-C16 Aromatic Hydrocarbons | 95 |
| Total TPH (C5-C24) ref to Gasoline | 128 |
| TPH (Diesel Range) | 100 |

Container Type: NA - Not Applicable

Client Sample ID: LCS
Lab ID#: 1110157R1-22A
EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102605 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/26/11 12:35 PM | |

| Compound | %Recovery |
|------------------------------------|------------|
| Benzene | 91 |
| Toluene | 112 |
| Ethyl Benzene | 125 |
| m,p-Xylene | 127 |
| o-Xylene | 127 |
| Hexane | 91 |
| Naphthalene | 124 |
| C5-C8 Aliphatic Hydrocarbons | 111 |
| C9-C12 Aliphatic Hydrocarbons | 124 |
| C13-C18 Aliphatic Hydrocarbons | 54 |
| C9-C10 Aromatic Hydrocarbons | 141 Q |
| C11-C16 Aromatic Hydrocarbons | 134 |
| Total TPH (C5-C24) ref to Gasoline | Not Spiked |
| TPH (Diesel Range) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 117 | 50-150 |
| Naphthalene-d8 | 122 | 50-150 |

Client Sample ID: LCS
Lab ID#: 1110157R1-22B
EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102707 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 01:05 PM | |

| Compound | %Recovery |
|------------------------------------|------------|
| Benzene | 82 |
| Toluene | 122 |
| Ethyl Benzene | 134 |
| m,p-Xylene | 140 |
| o-Xylene | 140 |
| Hexane | 88 |
| Naphthalene | 123 |
| C5-C8 Aliphatic Hydrocarbons | 112 |
| C9-C12 Aliphatic Hydrocarbons | 138 |
| C13-C18 Aliphatic Hydrocarbons | 56 |
| C9-C10 Aromatic Hydrocarbons | 154 Q |
| C11-C16 Aromatic Hydrocarbons | 153 Q |
| Total TPH (C5-C24) ref to Gasoline | Not Spiked |
| TPH (Diesel Range) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 82 | 50-150 |
| Naphthalene-d8 | 125 | 50-150 |

Client Sample ID: LCS
Lab ID#: 1110157R1-22C
EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j103105 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 11:35 AM | |

| Compound | %Recovery |
|------------------------------------|------------|
| Benzene | 75 |
| Toluene | 120 |
| Ethyl Benzene | 127 |
| m,p-Xylene | 134 |
| o-Xylene | 132 |
| Hexane | 86 |
| Naphthalene | 137 |
| C5-C8 Aliphatic Hydrocarbons | 94 |
| C9-C12 Aliphatic Hydrocarbons | 134 |
| C13-C18 Aliphatic Hydrocarbons | 59 |
| C9-C10 Aromatic Hydrocarbons | 146 |
| C11-C16 Aromatic Hydrocarbons | 197 Q |
| Total TPH (C5-C24) ref to Gasoline | Not Spiked |
| TPH (Diesel Range) | Not Spiked |

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 89 | 50-150 |
| Naphthalene-d8 | 119 | 50-150 |

11/30/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110412

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110412

Work Order Summary

| | | | |
|------------------------|---|------------------|---|
| CLIENT: | Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 | BILL TO: | Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 |
| PHONE: | 808-586-4328 | P.O. # | 1077200 |
| FAX: | 808-586-7537 | PROJECT # | |
| DATE RECEIVED: | 10/20/2011 | CONTACT: | Kelly Buettner |
| DATE COMPLETED: | 11/21/2011 | | |

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> |
|-------------------|---------------------------|-------------------|
| 01A | HAFB-ST03-B58(422)(TO17A) | Modified TO-17 VI |
| 02A | HAFB-ST03-B58(422)(TO17B) | Modified TO-17 VI |
| 03A | HAFB-ST03-B58(492)(TO17A) | Modified TO-17 VI |
| 04A | HAFB-ST03-B58(492)(TO17B) | Modified TO-17 VI |
| 05A | HAFB-ST03-B59(388)(TO17A) | Modified TO-17 VI |
| 06A | HAFB-ST03-B59(388)(TO17B) | Modified TO-17 VI |
| 07A | GASOLINE#2(TO17A) | Modified TO-17 VI |
| 08A | GASOLINE#2(TO17B) | Modified TO-17 VI |
| 09A | DIESEL#3(TO17A) | Modified TO-17 VI |
| 10A | DIESEL#3(TO17B) | Modified TO-17 VI |
| 11A | HH-OU1C-MW10SG(TO17A) | Modified TO-17 VI |
| 12A | HH-OU1C-MW10SG(TO17B) | Modified TO-17 VI |
| 13A | HH-OU1C-OTNS1(TO17A) | Modified TO-17 VI |
| 14A | HH-OU1C-OTNS1(TO17B) | Modified TO-17 VI |
| 15A | HH-OU1C-MW22R(TO17A) | Modified TO-17 VI |
| 16A | HH-OU1C-MW22R(TO17B) | Modified TO-17 VI |
| 17A | GASOLINE-EXHAUST (TO17A) | Modified TO-17 VI |

Continued on next page

WORK ORDER #: 1110412

Work Order Summary

| | | | |
|------------------------|---|------------------|---|
| CLIENT: | Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 | BILL TO: | Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 |
| PHONE: | 808-586-4328 | P.O. # | 1077200 |
| FAX: | 808-586-7537 | PROJECT # | |
| DATE RECEIVED: | 10/20/2011 | CONTACT: | Kelly Buettner |
| DATE COMPLETED: | 11/21/2011 | | |

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> |
|-------------------|--------------------------|-------------------|
| 18A | GASOLINE-EXHAUST (TO17B) | Modified TO-17 VI |
| 19A | DIESEL-EXHAUST (TO17A) | Modified TO-17 VI |
| 20A | DIESEL-EXHAUST (TO17B) | Modified TO-17 VI |
| 21A | TRIP BLANK | Modified TO-17 VI |
| 22A | Lab Blank | Modified TO-17 VI |
| 22B | Lab Blank | Modified TO-17 VI |
| 22C | Lab Blank | Modified TO-17 VI |
| 23A | CCV | Modified TO-17 VI |
| 23B | CCV | Modified TO-17 VI |
| 23C | CCV | Modified TO-17 VI |
| 24A | LCS | Modified TO-17 VI |
| 24B | LCS | Modified TO-17 VI |
| 24C | LCS | Modified TO-17 VI |

CERTIFIED BY:



Laboratory Director

DATE: 11/30/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-17
Tetra Tech EM, Inc.
Workorder# 1110412

Twenty TO-17 VI Tube samples plus one Trip Blank were received on October 20, 2011. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for further separation.

Receiving Notes

The Chain of Custody (COC) information for the tube numbers associated with samples HH-OU1C-MW22R(TO17A), HH-OU1C-MW22R(TO17B), HH-OU1C-OTNS1(TO17A) and HH-OU1C-OTNS1(TO17B) did not match the information on the "Field Chart" provided by the client. Per client request, the information on the field chart was used to process and report the samples.

Analytical Notes

The samples were analyzed following MA DEP APH methodology with several modifications to accommodate the project requirements. Sorbent tubes were used for sample collection instead of canisters as specified by the method. Additionally, the GC column used for this extended MA APH range had a smaller film thickness than what was required by the MA APH method. This modification allowed for higher GC temperatures which were necessary to effectively extend the target compound range to C24. However, the column was unable to resolve several aliphatic calibration compounds from internal standard and target compounds. This required a slight modification in the specific hydrocarbons utilized to generate calibration factors for the C5-C8 aliphatic and C9-C12 aliphatic ranges. No significant impact on data quality is expected.

The aliphatic range C13-C18 recovered below the laboratory acceptance limits of 60-140% in the daily CCV analyzed on 10/31/11. Associated detections and non-detections were flagged to indicate a potential low bias. Several components recovered above laboratory acceptance criterion for the CCV. Associated detections were flagged as estimated values.

The field surrogate Toluene-d8 exceeded laboratory limits of 50-150% due to high level matrix interference in samples HAFB-ST03-B58(492)(TO-17A) and HAFB-ST03-B59(388)(TO17A).

TPH referenced to gasoline and diesel were calculated using a single point calibration.

Each sample was collected with 2 tubes in series with the TO17A designation indicating the front, or sample side, of the train. The TO17B designation indicated the back side of the train to measure potential breakthrough of unretained compounds. Several back tubes had detections above the reporting limit; however, the detections were not indicative of breakthrough based on the chromatographic pattern.

Samples GASOLINE#2(TO17A), HH-OU1C-MW10SG(TO17A) and HH-OU1C-MW22R(TO17A) were analyzed at a higher split than the calibration due to high concentrations. The split used resulted in a

4-fold dilution and the reporting limit and calibration range were raised accordingly.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-ST03-B58(422)(TO17A)

Lab ID#: 1110412-01A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.6 | 91 |
| Toluene | 3.8 | 76 | 14 | 290 |
| Ethyl Benzene | 4.3 | 86 | 56 | 1100 |
| m,p-Xylene | 4.3 | 86 | 960 | 19000 |
| o-Xylene | 4.3 | 86 | 130 | 2700 |
| Hexane | 3.5 | 70 | 28 | 550 |
| Naphthalene | 2.0 | 40 | 6.0 | 120 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 43000 | 850000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 30000 J | 590000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 180 | 3600 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 4600 | 92000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 79000 | 1600000 |
| TPH (Diesel Range) | 1000 | 20000 | 55000 | 1100000 |

Client Sample ID: HAFB-ST03-B58(422)(TO17B)

Lab ID#: 1110412-02A

No Detections Were Found.

Client Sample ID: HAFB-ST03-B58(492)(TO17A)

Lab ID#: 1110412-03A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|--------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 6.5 | 130 |
| Toluene | 3.8 | 76 | 15 | 300 |
| Ethyl Benzene | 4.3 | 86 | 60 | 1200 |
| m,p-Xylene | 4.3 | 86 | 1000 | 20000 |
| o-Xylene | 4.3 | 86 | 150 | 3000 |
| Hexane | 3.5 | 70 | 25 | 500 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 44000 | 870000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 32000 J | 640000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 350 | 7000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-ST03-B58(492)(TO17A)

Lab ID#: 1110412-03A

| | | | | |
|------------------------------------|------|-------|-------|---------|
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 5200 | 100000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 80000 | 1600000 |
| TPH (Diesel Range) | 1000 | 20000 | 58000 | 1200000 |

Client Sample ID: HAFB-ST03-B58(492)(TO17B)

Lab ID#: 1110412-04A

No Detections Were Found.

Client Sample ID: HAFB-ST03-B59(388)(TO17A)

Lab ID#: 1110412-05A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 3.5 | 70 |
| Toluene | 3.8 | 76 | 7.8 | 160 |
| Ethyl Benzene | 4.3 | 86 | 4.6 | 91 |
| m,p-Xylene | 4.3 | 86 | 71 | 1400 |
| o-Xylene | 4.3 | 86 | 15 | 300 |
| Hexane | 3.5 | 70 | 5.8 | 120 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 6100 | 120000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 1900 J | 38000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 120 | 2400 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 380 | 7600 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 9200 | 180000 |
| TPH (Diesel Range) | 1000 | 20000 | 8700 | 170000 |

Client Sample ID: HAFB-ST03-B59(388)(TO17B)

Lab ID#: 1110412-06A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|-------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.8 | 97 |
| Ethyl Benzene | 4.3 | 86 | 9.0 | 180 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 140 | 2800 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 71 J | 1400 J |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: GASOLINE#2(TO17A)

Lab ID#: 1110412-07A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 1300 | 3400 | 340000 |
| Toluene | 15 | 1500 | >8000 S | >800000 S |
| Ethyl Benzene | 17 | 1700 | 1900 | 190000 |
| m,p-Xylene | 17 | 1700 | 5700 E | 570000 E |
| o-Xylene | 17 | 1700 | 2200 | 220000 |
| Hexane | 14 | 1400 | 13000 E | 1300000 E |
| C5-C8 Aliphatic Hydrocarbons | 92 | 9200 | 160000 | 16000000 |
| C9-C10 Aromatic Hydrocarbons | 100 | 10000 | 3400 | 340000 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 400000 | 200000 | 20000000 |

Client Sample ID: GASOLINE#2(TO17B)

Lab ID#: 1110412-08A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|----------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 4.8 | 480 |

Client Sample ID: DIESEL#3(TO17A)

Lab ID#: 1110412-09A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 28 | 2800 |
| Toluene | 3.8 | 380 | 140 | 14000 |
| Ethyl Benzene | 4.3 | 430 | 31 | 3100 |
| m,p-Xylene | 4.3 | 430 | 87 | 8700 |
| o-Xylene | 4.3 | 430 | 35 | 3500 |
| Hexane | 3.5 | 350 | 140 | 14000 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 4700 | 470000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | 1900 J | 190000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | 780 | 78000 |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | 230 | 23000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 11000 | 1100000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: DIESEL#3(TO17A)

Lab ID#: 1110412-09A

| | | | | |
|--------------------|------|--------|-------|---------|
| TPH (Diesel Range) | 1000 | 100000 | 20000 | 2000000 |
|--------------------|------|--------|-------|---------|

Client Sample ID: DIESEL#3(TO17B)

Lab ID#: 1110412-10A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------|--------------------|-----------------------|----------------|-------------------|
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 110 | 11000 |

Client Sample ID: HH-OU1C-MW10SG(TO17A)

Lab ID#: 1110412-11A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 510 | 10000 |
| Toluene | 15 | 300 | 400 | 8000 |
| Ethyl Benzene | 17 | 340 | 400 | 8000 |
| m,p-Xylene | 17 | 340 | 290 | 5800 |
| o-Xylene | 17 | 340 | 85 | 1700 |
| Hexane | 14 | 280 | 26000 E | 520000 E |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 1800000 | 35000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 95000 | 1900000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 640 J | 13000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 1600 | 31000 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 1500000 | 30000000 |
| TPH (Diesel Range) | 4000 | 80000 | 8300 | 170000 |

Client Sample ID: HH-OU1C-MW10SG(TO17B)

Lab ID#: 1110412-12A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|----------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 5.6 | 110 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HH-OU1C-OTNS1(TO17A)

Lab ID#: 1110412-13A

No Detections Were Found.

Client Sample ID: HH-OU1C-OTNS1(TO17B)

Lab ID#: 1110412-14A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|----------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.2 | 85 |

Client Sample ID: HH-OU1C-MW22R(TO17A)

Lab ID#: 1110412-15A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 180 | 3600 |
| Toluene | 15 | 300 | 150 | 3000 |
| Ethyl Benzene | 17 | 340 | 190 | 3800 |
| m,p-Xylene | 17 | 340 | 220 | 4400 |
| o-Xylene | 17 | 340 | 79 | 1600 |
| Hexane | 14 | 280 | 14000 E | 280000 E |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 980000 | 20000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 140000 | 2800000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 5900 J | 120000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 5400 | 110000 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 1400000 | 29000000 |
| TPH (Diesel Range) | 4000 | 80000 | 36000 | 710000 |

Client Sample ID: HH-OU1C-MW22R(TO17B)

Lab ID#: 1110412-16A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 3.8 | 76 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 46 | 930 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 2000 | 39000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: GASOLINE-EXHAUST (TO17A)

Lab ID#: 1110412-17A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 39 | 3900 |
| Toluene | 3.8 | 380 | 27 | 2700 |
| Ethyl Benzene | 4.3 | 430 | 14 | 1400 |
| m,p-Xylene | 4.3 | 430 | 11 | 1100 |
| o-Xylene | 4.3 | 430 | 4.6 | 460 |
| Hexane | 3.5 | 350 | 11 | 1100 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 340 | 34000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | 340 J | 34000 J |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 1600 | 160000 |
| TPH (Diesel Range) | 1000 | 100000 | 3100 | 310000 |

Client Sample ID: GASOLINE-EXHAUST (TO17B)

Lab ID#: 1110412-18A

No Detections Were Found.

Client Sample ID: DIESEL-EXHAUST (TO17A)

Lab ID#: 1110412-19A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|--------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 4.3 | 430 |
| TPH (Diesel Range) | 1000 | 100000 | 1600 | 160000 |

Client Sample ID: DIESEL-EXHAUST (TO17B)

Lab ID#: 1110412-20A

No Detections Were Found.

Client Sample ID: TRIP BLANK

Lab ID#: 1110412-21A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|----------|--------------------|-----------------------|----------------|-------------------|
|----------|--------------------|-----------------------|----------------|-------------------|

Summary of Detected Compounds
EPA METHOD TO-17

Client Sample ID: TRIP BLANK

Lab ID#: 1110412-21A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|-------------------------------|----------------------------|-------------------------------|------------------------|---------------------------|
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 64 | 1300 |

Client Sample ID: HAFB-ST03-B58(422)(TO17A)

Lab ID#: 1110412-01A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102821 | Date of Extraction: NA | Date of Collection: 10/14/11 10:31:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 09:02 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.6 | 91 |
| Toluene | 3.8 | 76 | 14 | 290 |
| Ethyl Benzene | 4.3 | 86 | 56 | 1100 |
| m,p-Xylene | 4.3 | 86 | 960 | 19000 |
| o-Xylene | 4.3 | 86 | 130 | 2700 |
| Hexane | 3.5 | 70 | 28 | 550 |
| Naphthalene | 2.0 | 40 | 6.0 | 120 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 43000 | 850000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 30000 J | 590000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 180 | 3600 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 4600 | 92000 |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 79000 | 1600000 |
| TPH (Diesel Range) | 1000 | 20000 | 55000 | 1100000 |

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 149 | 50-150 |
| Naphthalene-d8 | 136 | 50-150 |

Client Sample ID: HAFB-ST03-B58(422)(TO17B)

Lab ID#: 1110412-02A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102730 | Date of Extraction: NA | Date of Collection: 10/14/11 10:31:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 03:23 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 119 | 50-150 |
| Naphthalene-d8 | 119 | 50-150 |

Client Sample ID: HAFB-ST03-B58(492)(TO17A)

Lab ID#: 1110412-03A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102820 | Date of Extraction: NA | Date of Collection: 10/14/11 10:50:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 08:26 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 6.5 | 130 |
| Toluene | 3.8 | 76 | 15 | 300 |
| Ethyl Benzene | 4.3 | 86 | 60 | 1200 |
| m,p-Xylene | 4.3 | 86 | 1000 | 20000 |
| o-Xylene | 4.3 | 86 | 150 | 3000 |
| Hexane | 3.5 | 70 | 25 | 500 |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 44000 | 870000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 32000 J | 640000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 350 | 7000 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 5200 | 100000 |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 80000 | 1600000 |
| TPH (Diesel Range) | 1000 | 20000 | 58000 | 1200000 |

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 154 Q | 50-150 |
| Naphthalene-d8 | 140 | 50-150 |

Client Sample ID: HAFB-ST03-B58(492)(TO17B)

Lab ID#: 1110412-04A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102731 | Date of Extraction: NA | Date of Collection: 10/14/11 10:50:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 03:59 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 119 | 50-150 |
| Naphthalene-d8 | 128 | 50-150 |

Client Sample ID: HAFB-ST03-B59(388)(TO17A)

Lab ID#: 1110412-05A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102819 | Date of Extraction: NA | Date of Collection: 10/14/11 11:16:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 07:49 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|-----------------|--------------------|--------------|----------------|
| Benzene | 3.2 | 64 | 3.5 | 70 |
| Toluene | 3.8 | 76 | 7.8 | 160 |
| Ethyl Benzene | 4.3 | 86 | 4.6 | 91 |
| m,p-Xylene | 4.3 | 86 | 71 | 1400 |
| o-Xylene | 4.3 | 86 | 15 | 300 |
| Hexane | 3.5 | 70 | 5.8 | 120 |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 6100 | 120000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 1900 J | 38000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 120 | 2400 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 380 | 7600 |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 9200 | 180000 |
| TPH (Diesel Range) | 1000 | 20000 | 8700 | 170000 |

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Q = Exceeds Quality Control limits, possibly due to matrix effects.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 164 Q | 50-150 |
| Naphthalene-d8 | 126 | 50-150 |

Client Sample ID: HAFB-ST03-B59(388)(TO17B)

Lab ID#: 1110412-06A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102729 | Date of Extraction: NA | Date of Collection: 10/14/11 11:16:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 02:46 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.8 | 97 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | 9.0 | 180 |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 140 | 2800 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 71 J | 1400 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 113 | 50-150 |
| Naphthalene-d8 | 126 | 50-150 |

Client Sample ID: GASOLINE#2(TO17A)

Lab ID#: 1110412-07A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103129 | Date of Extraction: NA | Date of Collection: 10/18/11 8:45:00 AM |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 02:43 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 13 | 1300 | 3400 | 340000 |
| Toluene | 15 | 1500 | >8000 S | >800000 S |
| Ethyl Benzene | 17 | 1700 | 1900 | 190000 |
| m,p-Xylene | 17 | 1700 | 5700 E | 570000 E |
| o-Xylene | 17 | 1700 | 2200 | 220000 |
| Hexane | 14 | 1400 | 13000 E | 1300000 E |
| Naphthalene | 8.0 | 800 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 9200 | 160000 | 16000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 14000 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 400 | 40000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 100 | 10000 | 3400 | 340000 |
| C11-C16 Aromatic Hydrocarbons | 400 | 40000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 400000 | 200000 | 20000000 |
| TPH (Diesel Range) | 4000 | 400000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0100

S = Saturated peak; data reported as estimated.

E = Exceeds instrument calibration range.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 102 | 50-150 |
| Naphthalene-d8 | 101 | 50-150 |

Client Sample ID: GASOLINE#2(TO17B)

Lab ID#: 1110412-08A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102732 | Date of Extraction: NA | Date of Collection: 10/18/11 8:45:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 04:36 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 4.8 | 480 |
| Toluene | 3.8 | 380 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 430 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| Hexane | 3.5 | 350 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 100000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 106 | 50-150 |
| Naphthalene-d8 | 102 | 50-150 |

Client Sample ID: DIESEL#3(TO17A)

Lab ID#: 1110412-09A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102824 | Date of Extraction: NA | Date of Collection: 10/18/11 8:46:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 10:52 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|-----------------|--------------------|--------------|----------------|
| Benzene | 3.2 | 320 | 28 | 2800 |
| Toluene | 3.8 | 380 | 140 | 14000 |
| Ethyl Benzene | 4.3 | 430 | 31 | 3100 |
| m,p-Xylene | 4.3 | 430 | 87 | 8700 |
| o-Xylene | 4.3 | 430 | 35 | 3500 |
| Hexane | 3.5 | 350 | 140 | 14000 |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 4700 | 470000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | 1900 J | 190000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | 780 | 78000 |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | 230 | 23000 |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 11000 | 1100000 |
| TPH (Diesel Range) | 1000 | 100000 | 20000 | 2000000 |

Air Sample Volume(L): 0.0100

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 122 | 50-150 |
| Naphthalene-d8 | 101 | 50-150 |

Client Sample ID: DIESEL#3(TO17B)

Lab ID#: 1110412-10A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102733 | Date of Extraction: NA | Date of Collection: 10/18/11 8:46:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 05:13 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | Not Detected | Not Detected |
| Toluene | 3.8 | 380 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 430 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| Hexane | 3.5 | 350 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 110 | 11000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 100000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 107 | 50-150 |
| Naphthalene-d8 | 106 | 50-150 |

Client Sample ID: HH-OU1C-MW10SG(TO17A)

Lab ID#: 1110412-11A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103127 | Date of Extraction: NA | Date of Collection: 10/18/11 11:52:00 A |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 01:35 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 510 | 10000 |
| Toluene | 15 | 300 | 400 | 8000 |
| Ethyl Benzene | 17 | 340 | 400 | 8000 |
| m,p-Xylene | 17 | 340 | 290 | 5800 |
| o-Xylene | 17 | 340 | 85 | 1700 |
| Hexane | 14 | 280 | 26000 E | 520000 E |
| Naphthalene | 8.0 | 160 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 1800000 | 35000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 95000 | 1900000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 640 J | 13000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 1600 | 31000 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 1500000 | 30000000 |
| TPH (Diesel Range) | 4000 | 80000 | 8300 | 170000 |

Air Sample Volume(L): 0.0500

E = Exceeds instrument calibration range.

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 116 | 50-150 |
| Naphthalene-d8 | 140 | 50-150 |

Client Sample ID: HH-OU1C-MW10SG(TO17B)

Lab ID#: 1110412-12A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102817 | Date of Extraction: NA | Date of Collection: 10/18/11 11:52:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 06:36 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 5.6 | 110 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 126 | 50-150 |
| Naphthalene-d8 | 84 | 50-150 |

Client Sample ID: HH-OU1C-OTNS1(TO17A)

Lab ID#: 1110412-13A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102816 | Date of Extraction: NA | Date of Collection: 10/18/11 11:10:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 05:59 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 116 | 50-150 |
| Naphthalene-d8 | 75 | 50-150 |

Client Sample ID: HH-OU1C-OTNS1(TO17B)

Lab ID#: 1110412-14A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102727 | Date of Extraction: NA | Date of Collection: 10/18/11 11:10:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 01:32 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.2 | 85 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 83 | 50-150 |
| Naphthalene-d8 | 82 | 50-150 |

Client Sample ID: HH-OU1C-MW22R(TO17A)

Lab ID#: 1110412-15A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103128 | Date of Extraction: NA | Date of Collection: 10/18/11 11:32:00 A |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 02:09 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 180 | 3600 |
| Toluene | 15 | 300 | 150 | 3000 |
| Ethyl Benzene | 17 | 340 | 190 | 3800 |
| m,p-Xylene | 17 | 340 | 220 | 4400 |
| o-Xylene | 17 | 340 | 79 | 1600 |
| Hexane | 14 | 280 | 14000 E | 280000 E |
| Naphthalene | 8.0 | 160 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 980000 | 20000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 140000 | 2800000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | 5900 J | 120000 J |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 5400 | 110000 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 1400000 | 29000000 |
| TPH (Diesel Range) | 4000 | 80000 | 36000 | 710000 |

Air Sample Volume(L): 0.0500

E = Exceeds instrument calibration range.

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 53 | 50-150 |
| Naphthalene-d8 | 119 | 50-150 |

Client Sample ID: HH-OU1C-MW22R(TO17B)

Lab ID#: 1110412-16A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102822 | Date of Extraction: NA | Date of Collection: 10/18/11 11:32:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 09:39 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 3.8 | 76 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 46 | 930 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 2000 | 39000 |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 121 | 50-150 |
| Naphthalene-d8 | 98 | 50-150 |

Client Sample ID: GASOLINE-EXHAUST (TO17A)

Lab ID#: 1110412-17A

EPA METHOD TO-17

| | | | |
|---------------------|----------------|-------------------------------|--|
| File Name: | j102828 | Date of Extraction: NA | Date of Collection: 10/18/11 8:53:00 AM |
| Dil. Factor: | 1.00 | | Date of Analysis: 10/29/11 01:18 AM |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|----------------------------|-------------------------------|------------------------|---------------------------|
| Benzene | 3.2 | 320 | 39 | 3900 |
| Toluene | 3.8 | 380 | 27 | 2700 |
| Ethyl Benzene | 4.3 | 430 | 14 | 1400 |
| m,p-Xylene | 4.3 | 430 | 11 | 1100 |
| o-Xylene | 4.3 | 430 | 4.6 | 460 |
| Hexane | 3.5 | 350 | 11 | 1100 |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | 340 | 34000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | 340 J | 34000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | 1600 | 160000 |
| TPH (Diesel Range) | 1000 | 100000 | 3100 | 310000 |

Air Sample Volume(L): 0.0100

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|-------------------|------------------|--------------------------|
| Toluene-d8 | 140 | 50-150 |
| Naphthalene-d8 | 118 | 50-150 |

Client Sample ID: GASOLINE-EXHAUST (TO17B)

Lab ID#: 1110412-18A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102734 | Date of Extraction: NA | Date of Collection: 10/18/11 8:53:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 05:50 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | Not Detected | Not Detected |
| Toluene | 3.8 | 380 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 430 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| Hexane | 3.5 | 350 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 100000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 109 | 50-150 |
| Naphthalene-d8 | 102 | 50-150 |

Client Sample ID: DIESEL-EXHAUST (TO17A)

Lab ID#: 1110412-19A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102825 | Date of Extraction: NA | Date of Collection: 10/18/11 8:59:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 11:29 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | 4.3 | 430 |
| Toluene | 3.8 | 380 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 430 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| Hexane | 3.5 | 350 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 100000 | 1600 | 160000 |

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 131 | 50-150 |
| Naphthalene-d8 | 111 | 50-150 |

Client Sample ID: DIESEL-EXHAUST (TO17B)

Lab ID#: 1110412-20A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102728 | Date of Extraction: NA | Date of Collection: 10/18/11 8:59:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 02:08 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 320 | Not Detected | Not Detected |
| Toluene | 3.8 | 380 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 430 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 430 | Not Detected | Not Detected |
| Hexane | 3.5 | 350 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 200 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 2300 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 3500 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 2500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 10000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 100000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 100000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0100

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 120 | 50-150 |
| Naphthalene-d8 | 120 | 50-150 |

Client Sample ID: TRIP BLANK

Lab ID#: 1110412-21A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j103113 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 04:30 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 64 | 1300 |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 89 | 50-150 |
| Naphthalene-d8 | 109 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110412-22A

EPA METHOD TO-17

| | | | |
|--------------|----------|-------------------------------------|------------------------|
| File Name: | j102709A | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 02:32 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 89 | 50-150 |
| Naphthalene-d8 | 100 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110412-22B

EPA METHOD TO-17

| | | | |
|--------------|----------|-------------------------------------|------------------------|
| File Name: | j102813A | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 04:18 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 107 | 50-150 |
| Naphthalene-d8 | 91 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110412-22C

EPA METHOD TO-17

| | | | |
|--------------|----------|-------------------------------------|------------------------|
| File Name: | j103112A | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 03:52 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 98 | 50-150 |
| Naphthalene-d8 | 118 | 50-150 |

Client Sample ID: CCV

Lab ID#: 1110412-23A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102706 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 12:30 PM | |

| Compound | %Recovery |
|------------------------------------|-----------|
| Benzene | 92 |
| Toluene | 112 |
| Ethyl Benzene | 128 |
| m,p-Xylene | 125 |
| o-Xylene | 131 Q |
| Hexane | 92 |
| Naphthalene | 78 |
| C5-C8 Aliphatic Hydrocarbons | 94 |
| C9-C12 Aliphatic Hydrocarbons | 138 Q |
| C13-C18 Aliphatic Hydrocarbons | 65 |
| C9-C10 Aromatic Hydrocarbons | 143 Q |
| C11-C16 Aromatic Hydrocarbons | 118 |
| Total TPH (C5-C24) ref to Gasoline | 93 |
| TPH (Diesel Range) | 100 |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 71 | 50-150 |
| Naphthalene-d8 | 112 | 50-150 |

Client Sample ID: CCV

Lab ID#: 1110412-23B

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102806 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 11:05 AM | |

| Compound | %Recovery |
|------------------------------------|-----------|
| Benzene | 84 |
| Toluene | 98 |
| Ethyl Benzene | 106 |
| m,p-Xylene | 106 |
| o-Xylene | 111 |
| Hexane | 108 |
| Naphthalene | 117 |
| C5-C8 Aliphatic Hydrocarbons | 108 |
| C9-C12 Aliphatic Hydrocarbons | 171 Q |
| C13-C18 Aliphatic Hydrocarbons | 83 |
| C9-C10 Aromatic Hydrocarbons | 125 |
| C11-C16 Aromatic Hydrocarbons | 64 |
| Total TPH (C5-C24) ref to Gasoline | 100 |
| TPH (Diesel Range) | 109 |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 110 | 50-150 |
| Naphthalene-d8 | 132 | 50-150 |

Client Sample ID: CCV

Lab ID#: 1110412-23C

EPA METHOD TO-17

| | | | |
|---------------------|----------------|--|-------------------------------|
| File Name: | j103102 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 08:21 AM | |

| Compound | %Recovery |
|------------------------------------|------------------|
| Benzene | 77 |
| Toluene | 90 |
| Ethyl Benzene | 95 |
| m,p-Xylene | 95 |
| o-Xylene | 96 |
| Hexane | 90 |
| Naphthalene | 137 Q |
| C5-C8 Aliphatic Hydrocarbons | 82 |
| C9-C12 Aliphatic Hydrocarbons | 121 |
| C13-C18 Aliphatic Hydrocarbons | 57 Q |
| C9-C10 Aromatic Hydrocarbons | 106 |
| C11-C16 Aromatic Hydrocarbons | 95 |
| Total TPH (C5-C24) ref to Gasoline | 128 |
| TPH (Diesel Range) | 100 |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110412-24A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102707 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/27/11 01:05 PM | |

| Compound | %Recovery |
|--------------------------------|-----------|
| Benzene | 82 |
| Toluene | 122 |
| Ethyl Benzene | 134 |
| m,p-Xylene | 140 |
| o-Xylene | 140 |
| Hexane | 88 |
| Naphthalene | 123 |
| C5-C8 Aliphatic Hydrocarbons | 112 |
| C9-C12 Aliphatic Hydrocarbons | 138 |
| C13-C18 Aliphatic Hydrocarbons | 56 |
| C9-C10 Aromatic Hydrocarbons | 154 Q |
| C11-C16 Aromatic Hydrocarbons | 153 Q |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 82 | 50-150 |
| Naphthalene-d8 | 125 | 50-150 |

Client Sample ID: LCS

Lab ID#: 1110412-24B

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102807 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 11:52 AM | |

| Compound | %Recovery |
|--------------------------------|-----------|
| Benzene | 89 |
| Toluene | 126 |
| Ethyl Benzene | 130 |
| m,p-Xylene | 135 |
| o-Xylene | 128 |
| Hexane | 131 |
| Naphthalene | 112 |
| C5-C8 Aliphatic Hydrocarbons | 122 |
| C9-C12 Aliphatic Hydrocarbons | 146 |
| C13-C18 Aliphatic Hydrocarbons | 59 |
| C9-C10 Aromatic Hydrocarbons | 141 |
| C11-C16 Aromatic Hydrocarbons | 116 |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 115 | 50-150 |
| Naphthalene-d8 | 131 | 50-150 |

Client Sample ID: LCS

Lab ID#: 1110412-24C

EPA METHOD TO-17

| | | | |
|---------------------|----------------|--|-------------------------------|
| File Name: | j103105 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 11:35 AM | |

| Compound | %Recovery |
|--------------------------------|-----------|
| Benzene | 75 |
| Toluene | 120 |
| Ethyl Benzene | 127 |
| m,p-Xylene | 134 |
| o-Xylene | 132 |
| Hexane | 86 |
| Naphthalene | 137 |
| C5-C8 Aliphatic Hydrocarbons | 94 |
| C9-C12 Aliphatic Hydrocarbons | 134 |
| C13-C18 Aliphatic Hydrocarbons | 59 |
| C9-C10 Aromatic Hydrocarbons | 146 |
| C11-C16 Aromatic Hydrocarbons | 198 Q |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 89 | 50-150 |
| Naphthalene-d8 | 119 | 50-150 |

12/1/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: HI DOH Vapor
Project #:
Workorder #: 1110433

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110433

Work Order Summary

| | | | |
|------------------------|---|------------------|---|
| CLIENT: | Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 | BILL TO: | Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 |
| PHONE: | 808-586-4328 | P.O. # | 1077200 |
| FAX: | 808-586-7537 | PROJECT # | HI DOH Vapor |
| DATE RECEIVED: | 10/20/2011 | CONTACT: | Kelly Buettner |
| DATE COMPLETED: | 11/23/2011 | | |

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> |
|-------------------|---------------------------|-------------------|
| 01A | HAFB-VP26-B05(18)(TO17A) | Modified TO-17 VI |
| 02A | HAFB-VP26-B05(18)(TO17B) | Modified TO-17 VI |
| 03A | HAFB-VP26-B05(24)(TO17A) | Modified TO-17 VI |
| 04A | HAFB-VP26-B05(24)(TO17B) | Modified TO-17 VI |
| 05A | HAFB-VP26-B07(20)(TO17A) | Modified TO-17 VI |
| 06A | HAFB-VP26-B07(20)(TO17B) | Modified TO-17 VI |
| 07A | HAFB-VP26-B07(25)(TO17A) | Modified TO-17 VI |
| 08A | HAFB-VP26-B07(25)(TO17B) | Modified TO-17 VI |
| 09A | HAFB-ST03-B58(347)(TO17A) | Modified TO-17 VI |
| 10A | HAFB-ST03-B58(347)(TO17B) | Modified TO-17 VI |
| 11A | TRIP BLANK | Modified TO-17 VI |
| 12A | Lab Blank | Modified TO-17 VI |
| 12B | Lab Blank | Modified TO-17 VI |
| 13A | CCV | Modified TO-17 VI |
| 13B | CCV | Modified TO-17 VI |
| 14A | LCS | Modified TO-17 VI |
| 14B | LCS | Modified TO-17 VI |

CERTIFIED BY:



Laboratory Director

DATE: 12/01/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE
EPA Method TO-17
Tetra Tech EM, Inc.
Workorder# 1110433**

Ten TO-17 VI Tube samples were received on October 20, 2011. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for further separation.

Receiving Notes

The samples arrived at the laboratory without a Chain of Custody (COC). The client subsequently provided the COC by e-mail on 10/21/11.

Analytical Notes

The samples were analyzed following MA DEP APH methodology with several modifications to accommodate the project requirements. Sorbent tubes were used for sample collection instead of canisters as specified by the method. Additionally, the GC column used for this extended MA APH range had a smaller film thickness than what was required by the MA APH method. This modification allowed for higher GC temperatures which were necessary to effectively extend the target compound range to C24. However, the column was unable to resolve several aliphatic calibration compounds from internal standard and target compounds. This required a slight modification in the specific hydrocarbons utilized to generate calibration factors for the C5-C8 aliphatic and C9-C12 aliphatic ranges. No significant impact on data quality is expected.

The aliphatic range C13-C18 recovered below the laboratory acceptance limits of 60-140% in the daily CCV analyzed on 10/31/11. Associated detections and non-detections were flagged to indicate a potential low bias. The C9-C12 Aliphatic range recovered above laboratory acceptance criterion for the CCV on 10/28/11. Associated detections were flagged as estimated values.

Due to severe hydrocarbon interference, the field surrogate Toluene-d8 could not be reliably quantified for samples HAFB-VP26-B05(18)(TO-17A), HAFB-VP26-B05(24)(TO-17A), HAFB-VP26-B07(20)(TO-17A), and HAFB-VP26-B07(25)(TO-17A). Recovery was reported as 0% and was flagged as outside laboratory criterion of 50-150%.

Additionally, the significant interference in sample HAFB-VP26-B05(24)(TO17A) resulted in poor recovery of the internal standard 1,4-Difluorobenzene. Recovery was below the method acceptance criterion of 50% with a recovery of 22%. Benzene is quantified using this internal standard and is J-flagged to indicate bias. Additionally Benzene and Hexane are saturated and significant matrix is interfering with accurate quantification. The S-flag indicates saturation and the M-flag indicates matrix. The TPH-gasoline is saturated as well.

TPH referenced to gasoline and Diesel were calculated using a single point calibration.

Each sample was collected with 2 tubes in series with the TO17A designation indicating the front, or sample side, of the train. The TO17B designation indicated the back side of the train to measure potential breakthrough of unretained compounds. Several back tubes had detections above the reporting limit; however, the detections were not indicative of breakthrough based on the chromatographic pattern.

Samples HAFB-VP26-B05(18)(TO-17A), HAFB-VP26-B05(24)(TO-17A), HAFB-VP26-B07(20)(TO-17A), and HAFB-VP26-B07(25)(TO-17A) were analyzed at a higher split than the calibration due to high concentrations. The split used resulted in a 4-fold dilution and the reporting limit and calibration range were raised accordingly.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-VP26-B05(18)(TO17A)

Lab ID#: 1110433-01A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 780 | 16000 |
| Ethyl Benzene | 17 | 340 | 490 | 9800 |
| m,p-Xylene | 17 | 340 | 58 | 1200 |
| o-Xylene | 17 | 340 | 18 | 360 |
| Hexane | 14 | 280 | 31000 E | 630000 E |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 610000 | 12000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 38000 | 750000 |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 460 | 9300 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 940000 | 19000000 |

Client Sample ID: HAFB-VP26-B05(18)(TO17B)

Lab ID#: 1110433-02A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 6.1 | 120 |
| m,p-Xylene | 4.3 | 86 | 5.1 | 100 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1600 | 33000 |

Client Sample ID: HAFB-VP26-B05(24)(TO17A)

Lab ID#: 1110433-03A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|-------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | >31000 SMJ | >620000 SMJ |
| Toluene | 15 | 300 | 1000 | 21000 |
| Ethyl Benzene | 17 | 340 | 260 | 5300 |
| m,p-Xylene | 17 | 340 | 210 | 4200 |
| o-Xylene | 17 | 340 | 28 | 560 |
| Hexane | 14 | 280 | >56000 SM | >1100000 SM |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 3200000 | 64000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 22000 | 430000 |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 870 | 17000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-VP26-B05(24)(TO17A)

Lab ID#: 1110433-03A

| | | | | |
|------------------------------------|------|-------|------------|-------------|
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | >1800000 S | >37000000 S |
|------------------------------------|------|-------|------------|-------------|

Client Sample ID: HAFB-VP26-B05(24)(TO17B)

Lab ID#: 1110433-04A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|-------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 5.7 | 110 |
| m,p-Xylene | 4.3 | 86 | 7.4 | 150 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 160 | 3200 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 310 | 6100 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 70 | 1400 |

Client Sample ID: HAFB-VP26-B07(20)(TO17A)

Lab ID#: 1110433-05A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 1700 | 35000 |
| Ethyl Benzene | 17 | 340 | 1400 | 27000 |
| m,p-Xylene | 17 | 340 | 50 | 990 |
| Hexane | 14 | 280 | 2900 | 59000 |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 670000 | 13000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 8900 | 180000 |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 270 | 5400 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 690000 | 14000000 |

Client Sample ID: HAFB-VP26-B07(20)(TO17B)

Lab ID#: 1110433-06A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------|--------------------|-----------------------|----------------|-------------------|
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 62 | 1200 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-VP26-B07(25)(TO17A)

Lab ID#: 1110433-07A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 13 | 260 | 1100 | 22000 |
| Toluene | 15 | 300 | 640 | 13000 |
| Ethyl Benzene | 17 | 340 | 490 | 9800 |
| m,p-Xylene | 17 | 340 | 120 | 2500 |
| o-Xylene | 17 | 340 | 36 | 720 |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 1500000 | 29000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 11000 | 220000 |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 260 | 5200 |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 1500000 | 29000000 |

Client Sample ID: HAFB-VP26-B07(25)(TO17B)

Lab ID#: 1110433-08A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|----------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 5.1 | 100 |

Client Sample ID: HAFB-ST03-B58(347)(TO17A)

Lab ID#: 1110433-09A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.0 | 81 |
| Toluene | 3.8 | 76 | 13 | 260 |
| Ethyl Benzene | 4.3 | 86 | 58 | 1200 |
| m,p-Xylene | 4.3 | 86 | 940 | 19000 |
| o-Xylene | 4.3 | 86 | 150 | 3000 |
| Hexane | 3.5 | 70 | 20 | 390 |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 42000 | 830000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 29000 J | 580000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 240 | 4800 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 5400 | 110000 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 79000 | 1600000 |

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: HAFB-ST03-B58(347)(TO17A)

Lab ID#: 1110433-09A

| | | | | |
|--------------------|------|-------|-------|---------|
| TPH (Diesel Range) | 1000 | 20000 | 62000 | 1200000 |
|--------------------|------|-------|-------|---------|

Client Sample ID: HAFB-ST03-B58(347)(TO17B)

Lab ID#: 1110433-10A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 13 | 250 |
| m,p-Xylene | 4.3 | 86 | 8.8 | 180 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1300 | 26000 |

Client Sample ID: TRIP BLANK

Lab ID#: 1110433-11A

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 6.8 | 140 |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1400 | 28000 |

Client Sample ID: HAFB-VP26-B05(18)(TO17A)

Lab ID#: 1110433-01A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103132 | Date of Extraction: NA | Date of Collection: 10/13/11 10:15:00 A |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 04:25 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 13 | 260 | 780 | 16000 |
| Toluene | 15 | 300 | Not Detected | Not Detected |
| Ethyl Benzene | 17 | 340 | 490 | 9800 |
| m,p-Xylene | 17 | 340 | 58 | 1200 |
| o-Xylene | 17 | 340 | 18 | 360 |
| Hexane | 14 | 280 | 31000 E | 630000 E |
| Naphthalene | 8.0 | 160 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 610000 | 12000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 38000 | 750000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 460 | 9300 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 940000 | 19000000 |
| TPH (Diesel Range) | 4000 | 80000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

E = Exceeds instrument calibration range.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 0 U Q | 50-150 |
| Naphthalene-d8 | 101 | 50-150 |

Client Sample ID: HAFB-VP26-B05(18)(TO17B)

Lab ID#: 1110433-02A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j103120 | Date of Extraction: NA | Date of Collection: 10/13/11 10:15:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 09:34 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | 6.1 | 120 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | 5.1 | 100 |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1600 | 33000 |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 90 | 50-150 |
| Naphthalene-d8 | 114 | 50-150 |

Client Sample ID: HAFB-VP26-B05(24)(TO17A)

Lab ID#: 1110433-03A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103131 | Date of Extraction: NA | Date of Collection: 10/13/11 10:48:00 A |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 03:51 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 13 | 260 | >31000 SMJ | >620000 SMJ |
| Toluene | 15 | 300 | 1000 | 21000 |
| Ethyl Benzene | 17 | 340 | 260 | 5300 |
| m,p-Xylene | 17 | 340 | 210 | 4200 |
| o-Xylene | 17 | 340 | 28 | 560 |
| Hexane | 14 | 280 | >56000 SM | >1100000 SM |
| Naphthalene | 8.0 | 160 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 3200000 | 64000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 22000 | 430000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 870 | 17000 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | >1800000 S | >37000000 S |
| TPH (Diesel Range) | 4000 | 80000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

S = Saturated peak; data reported as estimated.

M = Reported value may be biased due to apparent matrix interferences.

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 0 U Q | 50-150 |
| Naphthalene-d8 | 106 | 50-150 |

Client Sample ID: HAFB-VP26-B05(24)(TO17B)

Lab ID#: 1110433-04A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------|---|
| File Name: | j103116 | Date of Extraction: NA | Date of Collection: 10/13/11 10:48:00 A |
| Dil. Factor: | 1.00 | | Date of Analysis: 10/31/11 06:59 PM |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | 5.7 | 110 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | 7.4 | 150 |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 160 | 3200 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 310 | 6100 |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 70 | 1400 |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 100 | 50-150 |
| Naphthalene-d8 | 109 | 50-150 |

Client Sample ID: HAFB-VP26-B07(20)(TO17A)

Lab ID#: 1110433-05A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103133 | Date of Extraction: NA | Date of Collection: 10/13/11 11:30:00 A |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 04:59 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 13 | 260 | 1700 | 35000 |
| Toluene | 15 | 300 | Not Detected | Not Detected |
| Ethyl Benzene | 17 | 340 | 1400 | 27000 |
| m,p-Xylene | 17 | 340 | 50 | 990 |
| o-Xylene | 17 | 340 | Not Detected | Not Detected |
| Hexane | 14 | 280 | 2900 | 59000 |
| Naphthalene | 8.0 | 160 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 670000 | 13000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 8900 | 180000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 270 | 5400 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 690000 | 14000000 |
| TPH (Diesel Range) | 4000 | 80000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 0 U Q | 50-150 |
| Naphthalene-d8 | 124 | 50-150 |

Client Sample ID: HAFB-VP26-B07(20)(TO17B)

Lab ID#: 1110433-06A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102831 | Date of Extraction: NA | Date of Collection: 10/13/11 11:30:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/29/11 03:07 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 62 | 1200 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 114 | 50-150 |
| Naphthalene-d8 | 101 | 50-150 |

Client Sample ID: HAFB-VP26-B07(25)(TO17A)

Lab ID#: 1110433-07A

EPA METHOD TO-17

| | | | |
|--------------|---------|------------------------------------|---|
| File Name: | j103130 | Date of Extraction: NA | Date of Collection: 10/13/11 11:52:00 A |
| Dil. Factor: | 4.00 | Date of Analysis: 11/1/11 03:17 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 13 | 260 | 1100 | 22000 |
| Toluene | 15 | 300 | 640 | 13000 |
| Ethyl Benzene | 17 | 340 | 490 | 9800 |
| m,p-Xylene | 17 | 340 | 120 | 2500 |
| o-Xylene | 17 | 340 | 36 | 720 |
| Hexane | 14 | 280 | Not Detected | Not Detected |
| Naphthalene | 8.0 | 160 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 92 | 1800 | 1500000 | 29000000 |
| C9-C12 Aliphatic Hydrocarbons | 140 | 2800 | 11000 | 220000 |
| C13-C18 Aliphatic Hydrocarbons | 400 | 8000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 100 | 2000 | 260 | 5200 |
| C11-C16 Aromatic Hydrocarbons | 400 | 8000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 4000 | 80000 | 1500000 | 29000000 |
| TPH (Diesel Range) | 4000 | 80000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Q = Exceeds Quality Control limits.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 0 U Q | 50-150 |
| Naphthalene-d8 | 107 | 50-150 |

Client Sample ID: HAFB-VP26-B07(25)(TO17B)

Lab ID#: 1110433-08A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j103121 | Date of Extraction: NA | Date of Collection: 10/13/11 11:52:00 A |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 10:10 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | 5.1 | 100 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 97 | 50-150 |
| Naphthalene-d8 | 106 | 50-150 |

Client Sample ID: HAFB-ST03-B58(347)(TO17A)

Lab ID#: 1110433-09A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j102830 | Date of Extraction: NA | Date of Collection: 10/14/11 9:47:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/29/11 02:31 AM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | 4.0 | 81 |
| Toluene | 3.8 | 76 | 13 | 260 |
| Ethyl Benzene | 4.3 | 86 | 58 | 1200 |
| m,p-Xylene | 4.3 | 86 | 940 | 19000 |
| o-Xylene | 4.3 | 86 | 150 | 3000 |
| Hexane | 3.5 | 70 | 20 | 390 |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | 42000 | 830000 |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | 29000 J | 580000 J |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | 240 | 4800 |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | 5400 | 110000 |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 79000 | 1600000 |
| TPH (Diesel Range) | 1000 | 20000 | 62000 | 1200000 |

Air Sample Volume(L): 0.0500

J = Estimated value due to bias in the CCV.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 146 | 50-150 |
| Naphthalene-d8 | 142 | 50-150 |

Client Sample ID: HAFB-ST03-B58(347)(TO17B)

Lab ID#: 1110433-10A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|---|
| File Name: | j103122 | Date of Extraction: NA | Date of Collection: 10/14/11 9:47:00 AM |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 10:47 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | 13 | 250 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | 8.8 | 180 |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1300 | 26000 |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 90 | 50-150 |
| Naphthalene-d8 | 109 | 50-150 |

Client Sample ID: TRIP BLANK

Lab ID#: 1110433-11A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j103114 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 05:07 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | 6.8 | 140 |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | 1400 | 28000 |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: TO-17 VI Tube

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 112 | 50-150 |
| Naphthalene-d8 | 147 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110433-12A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102813 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 04:18 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 107 | 50-150 |
| Naphthalene-d8 | 91 | 50-150 |

Client Sample ID: Lab Blank

Lab ID#: 1110433-12B

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j103112 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 03:52 PM | |

| Compound | Rpt. Limit (ng) | Rpt. Limit (ug/m3) | Amount (ng) | Amount (ug/m3) |
|------------------------------------|--------------------|-----------------------|-----------------|-------------------|
| Benzene | 3.2 | 64 | Not Detected | Not Detected |
| Toluene | 3.8 | 76 | Not Detected | Not Detected |
| Ethyl Benzene | 4.3 | 86 | Not Detected | Not Detected |
| m,p-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| o-Xylene | 4.3 | 86 | Not Detected | Not Detected |
| Hexane | 3.5 | 70 | Not Detected | Not Detected |
| Naphthalene | 2.0 | 40 | Not Detected | Not Detected |
| C5-C8 Aliphatic Hydrocarbons | 23 | 460 | Not Detected | Not Detected |
| C9-C12 Aliphatic Hydrocarbons | 35 | 700 | Not Detected | Not Detected |
| C13-C18 Aliphatic Hydrocarbons | 100 | 2000 | Not Detected UJ | Not Detected UJ |
| C9-C10 Aromatic Hydrocarbons | 25 | 500 | Not Detected | Not Detected |
| C11-C16 Aromatic Hydrocarbons | 100 | 2000 | Not Detected | Not Detected |
| Total TPH (C5-C24) ref to Gasoline | 1000 | 20000 | Not Detected | Not Detected |
| TPH (Diesel Range) | 1000 | 20000 | Not Detected | Not Detected |

Air Sample Volume(L): 0.0500

UJ = Non-detected compound associated with low bias in the CCV and/or LCS.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|------------------|
| Toluene-d8 | 98 | 50-150 |
| Naphthalene-d8 | 118 | 50-150 |

Client Sample ID: CCV

Lab ID#: 1110433-13A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102806 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 11:05 AM | |

| Compound | %Recovery |
|------------------------------------|-----------|
| Benzene | 84 |
| Toluene | 98 |
| Ethyl Benzene | 106 |
| m,p-Xylene | 106 |
| o-Xylene | 111 |
| Hexane | 108 |
| Naphthalene | 117 |
| C5-C8 Aliphatic Hydrocarbons | 108 |
| C9-C12 Aliphatic Hydrocarbons | 171 Q |
| C13-C18 Aliphatic Hydrocarbons | 83 |
| C9-C10 Aromatic Hydrocarbons | 125 |
| C11-C16 Aromatic Hydrocarbons | 65 |
| Total TPH (C5-C24) ref to Gasoline | 100 |
| TPH (Diesel Range) | 109 |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 110 | 50-150 |
| Naphthalene-d8 | 132 | 50-150 |

Client Sample ID: CCV

Lab ID#: 1110433-13B

EPA METHOD TO-17

| | | | |
|---------------------|----------------|--|-------------------------------|
| File Name: | j103102 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 08:21 AM | |

| Compound | %Recovery |
|------------------------------------|-----------|
| Benzene | 77 |
| Toluene | 90 |
| Ethyl Benzene | 95 |
| m,p-Xylene | 95 |
| o-Xylene | 96 |
| Hexane | 90 |
| Naphthalene | 136 |
| C5-C8 Aliphatic Hydrocarbons | 82 |
| C9-C12 Aliphatic Hydrocarbons | 121 |
| C13-C18 Aliphatic Hydrocarbons | 57 Q |
| C9-C10 Aromatic Hydrocarbons | 106 |
| C11-C16 Aromatic Hydrocarbons | 95 |
| Total TPH (C5-C24) ref to Gasoline | 128 |
| TPH (Diesel Range) | 100 |

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110433-14A

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j102807 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/28/11 11:52 AM | |

| Compound | %Recovery |
|--------------------------------|-----------|
| Benzene | 89 |
| Toluene | 126 |
| Ethyl Benzene | 130 |
| m,p-Xylene | 135 Q |
| o-Xylene | 128 |
| Hexane | 131 Q |
| Naphthalene | 112 |
| C5-C8 Aliphatic Hydrocarbons | 122 |
| C9-C12 Aliphatic Hydrocarbons | 146 |
| C13-C18 Aliphatic Hydrocarbons | 59 |
| C9-C10 Aromatic Hydrocarbons | 141 |
| C11-C16 Aromatic Hydrocarbons | 116 |

Air Sample Volume(L): 1.00

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 115 | 50-150 |
| Naphthalene-d8 | 131 | 50-150 |

Client Sample ID: LCS

Lab ID#: 1110433-14B

EPA METHOD TO-17

| | | | |
|--------------|---------|-------------------------------------|------------------------|
| File Name: | j103105 | Date of Extraction: NA | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/31/11 11:35 AM | |

| Compound | %Recovery |
|--------------------------------|-----------|
| Benzene | 75 |
| Toluene | 120 |
| Ethyl Benzene | 127 |
| m,p-Xylene | 134 Q |
| o-Xylene | 132 Q |
| Hexane | 86 |
| Naphthalene | 137 |
| C5-C8 Aliphatic Hydrocarbons | 94 |
| C9-C12 Aliphatic Hydrocarbons | 134 |
| C13-C18 Aliphatic Hydrocarbons | 59 |
| C9-C10 Aromatic Hydrocarbons | 146 |
| C11-C16 Aromatic Hydrocarbons | 198 Q |

Air Sample Volume(L): 1.00

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

| Surrogates | %Recovery | Method Limits |
|----------------|-----------|---------------|
| Toluene-d8 | 89 | 50-150 |
| Naphthalene-d8 | 119 | 50-150 |

6/3/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Fishing Village
Project #:
Workorder #: 1105519C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 5/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1105519C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Fishing Village

DATE RECEIVED: 05/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/03/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------|----------------------|-------------------------------|---------------------------|
| 01A | FV-GP-01-HDOH | Modified ASTM D-1945 | 5.5 "Hg | 15 psi |
| 02A | FV-GP-06R-HDOH | Modified ASTM D-1945 | 4.5 "Hg | 15 psi |
| 03A | FV-GP-08-HDOH | Modified ASTM D-1945 | 2.0 "Hg | 15 psi |
| 04A | FV-GP-16R-HDOH | Modified ASTM D-1945 | 5.5 "Hg | 15 psi |
| 05A | FV-GP-17-HDOH | Modified ASTM D-1945 | 5.5 "Hg | 15 psi |
| 06A | G-IPB20-HDOH | Modified ASTM D-1945 | 6.5 "Hg | 15 psi |
| 07A | G-IPH11-HDOH | Modified ASTM D-1945 | 4.0 "Hg | 15 psi |
| 08A | G-IPL19-HDOH | Modified ASTM D-1945 | 5.0 "Hg | 15 psi |
| 09A | G-IP28-HDOH | Modified ASTM D-1945 | 9.5 "Hg | 15 psi |
| 10A | G-SG12-HDOH | Modified ASTM D-1945 | 4.0 "Hg | 15 psi |
| 11A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 11B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 12A | LCS | Modified ASTM D-1945 | NA | NA |
| 12AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



DATE: 06/03/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1105519C

Ten 1 Liter Summa Canister (MA APH Certified) samples were received on May 26, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|---|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD \leq 15%. All target analytes must be within the linear range of calibration (with the exception of O ₂ , N ₂ , and C ₆ + Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C₂-C₄ was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.

- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: FV-GP-01-HDOH

Lab ID#: 1105519C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.025 | 4.1 |
| Methane | 0.00025 | 0.20 |

Client Sample ID: FV-GP-06R-HDOH

Lab ID#: 1105519C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 2.6 |

Client Sample ID: FV-GP-08-HDOH

Lab ID#: 1105519C-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.022 | 3.6 |
| Methane | 0.00022 | 1.0 |

Client Sample ID: FV-GP-16R-HDOH

Lab ID#: 1105519C-04A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.025 | 1.5 |
| Methane | 0.00025 | 28 |

Client Sample ID: FV-GP-17-HDOH

Lab ID#: 1105519C-05A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.025 | 7.5 |
| Methane | 0.00025 | 8.4 |

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519C-06A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.026 | 0.056 |

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519C-07A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.023 | 28 |
| Methane | 0.00023 | 0.46 |

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519C-08A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 0.092 |
| Methane | 0.00024 | 0.00027 |

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519C-09A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.030 | 3.8 |
| Methane | 0.00030 | 0.26 |

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519C-10A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.023 | 20 |

Client Sample ID: FV-GP-01-HDOH

Lab ID#: 1105519C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9060129 | Date of Collection: 5/19/11 10:55:00 AM |
| Dil. Factor: | 2.47 | Date of Analysis: 6/1/11 05:07 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.025 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.025 | 4.1 |
| Methane | 0.00025 | 0.20 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-06R-HDOH

Lab ID#: 1105519C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9060130 | Date of Collection: 5/19/11 11:43:00 AM |
| Dil. Factor: | 2.38 | Date of Analysis: 6/1/11 05:29 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 2.6 |
| Methane | 0.00024 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-08-HDOH

Lab ID#: 1105519C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9060131 | Date of Collection: 5/19/11 10:27:00 AM |
| Dil. Factor: | 2.16 | Date of Analysis: 6/1/11 05:52 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.022 | Not Detected |
| Helium | 0.11 | Not Detected |
| Carbon Dioxide | 0.022 | 3.6 |
| Methane | 0.00022 | 1.0 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-16R-HDOH

Lab ID#: 1105519C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|--|
| File Name: | 9060132 | Date of Collection: 5/19/11 9:41:00 AM |
| Dil. Factor: | 2.47 | Date of Analysis: 6/1/11 06:15 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.025 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.025 | 1.5 |
| Methane | 0.00025 | 28 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP-17-HDOH

Lab ID#: 1105519C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9060133 | Date of Collection: 5/19/11 11:24:00 AM |
| Dil. Factor: | 2.47 | Date of Analysis: 6/1/11 06:37 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.025 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.025 | 7.5 |
| Methane | 0.00025 | 8.4 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IPB20-HDOH

Lab ID#: 1105519C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9060134 | Date of Collection: 5/20/11 7:52:00 AM |
| Dil. Factor: | 2.58 | Date of Analysis: 6/1/11 07:01 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.026 | Not Detected |
| Helium | 0.13 | Not Detected |
| Carbon Dioxide | 0.026 | 0.056 |
| Methane | 0.00026 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IPH11-HDOH

Lab ID#: 1105519C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|--|
| File Name: | 9060135 | Date of Collection: 5/20/11 7:37:00 AM |
| Dil. Factor: | 2.33 | Date of Analysis: 6/1/11 07:28 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.023 | 28 |
| Methane | 0.00023 | 0.46 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IPL19-HDOH

Lab ID#: 1105519C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|--|
| File Name: | 9060136 | Date of Collection: 5/20/01 8:38:00 AM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/1/11 08:20 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|----------------|--------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 0.092 |
| Methane | 0.00024 | 0.00027 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-IP28-HDOH

Lab ID#: 1105519C-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9060138 | Date of Collection: 5/20/11 8:35:00 AM |
| Dil. Factor: | 2.96 | Date of Analysis: 6/1/11 09:03 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.030 | Not Detected |
| Helium | 0.15 | Not Detected |
| Carbon Dioxide | 0.030 | 3.8 |
| Methane | 0.00030 | 0.26 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: G-SG12-HDOH

Lab ID#: 1105519C-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9060139 | Date of Collection: 5/20/11 9:21:00 AM |
| Dil. Factor: | 2.33 | Date of Analysis: 6/1/11 09:37 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.023 | 20 |
| Methane | 0.00023 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1105519C-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9060128 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/1/11 04:29 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1105519C-11B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9060127b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/1/11 04:06 PM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1105519C-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|-----------------------------------|
| File Name: | 9060151 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 12:15 PM |

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 103 |
| Methane | 98 |
| Ethane | 101 |
| Ethene | 99 |
| Butane | 101 |
| Acetylene | 95 |
| Propane | 95 |
| Isobutane | 101 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1105519C-12AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|-----------------------------------|
| File Name: | 9060152 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/2/11 12:37 PM |

| Compound | %Recovery |
|----------------|-----------|
| Helium | 95 |
| Carbon Dioxide | 102 |
| Methane | 97 |
| Ethane | 100 |
| Ethene | 98 |
| Acetylene | 93 |
| Propane | 94 |
| Butane | 99 |
| Isobutane | 99 |

Container Type: NA - Not Applicable

6/16/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

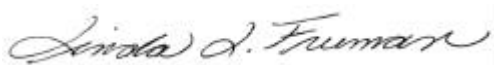
DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/16/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------|----------------------|-------------------------------|---------------------------|
| 01A | A-SV04-HDOH | Modified ASTM D-1945 | 3.0 "Hg | 15 psi |
| 02A | A-SV013-HDOH | Modified ASTM D-1945 | 3.5 "Hg | 15 psi |
| 03A | A-AS4-HDOH | Modified ASTM D-1945 | 1.5 "Hg | 15 psi |
| 04A | Diesel#1-HDOH | Modified ASTM D-1945 | 5.0 "Hg | 15 psi |
| 05A | Ambient#1-HDOH | Modified ASTM D-1945 | 4.5 "Hg | 15 psi |
| 06A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 06B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 07A | LCS | Modified ASTM D-1945 | NA | NA |
| 07AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



DATE: 06/16/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1106214C

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|---|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD \leq 15%. All target analytes must be within the linear range of calibration (with the exception of O ₂ , N ₂ , and C ₆ + Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C₂-C₄ was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

J - Estimated value.

- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.11 | 0.18 |
| Carbon Dioxide | 0.022 | 5.0 |

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.023 | 2.6 |

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.11 | 2.0 |
| Carbon Dioxide | 0.021 | 1.1 |
| Methane | 0.00021 | 0.0012 |

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 0.10 |

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 0.040 |

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061022 | Date of Collection: 6/3/11 8:15:00 AM |
| Dil. Factor: | 2.24 | Date of Analysis: 6/10/11 04:59 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.022 | Not Detected |
| Helium | 0.11 | 0.18 |
| Carbon Dioxide | 0.022 | 5.0 |
| Methane | 0.00022 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061023 | Date of Collection: 6/3/11 8:58:00 AM |
| Dil. Factor: | 2.29 | Date of Analysis: 6/10/11 05:24 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.11 | Not Detected |
| Carbon Dioxide | 0.023 | 2.6 |
| Methane | 0.00023 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061024 | Date of Collection: 6/3/11 8:44:00 AM |
| Dil. Factor: | 2.13 | Date of Analysis: 6/10/11 05:45 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.021 | Not Detected |
| Helium | 0.11 | 2.0 |
| Carbon Dioxide | 0.021 | 1.1 |
| Methane | 0.00021 | 0.0012 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 9061025 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/10/11 06:06 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 0.10 |
| Methane | 0.00024 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---------------------------------------|
| File Name: | 9061026 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 2.38 | Date of Analysis: 6/10/11 07:36 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 0.040 |
| Methane | 0.00024 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9061006 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/10/11 08:29 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061005b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:06 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1106214C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061002
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 06:43 AM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 102 |
| Methane | 97 |
| Ethane | 99 |
| Ethene | 98 |
| Butane | 100 |
| Acetylene | 94 |
| Propane | 94 |
| Isobutane | 100 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1106214C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061027
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:00 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 102 |
| Methane | 98 |
| Ethane | 100 |
| Ethene | 99 |
| Acetylene | 95 |
| Propane | 95 |
| Butane | 101 |
| Isobutane | 101 |

Container Type: NA - Not Applicable

6/28/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1106457C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/21/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106457C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

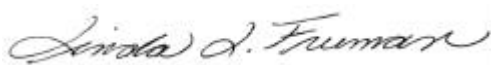
DATE RECEIVED: 06/21/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/28/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|------------------------|----------------------|-------------------------------|---------------------------|
| 01A | HAFB-VP26-B05(18)-HDOH | Modified ASTM D-1945 | 5.0 "Hg | 15 psi |
| 02A | HAFB-VP26-B05(24)-HDOH | Modified ASTM D-1945 | 5.0 "Hg | 15 psi |
| 03A | HAFB-VP26-B07(20)-HDOH | Modified ASTM D-1945 | 3.5 "Hg | 15 psi |
| 04A | HAFB-VP26-B07(25)-HDOH | Modified ASTM D-1945 | 3.5 "Hg | 15 psi |
| 05A | HAFB-VP26-B08(21)-HDOH | Modified ASTM D-1945 | 4.0 "Hg | 15 psi |
| 06A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 06B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 07A | LCS | Modified ASTM D-1945 | NA | NA |
| 07AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 06/28/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1106457C

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 21, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|--|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

- J - Estimated value.
- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.12 | 0.16 |
| Carbon Dioxide | 0.024 | 11 |
| Methane | 0.00024 | 7.5 |

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | 4.0 |
| Carbon Dioxide | 0.024 | 3.0 |
| Methane | 0.00024 | 50 |

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457C-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.023 | 19 |
| Methane | 0.00023 | 11 |

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457C-04A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | 0.24 |
| Carbon Dioxide | 0.023 | 11 |
| Methane | 0.00023 | 43 |

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457C-05A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
|-----------------|-----------------------|-------------------|

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457C-05A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|---------------------------|-----------------------|
| Carbon Dioxide | 0.023 | 12 |
| Methane | 0.00023 | 0.086 |

Client Sample ID: HAFB-VP26-B05(18)-HDOH

Lab ID#: 1106457C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9062410 | Date of Collection: 6/16/11 11:44:00 AM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/24/11 11:06 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | 0.16 |
| Carbon Dioxide | 0.024 | 11 |
| Methane | 0.00024 | 7.5 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B05(24)-HDOH

Lab ID#: 1106457C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9062411 | Date of Collection: 6/16/11 12:32:00 PM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/24/11 11:36 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | 4.0 |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 3.0 |
| Methane | 0.00024 | 50 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(20)-HDOH

Lab ID#: 1106457C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9062412 | Date of Collection: 6/16/11 12:42:00 PM |
| Dil. Factor: | 2.29 | Date of Analysis: 6/24/11 12:04 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.11 | Not Detected |
| Carbon Dioxide | 0.023 | 19 |
| Methane | 0.00023 | 11 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(25)-HDOH

Lab ID#: 1106457C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|--|
| File Name: | 9062413 | Date of Collection: 6/16/11 1:25:00 PM |
| Dil. Factor: | 2.29 | Date of Analysis: 6/24/11 12:35 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | 0.24 |
| Helium | 0.11 | Not Detected |
| Carbon Dioxide | 0.023 | 11 |
| Methane | 0.00023 | 43 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B08(21)-HDOH

Lab ID#: 1106457C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9062414 | Date of Collection: 6/16/11 11:18:00 AM |
| Dil. Factor: | 2.33 | Date of Analysis: 6/24/11 01:01 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.023 | 12 |
| Methane | 0.00023 | 0.086 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1106457C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9062405 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/24/11 07:55 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1106457C-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9062404b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/24/11 07:18 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1106457C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9062402
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/24/11 06:30 AM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 96 |
| Carbon Dioxide | 99 |
| Methane | 98 |
| Ethane | 100 |
| Ethene | 99 |
| Butane | 100 |
| Acetylene | 95 |
| Propane | 94 |
| Isobutane | 101 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1106457C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9062434
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/24/11 09:48 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 96 |
| Carbon Dioxide | 100 |
| Methane | 98 |
| Ethane | 101 |
| Ethene | 99 |
| Propane | 95 |
| Butane | 101 |
| Acetylene | 95 |
| Isobutane | 101 |

Container Type: NA - Not Applicable

6/16/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name: Aloha School Street
Project #:
Workorder #: 1106214C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 6/9/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1106214C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT # Aloha School Street

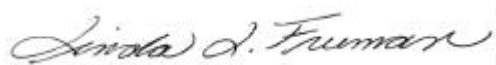
DATE RECEIVED: 06/09/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 06/16/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------|----------------------|-------------------------------|---------------------------|
| 01A | A-SV04-HDOH | Modified ASTM D-1945 | 3.0 "Hg | 15 psi |
| 02A | A-SV013-HDOH | Modified ASTM D-1945 | 3.5 "Hg | 15 psi |
| 03A | A-AS4-HDOH | Modified ASTM D-1945 | 1.5 "Hg | 15 psi |
| 04A | Diesel#1-HDOH | Modified ASTM D-1945 | 5.0 "Hg | 15 psi |
| 05A | Ambient#1-HDOH | Modified ASTM D-1945 | 4.5 "Hg | 15 psi |
| 06A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 06B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 07A | LCS | Modified ASTM D-1945 | NA | NA |
| 07AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



DATE: 06/16/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1106214C

Five 1 Liter Summa Canister (MA APH Certified) samples were received on June 09, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|---------------------------|--|--|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

J - Estimated value.

- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.11 | 0.18 |
| Carbon Dioxide | 0.022 | 5.0 |

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.023 | 2.6 |

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.11 | 2.0 |
| Carbon Dioxide | 0.021 | 1.1 |
| Methane | 0.00021 | 0.0012 |

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 0.10 |

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 0.040 |

Client Sample ID: A-SV04-HDOH

Lab ID#: 1106214C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061022 | Date of Collection: 6/3/11 8:15:00 AM |
| Dil. Factor: | 2.24 | Date of Analysis: 6/10/11 04:59 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.022 | Not Detected |
| Helium | 0.11 | 0.18 |
| Carbon Dioxide | 0.022 | 5.0 |
| Methane | 0.00022 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-SV013-HDOH

Lab ID#: 1106214C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061023 | Date of Collection: 6/3/11 8:58:00 AM |
| Dil. Factor: | 2.29 | Date of Analysis: 6/10/11 05:24 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.11 | Not Detected |
| Carbon Dioxide | 0.023 | 2.6 |
| Methane | 0.00023 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: A-AS4-HDOH

Lab ID#: 1106214C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061024 | Date of Collection: 6/3/11 8:44:00 AM |
| Dil. Factor: | 2.13 | Date of Analysis: 6/10/11 05:45 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.021 | Not Detected |
| Helium | 0.11 | 2.0 |
| Carbon Dioxide | 0.021 | 1.1 |
| Methane | 0.00021 | 0.0012 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Diesel#1-HDOH

Lab ID#: 1106214C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061025 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 2.42 | Date of Analysis: 6/10/11 06:06 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 0.10 |
| Methane | 0.00024 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Ambient#1-HDOH

Lab ID#: 1106214C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9061026 | Date of Collection: 6/3/11 2:09:00 PM |
| Dil. Factor: | 2.38 | Date of Analysis: 6/10/11 07:36 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 0.040 |
| Methane | 0.00024 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9061006 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 6/10/11 08:29 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1106214C-06B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061005b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:06 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1106214C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061002
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 06:43 AM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 102 |
| Methane | 97 |
| Ethane | 99 |
| Ethene | 98 |
| Butane | 100 |
| Acetylene | 94 |
| Propane | 94 |
| Isobutane | 100 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1106214C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9061027
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 6/10/11 08:00 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 102 |
| Methane | 98 |
| Ethane | 100 |
| Ethene | 99 |
| Acetylene | 95 |
| Propane | 95 |
| Butane | 101 |
| Isobutane | 101 |

Container Type: NA - Not Applicable

8/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1107310C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 7/19/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1107310C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

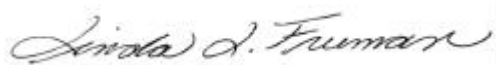
DATE RECEIVED: 07/19/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/02/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|---------------------|----------------------|-------------------------------|---------------------------|
| 01A | HAFB-ST03-B58 (347) | Modified ASTM D-1945 | 5.5"Hg | 15 psi |
| 02A | HAFB-ST03-B58 (422) | Modified ASTM D-1945 | 4.0"Hg | 15 psi |
| 03A | HAFB-ST03-B58 (492) | Modified ASTM D-1945 | 5.0"Hg | 15 psi |
| 04A | HAFB-ST03-B58 (388) | Modified ASTM D-1945 | 4.5"Hg | 15 psi |
| 05A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 05B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 06A | LCS | Modified ASTM D-1945 | NA | NA |
| 06AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 08/02/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1107310C

Four 1 Liter Summa Canister (MA APH Certified) samples were received on July 19, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|--|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

The Chain of Custody (COC) information for samples HAFB-ST03-B58 (347) and HAFB-ST03-B58 (492) did not match the entries on the sample tags with regard to sample identification. Therefore the information on the COC was used to process and report the samples.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.025 | 5.5 |
| Methane | 0.00025 | 0.0011 |

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.12 | 19 |
| Carbon Dioxide | 0.023 | 4.0 |
| Methane | 0.00023 | 0.00065 |

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310C-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 9.5 |
| Methane | 0.00024 | 0.042 |

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310C-04A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 6.7 |
| Methane | 0.00024 | 0.0075 |

Client Sample ID: HAFB-ST03-B58 (347)

Lab ID#: 1107310C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9072219 | Date of Collection: 7/14/11 10:47:00 AM |
| Dil. Factor: | 2.47 | Date of Analysis: 7/22/11 04:15 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.025 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.025 | 5.5 |
| Methane | 0.00025 | 0.0011 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58 (422)

Lab ID#: 1107310C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9072222 | Date of Collection: 7/14/11 11:00:00 AM |
| Dil. Factor: | 2.33 | Date of Analysis: 7/22/11 05:31 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.12 | 19 |
| Carbon Dioxide | 0.023 | 4.0 |
| Methane | 0.00023 | 0.00065 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58 (492)

Lab ID#: 1107310C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9072223 | Date of Collection: 7/14/11 11:55:00 AM |
| Dil. Factor: | 2.42 | Date of Analysis: 7/22/11 05:53 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|----------------|--------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 9.5 |
| Methane | 0.00024 | 0.042 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58 (388)

Lab ID#: 1107310C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9072224 | Date of Collection: 7/14/11 12:08:00 PM |
| Dil. Factor: | 2.38 | Date of Analysis: 7/22/11 06:31 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 6.7 |
| Methane | 0.00024 | 0.0075 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1107310C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072206
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 10:35 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1107310C-05B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072205b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 10:13 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1107310C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072202
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 08:51 AM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 100 |
| Methane | 100 |
| Ethane | 103 |
| Ethene | 102 |
| Butane | 104 |
| Acetylene | 98 |
| Propane | 98 |
| Isobutane | 104 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1107310C-06AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9072227
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 7/22/11 07:59 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 95 |
| Carbon Dioxide | 100 |
| Methane | 101 |
| Ethane | 104 |
| Ethene | 102 |
| Acetylene | 98 |
| Propane | 98 |
| Butane | 104 |
| Isobutane | 104 |

Container Type: NA - Not Applicable

9/9/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108544C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/26/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108544C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

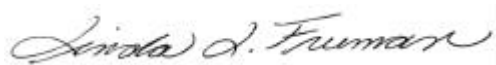
DATE RECEIVED: 08/26/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 09/09/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------|----------------------|-------------------------------|---------------------------|
| 01A | HDOH-GASOLINE#1 | Modified ASTM D-1945 | 4.5 "Hg | 15 psi |
| 02A | HDOH-DIESEL#2 | Modified ASTM D-1945 | 4.0 "Hg | 15 psi |
| 03A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 03B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 04A | LCS | Modified ASTM D-1945 | NA | NA |
| 04AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



DATE: 09/09/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1108544C

Two 1 Liter Summa Canister (MA APH Certified) samples were received on August 26, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|--|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

J - Estimated value.

- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | 44 |
| Carbon Dioxide | 0.024 | 0.080 |
| Methane | 0.00024 | 0.015 |

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|---------------------------|-----------------------|
| Carbon Dioxide | 0.049 | 0.053 |

Client Sample ID: HDOH-GASOLINE#1

Lab ID#: 1108544C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9090217 | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 2.38 | Date of Analysis: 9/2/11 06:13 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | 44 |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 0.080 |
| Methane | 0.00024 | 0.015 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HDOH-DIESEL#2

Lab ID#: 1108544C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9090216 | Date of Collection: 8/25/11 10:30:00 AM |
| Dil. Factor: | 4.87 | Date of Analysis: 9/2/11 05:45 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.049 | Not Detected |
| Helium | 0.24 | Not Detected |
| Carbon Dioxide | 0.049 | 0.053 |
| Methane | 0.00049 | Not Detected |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1108544C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9090206 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 9/2/11 09:04 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1108544C-03B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9090205b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 9/2/11 08:42 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1108544C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9090202
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 9/2/11 06:54 AM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 93 |
| Carbon Dioxide | 101 |
| Methane | 99 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1108544C-04AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9090225
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 9/2/11 10:36 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 93 |
| Carbon Dioxide | 101 |
| Methane | 102 |

Container Type: NA - Not Applicable

8/26/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1108300C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 8/15/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1108300C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. #

FAX: 808-586-7537

PROJECT #

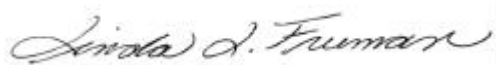
DATE RECEIVED: 08/15/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 08/26/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|----------------|----------------------|-------------------------------|---------------------------|
| 01A | HH-OUIC-MW10SG | Modified ASTM D-1945 | 4.0 "Hg | 15 psi |
| 02A | HH-OUIC-MW22R | Modified ASTM D-1945 | 5.0 "Hg | 15 psi |
| 03A | HH-OUIC-OTNS1 | Modified ASTM D-1945 | 3.2 "Hg | 15 psi |
| 04A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 04B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 05A | LCS | Modified ASTM D-1945 | NA | NA |
| 05AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 08/26/11

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,

Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1108300C

Three 1 Liter Summa Canister (MA APH Certified) samples were received on August 15, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|--|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Per client's request, the carbon range of C2-C4 was quantified based on the response factor of Methane.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | 0.027 |
| Carbon Dioxide | 0.023 | 10 |
| Methane | 0.00023 | 16 |

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | 0.028 |
| Carbon Dioxide | 0.024 | 16 |
| Methane | 0.00024 | 42 |

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300C-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.11 | 0.31 |
| Carbon Dioxide | 0.023 | 2.4 |
| Methane | 0.00023 | 0.0019 |

Client Sample ID: HH-OUIC-MW10SG

Lab ID#: 1108300C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9081807 | Date of Collection: 8/11/11 2:03:00 PM |
| Dil. Factor: | 2.33 | Date of Analysis: 8/18/11 08:58 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | 0.027 |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.023 | 10 |
| Methane | 0.00023 | 16 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OUIC-MW22R

Lab ID#: 1108300C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9081808 | Date of Collection: 8/11/11 1:38:00 PM |
| Dil. Factor: | 2.42 | Date of Analysis: 8/18/11 09:25 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | 0.028 |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 16 |
| Methane | 0.00024 | 42 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OUIC-OTNS1

Lab ID#: 1108300C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9081810 | Date of Collection: 8/11/11 2:38:00 PM |
| Dil. Factor: | 2.26 | Date of Analysis: 8/18/11 10:24 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.11 | 0.31 |
| Carbon Dioxide | 0.023 | 2.4 |
| Methane | 0.00023 | 0.0019 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1108300C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9081805
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 8/17/11 09:43 PM

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1108300C-04B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9081804b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 8/17/11 09:20 PM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1108300C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9081802
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 8/17/11 08:36 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 100 |
| Methane | 101 |
| Ethane | 104 |
| Ethene | 102 |
| Butane | 104 |
| Acetylene | 98 |
| Propane | 98 |
| Isobutane | 104 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1108300C-05AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9081829
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 8/18/11 07:09 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 95 |
| Carbon Dioxide | 102 |
| Methane | 101 |
| Ethane | 104 |
| Ethene | 102 |
| Acetylene | 98 |
| Propane | 98 |
| Butane | 104 |
| Isobutane | 104 |

Container Type: NA - Not Applicable

10/21/2011

Mr. Roger Brewer

Tetra Tech EM, Inc.

919 Ala Moana Blvd.

Room 206

Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110160C

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/8/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner

Project Manager

WORK ORDER #: 1110160C

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/08/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 10/21/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-----------------|----------------------|-------------------------------|---------------------------|
| 01A | HAFB-SP43-VMP10 | Modified ASTM D-1945 | 5.2 "Hg | 15psi |
| 02A | HAFB-SP43-VMP11 | Modified ASTM D-1945 | 5.0 "Hg | 15psi |
| 03A | HAFB-SP43-VMP12 | Modified ASTM D-1945 | 4.5 "Hg | 15psi |
| 04A | HAFB-SP43-VMP16 | Modified ASTM D-1945 | 6.0 "Hg | 15psi |
| 05A | HAFB-SP43-VMP17 | Modified ASTM D-1945 | 5.5 "Hg | 15psi |
| 06A | FV-GP01-HDOH#2 | Modified ASTM D-1945 | 4.0 "Hg | 15psi |
| 07A | FV-GP08-HDOH#2 | Modified ASTM D-1945 | 5.0 "Hg | 15psi |
| 08A | FV-GP16R-HDOH#2 | Modified ASTM D-1945 | 5.5 "Hg | 15psi |
| 09A | JP8#1 | Modified ASTM D-1945 | 4.0 "Hg | 15psi |
| 10A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 10B | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 11A | LCS | Modified ASTM D-1945 | NA | NA |
| 11AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 10/21/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP - CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1110160C

Nine 1 Liter Summa Canister (MA APH Certified) samples were received on October 08, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|--|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD <= 15%. All target analytes must be within the linear range of calibration (with the exception of O2, N2, and C6+ Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

J - Estimated value.

- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160C-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 14 |
| Methane | 0.00024 | 57 |

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160C-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 15 |
| Methane | 0.00024 | 5.0 |

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160C-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 12 |
| Methane | 0.00024 | 0.0072 |

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160C-04A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.025 | 12 |
| Methane | 0.00025 | 34 |

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160C-05A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.025 | 15 |
| Methane | 0.00025 | 1.0 |

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160C-06A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.023 | 7.0 |
| Methane | 0.00023 | 0.17 |

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160C-07A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.024 | 4.1 |
| Methane | 0.00024 | 1.0 |

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160C-08A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.025 | 2.4 |
| Methane | 0.00025 | 43 |

Client Sample ID: JP8#1

Lab ID#: 1110160C-09A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.023 | 0.039 |
| Methane | 0.00023 | 0.00056 |

Client Sample ID: HAFB-SP43-VMP10

Lab ID#: 1110160C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9101108 | Date of Collection: 10/5/11 2:05:00 PM |
| Dil. Factor: | 2.44 | Date of Analysis: 10/11/11 10:29 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 14 |
| Methane | 0.00024 | 57 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP11

Lab ID#: 1110160C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9101113 | Date of Collection: 10/5/11 1:15:00 PM |
| Dil. Factor: | 2.42 | Date of Analysis: 10/11/11 01:20 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 15 |
| Methane | 0.00024 | 5.0 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP12

Lab ID#: 1110160C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9101106 | Date of Collection: 10/5/11 12:44:00 PM |
| Dil. Factor: | 2.38 | Date of Analysis: 10/11/11 09:28 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 12 |
| Methane | 0.00024 | 0.0072 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP16

Lab ID#: 1110160C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9101109 | Date of Collection: 10/5/11 1:42:00 PM |
| Dil. Factor: | 2.52 | Date of Analysis: 10/11/11 10:58 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.025 | Not Detected |
| Helium | 0.13 | Not Detected |
| Carbon Dioxide | 0.025 | 12 |
| Methane | 0.00025 | 34 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-SP43-VMP17

Lab ID#: 1110160C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9101114 | Date of Collection: 10/5/11 11:52:00 AM |
| Dil. Factor: | 2.47 | Date of Analysis: 10/11/11 01:46 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.025 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.025 | 15 |
| Methane | 0.00025 | 1.0 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP01-HDOH#2

Lab ID#: 1110160C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|--|
| File Name: | 9101107 | Date of Collection: 10/6/11 1:45:00 PM |
| Dil. Factor: | 2.33 | Date of Analysis: 10/11/11 10:02 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.023 | 7.0 |
| Methane | 0.00023 | 0.17 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP08-HDOH#2

Lab ID#: 1110160C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9101115 | Date of Collection: 10/6/11 1:06:00 PM |
| Dil. Factor: | 2.42 | Date of Analysis: 10/11/11 02:13 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.024 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.024 | 4.1 |
| Methane | 0.00024 | 1.0 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: FV-GP16R-HDOH#2

Lab ID#: 1110160C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9101110 | Date of Collection: 10/6/11 12:19:00 PM |
| Dil. Factor: | 2.47 | Date of Analysis: 10/11/11 11:33 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.025 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.025 | 2.4 |
| Methane | 0.00025 | 43 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: JP8#1

Lab ID#: 1110160C-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|---|
| File Name: | 9101112 | Date of Collection: 10/6/11 3:15:00 PM |
| Dil. Factor: | 2.33 | Date of Analysis: 10/11/11 12:32 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.023 | Not Detected |
| Helium | 0.12 | Not Detected |
| Carbon Dioxide | 0.023 | 0.039 |
| Methane | 0.00023 | 0.00056 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1110160C-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9101105 | Date of Collection: NA |
| Dil. Factor: | 1.00 | Date of Analysis: 10/11/11 08:45 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1110160C-10B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9101104b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/11/11 08:02 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110160C-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9101102
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/11/11 07:08 AM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 101 |
| Methane | 99 |
| Ethane | 101 |
| Ethene | 100 |
| Propane | 96 |
| Butane | 102 |
| Acetylene | 96 |
| Isobutane | 102 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1110160C-11AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9101124
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/11/11 06:40 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 95 |
| Carbon Dioxide | 101 |
| Methane | 100 |
| Ethane | 102 |
| Ethene | 101 |
| Acetylene | 97 |
| Propane | 96 |
| Isobutane | 102 |
| Butane | 102 |

Container Type: NA - Not Applicable

11/2/2011

Mr. Roger Brewer
Tetra Tech EM, Inc.
919 Ala Moana Blvd.
Room 206
Honolulu HI 96814

Project Name:

Project #:

Workorder #: 1110413D

Dear Mr. Roger Brewer

The following report includes the data for the above referenced project for sample(s) received on 10/20/2011 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1945 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1110413D

Work Order Summary

| | | | |
|------------------------|---|------------------|---|
| CLIENT: | Mr. Roger Brewer Hawaii State Dept. of Health 919 Ala Moana Blvd. Room 206 Honolulu, HI 96814 | BILL TO: | Mr. Eric Jensen Tetra Tech EM, Inc. 737 Bishop Street Suite 3010 Honolulu, HI 96813 |
| PHONE: | 808-586-4328 | P.O. # | 1077200 |
| FAX: | 808-586-7537 | PROJECT # | |
| DATE RECEIVED: | 10/20/2011 | CONTACT: | Kelly Buettner |
| DATE COMPLETED: | 11/02/2011 | | |

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|--------------------|----------------------|-------------------------------|---------------------------|
| 01A | HAFB-VP26-B05(18) | Modified ASTM D-1945 | 4.0 "Hg | 5 psi |
| 02A | HAFB-VP26-B05(24) | Modified ASTM D-1945 | 3.5 "Hg | 5 psi |
| 03A | HAFB-VP26-B07(20) | Modified ASTM D-1945 | 2.5 "Hg | 5 psi |
| 04A | HAFB-VP26-B07(25) | Modified ASTM D-1945 | 4.5 "Hg | 5 psi |
| 05A | HAFB-ST03-B58(347) | Modified ASTM D-1945 | 4.4 "Hg | 5 psi |
| 06A | HAFB-ST03-B58(422) | Modified ASTM D-1945 | 5.0 "Hg | 5 psi |
| 07A | HAFB-ST03-B58(492) | Modified ASTM D-1945 | 4.6 "Hg | 5 psi |
| 08A | HAFB-ST03-B59(388) | Modified ASTM D-1945 | 5.0 "Hg | 5 psi |
| 09A | HH-OU1C-MW10SG | Modified ASTM D-1945 | 6.0 "Hg | 5 psi |
| 10A | HH-OU1C-MW22R | Modified ASTM D-1945 | 5.4 "Hg | 5 psi |
| 11A | HH-OU1C-OTNS1 | Modified ASTM D-1945 | 4.2 "Hg | 5 psi |
| 12A | GASOLINE#2 | Modified ASTM D-1945 | 2.6 "Hg | 5 psi |
| 13A | DIESEL#3 | Modified ASTM D-1945 | 3.2 "Hg | 5 psi |
| 14A | GASOLINE-EXHAUST | Modified ASTM D-1945 | 3.2 "Hg | 5 psi |
| 15A | DIESEL-EXHAUST | Modified ASTM D-1945 | 3.0 "Hg | 5 psi |
| 16A | Lab Blank | Modified ASTM D-1945 | NA | NA |
| 16B | Lab Blank | Modified ASTM D-1945 | NA | NA |

Continued on next page

WORK ORDER #: 1110413D

Work Order Summary

CLIENT: Mr. Roger Brewer
Hawaii State Dept. of Health
919 Ala Moana Blvd.
Room 206
Honolulu, HI 96814

BILL TO: Mr. Eric Jensen
Tetra Tech EM, Inc.
737 Bishop Street
Suite 3010
Honolulu, HI 96813

PHONE: 808-586-4328

P.O. # 1077200

FAX: 808-586-7537

PROJECT #

DATE RECEIVED: 10/20/2011

CONTACT: Kelly Buettner

DATE COMPLETED: 11/02/2011

| <u>FRACTION #</u> | <u>NAME</u> | <u>TEST</u> | <u>RECEIPT VAC./PRES.</u> | <u>FINAL PRESSURE</u> |
|-------------------|-------------|----------------------|-------------------------------|---------------------------|
| 17A | LCS | Modified ASTM D-1945 | NA | NA |
| 17AA | LCSD | Modified ASTM D-1945 | NA | NA |

CERTIFIED BY:



Laboratory Director

DATE: 11/02/11

Certification numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Air Toxics Ltd.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1945
Tetra Tech EM, Inc.
Workorder# 1110413D

Fifteen 1 Liter Summa Canister (MA APH Certified) samples were received on October 20, 2011. The laboratory performed analysis via modified ASTM Method D-1945 for Methane and fixed gases in natural gas using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| <i>Requirement</i> | <i>ASTM D-1945</i> | <i>ATL Modifications</i> |
|-------------------------|--|---|
| Normalization | Sum of original values should not differ from 100.0% by more than 1.0%. | Sum of original values may range between 85-115%. Normalization of data not performed. |
| Sample analysis | Equilibrate samples to 20-50° F. above source temperature at field sampling | No heating of samples is performed. |
| Sample calculation | Response factor is calculated using peak height for C5 and lighter compounds. | Peak areas are used for all target analytes to quantitate concentrations. |
| Reference Standard | Concentration should not be < half of nor differ by more than 2 X the concentration of the sample. Run 2 consecutive checks; must agree within 1%. | A minimum 3-point linear calibration is performed. The acceptance criterion is %RSD \leq 15%. All target analytes must be within the linear range of calibration (with the exception of O ₂ , N ₂ , and C ₆ + Hydrocarbons). |
| Sample Injection Volume | 0.50 mL to achieve Methane linearity. | 1.0 mL. |

Receiving Notes

The Chain of Custody (COC) information for sample HH-OU1C-MW22R and HH-OU1C-OTNS1 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the samples.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Six qualifiers may have been used on the data analysis sheets and indicate as follows:

J - Estimated value.

- E - Exceeds instrument calibration range.
- S - Saturated peak.
- Q - Exceeds quality control limits.
- U - Compound analyzed for but not detected above the detection limit.
- M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413D-01A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.016 | 15 |
| Methane | 0.00016 | 5.2 |

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413D-02A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | 3.6 |
| Carbon Dioxide | 0.015 | 3.7 |
| Methane | 0.00015 | 16 |

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413D-03A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | 0.034 |
| Helium | 0.073 | 0.22 |
| Carbon Dioxide | 0.015 | 17 |
| Methane | 0.00015 | 8.7 |

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413D-04A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | 0.36 |
| Carbon Dioxide | 0.016 | 11 |
| Methane | 0.00016 | 27 |

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413D-05A

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413D-05A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.016 | 6.5 |
| Methane | 0.00016 | 0.00086 |

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413D-06A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.016 | 9.9 |
| Methane | 0.00016 | 0.0014 |

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413D-07A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.016 | 11 |
| Methane | 0.00016 | 0.0018 |

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413D-08A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.021 | 6.0 |
| Methane | 0.00021 | 0.00031 |

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413D-09A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.017 | 10 |
| Methane | 0.00017 | 11 |

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413D-10A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | 0.025 |
| Carbon Dioxide | 0.016 | 16 |
| Methane | 0.00016 | 38 |

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413D-11A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Helium | 0.10 | 1.1 |
| Carbon Dioxide | 0.021 | 3.2 |
| Methane | 0.00021 | 0.00093 |

Client Sample ID: GASOLINE#2

Lab ID#: 1110413D-12A

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | 0.18 |
| Carbon Dioxide | 0.015 | 0.043 |
| Methane | 0.00015 | 0.00067 |

Client Sample ID: DIESEL#3

Lab ID#: 1110413D-13A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.015 | 0.042 |
| Methane | 0.00015 | 0.00021 |

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413D-14A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
|-----------------|-----------------------|-------------------|

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413D-14A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.015 | 4.6 |
| Methane | 0.00015 | 0.0022 |

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413D-15A

| Compound | Rpt. Limit (%) | Amount (%) |
|-----------------|-----------------------|-------------------|
| Carbon Dioxide | 0.015 | 0.27 |
| Methane | 0.00015 | 0.00021 |

Client Sample ID: HAFB-VP26-B05(18)

Lab ID#: 1110413D-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102417 | Date of Collection: 10/13/11 10:12:00 A |
| Dil. Factor: | 1.55 | Date of Analysis: 10/24/11 01:40 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | Not Detected |
| Helium | 0.078 | Not Detected |
| Carbon Dioxide | 0.016 | 15 |
| Methane | 0.00016 | 5.2 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B05(24)

Lab ID#: 1110413D-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102410 | Date of Collection: 10/13/11 10:46:00 A |
| Dil. Factor: | 1.52 | Date of Analysis: 10/24/11 10:57 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | 3.6 |
| Helium | 0.076 | Not Detected |
| Carbon Dioxide | 0.015 | 3.7 |
| Methane | 0.00015 | 16 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(20)

Lab ID#: 1110413D-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102411 | Date of Collection: 10/13/11 11:23:00 A |
| Dil. Factor: | 1.46 | Date of Analysis: 10/24/11 11:18 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | 0.034 |
| Helium | 0.073 | 0.22 |
| Carbon Dioxide | 0.015 | 17 |
| Methane | 0.00015 | 8.7 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-VP26-B07(25)

Lab ID#: 1110413D-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102412 | Date of Collection: 10/13/11 11:49:00 A |
| Dil. Factor: | 1.58 | Date of Analysis: 10/24/11 11:43 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | 0.36 |
| Helium | 0.079 | Not Detected |
| Carbon Dioxide | 0.016 | 11 |
| Methane | 0.00016 | 27 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58(347)

Lab ID#: 1110413D-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102419 | Date of Collection: 10/14/11 9:35:00 AM |
| Dil. Factor: | 1.57 | Date of Analysis: 10/24/11 02:30 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | Not Detected |
| Helium | 0.078 | Not Detected |
| Carbon Dioxide | 0.016 | 6.5 |
| Methane | 0.00016 | 0.00086 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58(422)

Lab ID#: 1110413D-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9102418 | Date of Collection: 10/14/11 10:19:00 A |
| Dil. Factor: | 1.61 | Date of Analysis: 10/24/11 02:05 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|----------------|--------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | Not Detected |
| Helium | 0.080 | Not Detected |
| Carbon Dioxide | 0.016 | 9.9 |
| Methane | 0.00016 | 0.0014 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B58(492)

Lab ID#: 1110413D-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9102420 | Date of Collection: 10/14/11 10:36:00 A |
| Dil. Factor: | 1.58 | Date of Analysis: 10/24/11 02:54 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|----------------|--------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | Not Detected |
| Helium | 0.079 | Not Detected |
| Carbon Dioxide | 0.016 | 11 |
| Methane | 0.00016 | 0.0018 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HAFB-ST03-B59(388)

Lab ID#: 1110413D-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9102409 | Date of Collection: 10/14/11 11:03:00 A |
| Dil. Factor: | 2.08 | Date of Analysis: 10/24/11 10:25 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|----------------|--------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.021 | Not Detected |
| Helium | 0.10 | Not Detected |
| Carbon Dioxide | 0.021 | 6.0 |
| Methane | 0.00021 | 0.00031 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OU1C-MW10SG

Lab ID#: 1110413D-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102413 | Date of Collection: 10/18/11 11:43:00 A |
| Dil. Factor: | 1.68 | Date of Analysis: 10/24/11 12:06 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|-----------------------|-------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.017 | Not Detected |
| Helium | 0.084 | Not Detected |
| Carbon Dioxide | 0.017 | 10 |
| Methane | 0.00017 | 11 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OU1C-MW22R

Lab ID#: 1110413D-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102414 | Date of Collection: 10/18/11 11:09:00 A |
| Dil. Factor: | 1.63 | Date of Analysis: 10/24/11 12:30 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.016 | 0.025 |
| Helium | 0.082 | Not Detected |
| Carbon Dioxide | 0.016 | 16 |
| Methane | 0.00016 | 38 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: HH-OU1C-OTNS1

Lab ID#: 1110413D-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9102421 | Date of Collection: 10/18/11 10:31:00 A |
| Dil. Factor: | 2.09 | Date of Analysis: 10/24/11 03:19 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|----------------|--------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.021 | Not Detected |
| Helium | 0.10 | 1.1 |
| Carbon Dioxide | 0.021 | 3.2 |
| Methane | 0.00021 | 0.00093 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: GASOLINE#2

Lab ID#: 1110413D-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102416 | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 1.47 | Date of Analysis: 10/24/11 01:15 PM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | 0.18 |
| Helium | 0.074 | Not Detected |
| Carbon Dioxide | 0.015 | 0.043 |
| Methane | 0.00015 | 0.00067 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: DIESEL#3

Lab ID#: 1110413D-13A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9102405 | Date of Collection: 10/18/11 8:35:00 AM |
| Dil. Factor: | 1.50 | Date of Analysis: 10/24/11 08:31 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|----------------|--------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | Not Detected |
| Helium | 0.075 | Not Detected |
| Carbon Dioxide | 0.015 | 0.042 |
| Methane | 0.00015 | 0.00021 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: GASOLINE-EXHAUST

Lab ID#: 1110413D-14A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|--------------|---------|---|
| File Name: | 9102407 | Date of Collection: 10/18/11 8:50:00 AM |
| Dil. Factor: | 1.50 | Date of Analysis: 10/24/11 09:36 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | Not Detected |
| Helium | 0.075 | Not Detected |
| Carbon Dioxide | 0.015 | 4.6 |
| Methane | 0.00015 | 0.0022 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: DIESEL-EXHAUST

Lab ID#: 1110413D-15A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

| | | |
|---------------------|----------------|--|
| File Name: | 9102408 | Date of Collection: 10/18/11 8:45:00 AM |
| Dil. Factor: | 1.49 | Date of Analysis: 10/24/11 10:00 AM |

| Compound | Rpt. Limit (%) | Amount (%) |
|------------------------------------|---------------------------|-----------------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.015 | Not Detected |
| Helium | 0.074 | Not Detected |
| Carbon Dioxide | 0.015 | 0.27 |
| Methane | 0.00015 | 0.00021 |

Container Type: 1 Liter Summa Canister (MA APH Certified)

Client Sample ID: Lab Blank

Lab ID#: 1110413D-16A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102404
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 08:07 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|---------------------------------------|-------------------|---------------|
| C2-C4 Hydrocarbons ref. to Methane | 0.010 | Not Detected |
| Carbon Dioxide | 0.010 | Not Detected |
| Methane | 0.00010 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: Lab Blank

Lab ID#: 1110413D-16B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102403b
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 07:35 AM

| Compound | Rpt. Limit (%) | Amount (%) |
|----------|-------------------|---------------|
| Helium | 0.050 | Not Detected |

Container Type: NA - Not Applicable

Client Sample ID: LCS

Lab ID#: 1110413D-17A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102402
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 07:03 AM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 101 |
| Methane | 98 |
| Ethane | 101 |
| Ethene | 99 |
| Propane | 96 |
| Butane | 102 |
| Acetylene | 96 |
| Isobutane | 102 |

Container Type: NA - Not Applicable

Client Sample ID: LCSD

Lab ID#: 1110413D-17AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1945

File Name: 9102429
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 10/24/11 06:27 PM

| Compound | %Recovery |
|----------------|-----------|
| Helium | 94 |
| Carbon Dioxide | 103 |
| Methane | 99 |
| Ethane | 102 |
| Ethene | 100 |
| Acetylene | 97 |
| Propane | 96 |
| Isobutane | 103 |
| Butane | 103 |

Container Type: NA - Not Applicable