



## Analytical Report

|   |  |                          |
|---|--|--------------------------|
| AEI Consultants<br><br>2500 Camino Diablo, Ste.#200<br><br>Walnut Creek, CA 94597 | Client Project ID: #298931; Foley Street | Date Sampled: 04/16/13   |
|   |  | Date Received: 04/17/13  |
|   | Client Contact: Jeremy Smith             | Date Reported: 04/25/13  |
|   | Client P.O.: WC084069                    | Date Completed: 04/25/13 |

**WorkOrder: 1304552**

April 25, 2013

Dear Jeremy:

**RECEIVED**

*By Alameda County Environmental Health at 3:55 pm, Jun 17, 2013*

Enclosed within are:

- 1) The results of the **9** analyzed samples from your project: **#298931; Foley Street,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
 Laboratory Manager  
 McC Campbell Analytical, Inc.

***The analytical results relate only to the items tested.***

1304552



**McCAMPBELL ANALYTICAL INC.**

1534 WILLOW PASS ROAD / PITTSBURG, CA 94565-1701  
 Website: [www.mccampbell.com](http://www.mccampbell.com) / Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
 Telephone: (877) 252-9262 / Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

**TURN AROUND TIME**

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Lab Use Only

Report To: Jeremy Smith Bill To: AEI  
 Company: AEI Consultants WC084069  
2500 Camino Diablo  
Walnut Creek E-Mail: jasmi.th@aeiconsultants.com  
 Tele: (925) 746-6000 Fax: (925) 746-6099  
 Project #: 298931 Project Name: Foley Street

| Pressurized By | Date | Pressurization Gas |    |
|----------------|------|--------------------|----|
|                |      | N2                 | He |
|                |      |                    |    |

Project Location: 1630 Park Street, Alameda, CA  
 Sampler Signature: [Signature]

Helium Shroud SN#: \_\_\_\_\_  
 Other: RTH WC084069

Notes:  
McC Campbell  
Helium Shroud used

| Field Sample ID<br>(Location) | Collection |      | Canister SN# | Manifold / Sampler<br>Kit SN# |
|-------------------------------|------------|------|--------------|-------------------------------|
|                               | Date       | Time |              |                               |
| SV-1                          | 4-16-13    | 1230 | 6301         | 316FP-998                     |
| SV-2                          |            | 124  | 6419         | 316T-776                      |
| SV-3                          |            | 1033 | A7522        | 316-815                       |
| SV-4                          |            | 1131 | 1462-585     | 316T-779                      |
| SV-5                          |            | 337  | 6306-786     | 316-825                       |
| SV-6                          |            | 207  | 6303         | 316-816                       |
| SV-7                          |            | 418  | 6311-791     | 316-819                       |
| Trip Blank                    |            |      |              |                               |
| SV-5 Dup                      |            | 337  | 1461         | 316-825                       |

| Analysis Requested  | Indoor Air | Soil Gas | Canister Pressure/Vacuum |       |         |             |
|---|------------|----------|--------------------------|-------|---------|-------------|
|   |            |          | Initial                  | Final | Receipt | Final (psi) |
| TO-17 (TPH, BTEX, Naphthalene)<br>D1946-90 (O2, CO2, CH4) |            | X        | -30                      | -5    |         |             |
|   |            |          | -28.5                    | -5    |         |             |
|   |            |          | -28                      | -4    |         |             |
|   |            |          | -30                      | -5    |         |             |
|   |            |          | -30                      | -5    |         |             |
|   |            |          | -27                      | -5    |         |             |
|   |            |          | -27                      | -5    |         |             |
| TO-17 only  |            |          | N/A                      | N/A   |         |             |
| TO-17 only  |            |          | -30                      | -5    |         |             |

Relinquished By: [Signature] Date: 4/17/13 Time: 6:45 Received By: [Signature]

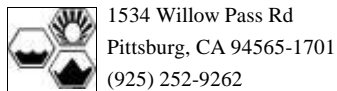
Temp (°C): \_\_\_\_\_ Work Order #: \_\_\_\_\_

Relinquished By: [Signature] Date: 4/17/13 Time: 1545 Received By: Mumford

Equipment Condition: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

Shipped Via: \_\_\_\_\_



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1304552

ClientCode: AEL

- WaterTrax  
  WriteOn  
  EDF  
  Excel  
  EQuIS  
 Email  
 HardCopy  
 ThirdParty  
 J-flag

Report to:  
Jeremy Smith  
AEI Consultants  
2500 Camino Diablo, Ste.#200  
Walnut Creek, CA 94597  
(925) 283-6000    FAX: (925) 944-2895

Email: jasmith@aeiconsultants.com  
cc:  
PO: WC084069  
ProjectNo: #298931; Foley Street

Bill to:  
Sara Guerin  
AEI Consultants  
2500 Camino Diablo, Ste. #200  
Walnut Creek, CA 94597  
AccountsPayable@AEIConsultants.c

Requested TAT: 5 days

Date Received: 04/17/2013

Date Printed: 04/18/2013

| Lab ID      | Client ID  | Matrix   | Collection Date | Hold                     | Requested Tests (See legend below) |   |   |   |   |   |   |   |   |    |    |    |  |
|-------------|------------|----------|-----------------|--------------------------|------------------------------------|---|---|---|---|---|---|---|---|----|----|----|--|
|             |            |          |                 |                          | 1                                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |  |
| 1304552-001 | SV-1       | Soil Gas | 4/16/2013 12:30 | <input type="checkbox"/> | A                                  | A | A | A |   |   |   |   |   |    |    |    |  |
| 1304552-002 | SV-2       | Soil Gas | 4/16/2013 13:24 | <input type="checkbox"/> | A                                  | A |   | A |   |   |   |   |   |    |    |    |  |
| 1304552-003 | SV-3       | Soil Gas | 4/16/2013 10:33 | <input type="checkbox"/> | A                                  | A |   | A |   |   |   |   |   |    |    |    |  |
| 1304552-004 | SV-4       | Soil Gas | 4/16/2013 11:31 | <input type="checkbox"/> | A                                  | A |   | A |   |   |   |   |   |    |    |    |  |
| 1304552-005 | SV-5       | Soil Gas | 4/16/2013 15:37 | <input type="checkbox"/> | A                                  | A |   | A |   |   |   |   |   |    |    |    |  |
| 1304552-006 | SV-6       | Soil Gas | 4/16/2013 14:07 | <input type="checkbox"/> | A                                  | A |   | A |   |   |   |   |   |    |    |    |  |
| 1304552-007 | SV-7       | Soil Gas | 4/16/2013 16:18 | <input type="checkbox"/> | A                                  | A |   | A |   |   |   |   |   |    |    |    |  |
| 1304552-008 | Trip Blank | Soil Gas | 4/16/2013       | <input type="checkbox"/> |                                    | A |   | A |   |   |   |   |   |    |    |    |  |
| 1304552-009 | SV-5 Dup   | Soil Gas | 4/16/2013 15:37 | <input type="checkbox"/> |                                    | A |   | A |   |   |   |   |   |    |    |    |  |

Test Legend:

|    |                      |    |                 |   |              |   |               |    |  |
|----|----------------------|----|-----------------|---|--------------|---|---------------|----|--|
| 1  | TMOSPHERICGAS_SG(UL/ | 2  | PRHELIUM SHROUD | 3 | PRNUSEDSUMMA | 4 | TO17_ST(UGM3) | 5  |  |
| 6  |                      | 7  |                 | 8 |              | 9 |               | 10 |  |
| 11 |                      | 12 |                 |   |              |   |               |    |  |

The following SamplIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A contain testgroup.

Prepared by: Maria Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **4/17/2013 3:45:00 PM**  
 Project Name: **#298931; Foley Street** LogIn Reviewed by: **Maria Venegas**  
 WorkOrder N°: **1304552** Matrix: Soil Gas Carrier: Rob Pringle (MAI Courier)

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
 Container/Temp Blank temperature Cooler Temp: NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:



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|   |  |                                   |
|---|--|-----------------------------------|
| AEI Consultants<br><br>2500 Camino Diablo, Ste.#200<br><br>Walnut Creek, CA 94597 | Client Project ID: #298931; Foley Street | Date Sampled: 04/16/13            |
|   | Client Contact: Jeremy Smith             | Date Received: 04/17/13           |
|   | Client P.O.: WC084069                    | Date Extracted: 04/19/13-04/22/13 |
|   |  | Date Analyzed: 04/19/13-04/22/13  |

### Light Gases, Atmospheric\*

Extraction Method: ASTM D 1946-90

Analytical Method: ASTM D 1946-90

Work Order: 1304552

| Lab ID                  | 1304552-001A | 1304552-002A | 1304552-003A | 1304552-004A | Reporting Limit for DF=1 and Pressure Ratio (Final/Initial) = 2 |   |
|-------------------------|--------------|--------------|--------------|--------------|---|---|
| Client ID               | SV-1         | SV-2         | SV-3         | SV-4         |   |   |
| Matrix                  | Soil Gas     | Soil Gas     | Soil Gas     | Soil Gas     |   |   |
| Initial Pressure (psia) | 13.04        | 12.50        | 12.83        | 12.98        |   |   |
| Final Pressure (psia)   | 25.98        | 24.91        | 25.56        | 25.88        |   |   |
| DF                      | 1            | 1            | 1            | 1            | Soil Gas  | W |

| Compound       | Concentration |         |         |         | µL/L | ug/L |
|----------------|---------------|---------|---------|---------|------|------|
| Carbon Dioxide | 3400          | 4600    | 160     | 4200    | 20   | NA   |
| Methane        | ND            | 1.8     | ND      | ND      | 2.0  | NA   |
| Oxygen         | 170,000       | 170,000 | 170,000 | 170,000 | 500  | NA   |

### Surrogate Recoveries (%)

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| %SS: | N/A | N/A | N/A | N/A |
|------|-----|-----|-----|-----|

Comments

\* vapor samples are reported in µL/L.

%SS = Percent Recovery of Surrogate Standard  
DF = Dilution Factor





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|   | Client Contact: Jeremy Smith             | Date Received: 04/17/13           |
|   | Client P.O.: WC084069                    | Date Extracted: 04/19/13-04/22/13 |
|   |  | Date Analyzed: 04/19/13-04/22/13  |

### Light Gases, Atmospheric\*

Extraction Method: ASTM D 1946-90

Analytical Method: ASTM D 1946-90

Work Order: 1304552

| Lab ID                  | 1304552-005A | 1304552-006A | 1304552-007A |  | Reporting Limit for<br>DF = 1<br>and Pressure Ratio<br>(Final/Initial) = 2 |   |
|-------------------------|--------------|--------------|--------------|--|--|---|
| Client ID               | SV-5         | SV-6         | SV-7         |  |  |   |
| Matrix                  | Soil Gas     | Soil Gas     | Soil Gas     |  |  |   |
| Initial Pressure (psia) | 12.89        | 14.36        | 11.86        |  |  |   |
| Final Pressure (psia)   | 25.68        | 28.63        | 23.62        |  |  |   |
| DF                      | 1            | 1            | 1            |  |  |   |
|                         |              |              |              |  | Soil Gas   | W |

| Compound       | Concentration |         |         | µL/L | ug/L |
|----------------|---------------|---------|---------|------|------|
| Carbon Dioxide | 10,000        | 260     | 10,000  | 20   | NA   |
| Methane        | 3.5           | 1.2     | ND      | 2.0  | NA   |
| Oxygen         | 160,000       | 180,000 | 160,000 | 500  | NA   |

### Surrogate Recoveries (%)

|      |     |     |     |  |
|------|-----|-----|-----|--|
| %SS: | N/A | N/A | N/A |  |
|------|-----|-----|-----|--|

Comments

\* vapor samples are reported in µL/L.

%SS = Percent Recovery of Surrogate Standard  
DF = Dilution Factor



|   |  |                                   |
|---|--|-----------------------------------|
| AEI Consultants<br><br>2500 Camino Diablo, Ste.#200<br><br>Walnut Creek, CA 94597 | Client Project ID: #298931; Foley Street | Date Sampled: 04/16/13            |
|   | Client Contact: Jeremy Smith             | Date Received: 04/17/13           |
|   | Client P.O.: WC084069                    | Date Extracted: 04/18/13-04/23/13 |
|   |  | Date Analyzed: 04/18/13-04/23/13  |

**Helium\***

Extraction method: ASTM D 1946-90

Analytical methods: ASTM D 1946-90

Work Order: 1304552

| Lab ID | Client ID  | Matrix   | Initial Pressure | Final Pressure | Helium | DF | % SS | Comments |
|--------|------------|----------|------------------|----------------|--------|----|------|----------|
| 001A   | SV-1       | Soil Gas | 13.04            | 25.98          | 0.017  | 1  | N/A  |          |
| 002A   | SV-2       | Soil Gas | 12.50            | 24.91          | 0.018  | 1  | N/A  |          |
| 003A   | SV-3       | Soil Gas | 12.83            | 25.56          | ND     | 1  | N/A  |          |
| 004A   | SV-4       | Soil Gas | 12.98            | 25.88          | ND     | 1  | N/A  |          |
| 005A   | SV-5       | Soil Gas | 12.89            | 25.68          | 1.8    | 1  | N/A  |          |
| 006A   | SV-6       | Soil Gas | 14.36            | 28.63          | 0.081  | 1  | N/A  |          |
| 007A   | SV-7       | Soil Gas | 11.86            | 23.62          | 0.013  | 1  | N/A  |          |
| 008A   | Trip Blank | Soil Gas | 14.99            | 29.88          | ND     | 1  | N/A  |          |
| 009A   | SV-5 Dup   | Soil Gas | 12.89            | 25.68          | ND     | 1  | N/A  |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |
|        |            |          |                  |                |        |    |      |          |

|  |         |      |      |       |    |
|--|---------|------|------|-------|----|
| Reporting Limit for DF =1;<br>ND means not detected at or<br>above the reporting limit | W       | psia | psia | NA    | NA |
|  | SoilGas | psia | psia | 0.005 | %  |

\* vapor samples are reported in %.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



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|   | Client P.O.: WC084069                    | Date Extracted: 04/24/13-04/25/13 |
|   |  | Date Analyzed: 04/24/13-04/25/13  |

**Volatile Organic Compounds in µg/m<sup>3</sup>\***

Extraction Method: TO17

Analytical Method: TO17

Work Order: 1304552

|                   |              |              |              |              |                          |   |
|-------------------|--------------|--------------|--------------|--------------|--------------------------|---|
| Lab ID            | 1304552-001A | 1304552-002A | 1304552-003A | 1304552-004A | Reporting Limit for DF=1 |   |
| Client ID         | SV-1         | SV-2         | SV-3         | SV-4         |                          |   |
| Matrix            | Soil Gas     | Soil Gas     | Soil Gas     | Soil Gas     |                          |   |
| DF                | 1            | 1            | 1            | 1            |                          |   |
| Sample Volume (L) | 0.00         | 0.00         | 0.00         | 0.00         | Soil Gas                 | W |

| Compound       | Concentration    |    |    |    | µg/m <sup>3</sup> | ug/L |
|----------------|------------------|----|----|----|-------------------|------|
|                | TPH-Gas (C6-C12) | ND | ND | ND | ND                | 2500 |
| Benzene        | ND               | ND | ND | ND | 25                | NA   |
| Ethylbenzene   | ND               | ND | ND | ND | 25                | NA   |
| Naphthalene    | ND               | ND | ND | ND | 25                | NA   |
| Toluene        | ND               | ND | ND | ND | 25                | NA   |
| Xylenes, Total | ND               | ND | ND | ND | 25                | NA   |

**Surrogate Recoveries (%)**

|       |     |     |     |     |  |
|-------|-----|-----|-----|-----|--|
| %SS2: | 106 | 106 | 106 | 107 |  |
| %SS3: | 92  | 93  | 93  | 92  |  |

**Comments**

\*Samples reported in µg/m<sup>3</sup>; reporting limit may change due to variable volume of air.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; (&) low surrogate due to matrix interference.





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|   | Client Contact: Jeremy Smith             | Date Received: 04/17/13           |
|   | Client P.O.: WC084069                    | Date Extracted: 04/24/13-04/25/13 |
|   |  | Date Analyzed: 04/24/13-04/25/13  |

**Volatile Organic Compounds in µg/m<sup>3</sup>\***

Extraction Method: TO17

Analytical Method: TO17

Work Order: 1304552

|                   |              |              |              |  |                          |  |
|-------------------|--------------|--------------|--------------|--|--------------------------|--|
| Lab ID            | 1304552-006A | 1304552-007A | 1304552-008A |  | Reporting Limit for DF=1 |  |
| Client ID         | SV-6         | SV-7         | Trip Blank   |  |                          |  |
| Matrix            | Soil Gas     | Soil Gas     | Soil Gas     |  |                          |  |
| DF                | 1            | 1            | 1            |  |                          |  |
| Sample Volume (L) | 0.00         | 0.00         | 0.00         |  |                          |  |

| Compound         | Concentration |    |    | µg/m <sup>3</sup> | ug/L |
|------------------|---------------|----|----|-------------------|------|
|                  |               |    |    |                   |      |
| TPH-Gas (C6-C12) | ND            | ND | ND | 2500              | NA   |
| Benzene          | ND            | ND | ND | 25                | NA   |
| Ethylbenzene     | ND            | ND | ND | 25                | NA   |
| Naphthalene      | ND            | ND | ND | 25                | NA   |
| Toluene          | ND            | ND | ND | 25                | NA   |
| Xylenes, Total   | ND            | ND | ND | 25                | NA   |

**Surrogate Recoveries (%)**

|       |     |     |    |  |  |
|-------|-----|-----|----|--|--|
| %SS2: | 107 | 106 | 82 |  |  |
| %SS3: | 93  | 93  | 93 |  |  |

**Comments**

\*Samples reported in µg/m<sup>3</sup>; reporting limit may change due to variable volume of air.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

# surrogate diluted out of range or coelutes with another peak; (&) low surrogate due to matrix interference.



**QC SUMMARY REPORT FOR ASTM D 1946-90**

W.O. Sample Matrix: SoilGas

QC Matrix: SoilGas

BatchID: 76535

WorkOrder: 1304552

| EPA Method: ASTM D 1946-90 |        | Extraction: ASTM D 1946-90 |        |        |        |        | Spiked Sample ID: N/A   |     |          |  |
|----------------------------|--------|----------------------------|--------|--------|--------|--------|-------------------------|-----|----------|--|
| Analyte                    | Sample | Spiked                     | MS     | MSD    | MS-MSD | LCS    | Acceptance Criteria (%) |     |          |  |
|                            | µL/L   | µL/L                       | % Rec. | % Rec. | % RPD  | % Rec. | MS / MSD                | RPD | LCS      |  |
| Carbon Dioxide             | N/A    | 100                        | N/A    | N/A    | N/A    | 105    | N/A                     | N/A | 70 - 130 |  |
| Methane                    | N/A    | 100                        | N/A    | N/A    | N/A    | 112    | N/A                     | N/A | 70 - 130 |  |
| Oxygen                     | N/A    | 7000                       | N/A    | N/A    | N/A    | 82.4   | N/A                     | N/A | 70 - 130 |  |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

BATCH 76535 SUMMARY

| Lab ID       | Date Sampled      | Date Extracted | Date Analyzed     | Lab ID       | Date Sampled      | Date Extracted | Date Analyzed     |
|--------------|-------------------|----------------|-------------------|--------------|-------------------|----------------|-------------------|
| 1304552-001A | 04/16/13 12:30 PM | 04/19/13       | 04/19/13 2:07 PM  | 1304552-001A | 04/16/13 12:30 PM | 04/22/13       | 04/22/13 11:06 AM |
| 1304552-001A | 04/16/13 12:30 PM | 04/22/13       | 04/22/13 2:03 PM  | 1304552-002A | 04/16/13 1:24 PM  | 04/19/13       | 04/19/13 2:28 PM  |
| 1304552-002A | 04/16/13 1:24 PM  | 04/22/13       | 04/22/13 11:18 AM | 1304552-002A | 04/16/13 1:24 PM  | 04/22/13       | 04/22/13 2:27 PM  |
| 1304552-003A | 04/16/13 10:33 AM | 04/19/13       | 04/19/13 2:50 PM  | 1304552-003A | 04/16/13 10:33 AM | 04/22/13       | 04/22/13 11:55 AM |
| 1304552-004A | 04/16/13 11:31 AM | 04/19/13       | 04/19/13 3:11 PM  | 1304552-004A | 04/16/13 11:31 AM | 04/22/13       | 04/22/13 12:20 PM |
| 1304552-004A | 04/16/13 11:31 AM | 04/22/13       | 04/22/13 2:52 PM  | 1304552-005A | 04/16/13 3:37 PM  | 04/19/13       | 04/19/13 4:04 PM  |
| 1304552-005A | 04/16/13 3:37 PM  | 04/22/13       | 04/22/13 12:44 PM | 1304552-005A | 04/16/13 3:37 PM  | 04/22/13       | 04/22/13 3:22 PM  |
| 1304552-006A | 04/16/13 2:07 PM  | 04/19/13       | 04/19/13 4:26 PM  | 1304552-006A | 04/16/13 2:07 PM  | 04/22/13       | 04/22/13 1:09 PM  |
| 1304552-007A | 04/16/13 4:18 PM  | 04/19/13       | 04/19/13 4:47 PM  | 1304552-007A | 04/16/13 4:18 PM  | 04/22/13       | 04/22/13 1:33 PM  |
| 1304552-007A | 04/16/13 4:18 PM  | 04/22/13       | 04/22/13 3:47 PM  |              |                   |                |                   |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**QC SUMMARY REPORT FOR ASTM D 1946-90**

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 76517

WorkOrder: 1304552

| EPA Method: ASTM D 1946-90 |        | Extraction: ASTM D 1946-90 |        |        |        |        | Spiked Sample ID: N/A   |     |          |  |
|----------------------------|--------|----------------------------|--------|--------|--------|--------|-------------------------|-----|----------|--|
| Analyte                    | Sample | Spiked                     | MS     | MSD    | MS-MSD | LCS    | Acceptance Criteria (%) |     |          |  |
|                            | %      | %                          | % Rec. | % Rec. | % RPD  | % Rec. | MS / MSD                | RPD | LCS      |  |
| Helium                     | N/A    | 0.010                      | N/A    | N/A    | N/A    | 105    | N/A                     | N/A | 60 - 140 |  |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

BATCH 76517 SUMMARY

| Lab ID       | Date Sampled | Date Extracted | Date Analyzed    | Lab ID       | Date Sampled     | Date Extracted | Date Analyzed    |
|--------------|--------------|----------------|------------------|--------------|------------------|----------------|------------------|
| 1304552-008A | 04/16/13     | 04/18/13       | 04/18/13 4:39 PM | 1304552-009A | 04/16/13 3:37 PM | 04/18/13       | 04/18/13 4:52 PM |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**QC SUMMARY REPORT FOR ASTM D 1946-90**

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 76574

WorkOrder: 1304552

| EPA Method: ASTM D 1946-90 |        | Extraction: ASTM D 1946-90 |        |        |        |        | Spiked Sample ID: N/A   |     |          |  |
|----------------------------|--------|----------------------------|--------|--------|--------|--------|-------------------------|-----|----------|--|
| Analyte                    | Sample | Spiked                     | MS     | MSD    | MS-MSD | LCS    | Acceptance Criteria (%) |     |          |  |
|                            | %      | %                          | % Rec. | % Rec. | % RPD  | % Rec. | MS / MSD                | RPD | LCS      |  |
| Helium                     | N/A    | 0.010                      | N/A    | N/A    | N/A    | 105    | N/A                     | N/A | 60 - 140 |  |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

BATCH 76574 SUMMARY

| Lab ID       | Date Sampled      | Date Extracted | Date Analyzed     | Lab ID       | Date Sampled      | Date Extracted | Date Analyzed     |
|--------------|-------------------|----------------|-------------------|--------------|-------------------|----------------|-------------------|
| 1304552-001A | 04/16/13 12:30 PM | 04/23/13       | 04/23/13 12:32 PM | 1304552-002A | 04/16/13 1:24 PM  | 04/23/13       | 04/23/13 12:45 PM |
| 1304552-003A | 04/16/13 10:33 AM | 04/23/13       | 04/23/13 12:58 PM | 1304552-004A | 04/16/13 11:31 AM | 04/23/13       | 04/23/13 1:11 PM  |
| 1304552-005A | 04/16/13 3:37 PM  | 04/23/13       | 04/23/13 1:37 PM  | 1304552-006A | 04/16/13 2:07 PM  | 04/23/13       | 04/23/13 1:24 PM  |
| 1304552-007A | 04/16/13 4:18 PM  | 04/23/13       | 04/23/13 1:50 PM  |              |                   |                |                   |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification 1644

 QA/QC Officer



### QC SUMMARY REPORT FOR TO17

W.O. Sample Matrix: Sorbent Tube

QC Matrix: Sorbent Tube

BatchID: 76697

WorkOrder: 1304552

| EPA Method: TO17 |                   | Extraction: TO17  |        |        |        |        | Spiked Sample ID: N/A   |     |          |  |
|------------------|-------------------|-------------------|--------|--------|--------|--------|-------------------------|-----|----------|--|
| Analyte          | Sample            | Spiked            | MS     | MSD    | MS-MSD | LCS    | Acceptance Criteria (%) |     |          |  |
|                  | µg/m <sup>3</sup> | µg/m <sup>3</sup> | % Rec. | % Rec. | % RPD  | % Rec. | MS / MSD                | RPD | LCS      |  |
| Benzene          | N/A               | 100               | N/A    | N/A    | N/A    | 90.2   | N/A                     | N/A | 60 - 140 |  |
| Ethylbenzene     | N/A               | 100               | N/A    | N/A    | N/A    | 116    | N/A                     | N/A | 60 - 140 |  |
| Naphthalene      | N/A               | 100               | N/A    | N/A    | N/A    | 111    | N/A                     | N/A | 60 - 140 |  |
| Toluene          | N/A               | 100               | N/A    | N/A    | N/A    | 111    | N/A                     | N/A | 60 - 140 |  |
| Xylenes, Total   | N/A               | 300               | N/A    | N/A    | N/A    | 118    | N/A                     | N/A | 60 - 140 |  |
| %SS2:            | N/A               | 100               | N/A    | N/A    | N/A    | 105    | N/A                     | N/A | 60 - 140 |  |
| %SS3:            | N/A               | 100               | N/A    | N/A    | N/A    | 100    | N/A                     | N/A | 60 - 140 |  |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
 NONE

#### BATCH 76697 SUMMARY

| Lab ID       | Date Sampled      | Date Extracted | Date Analyzed     | Lab ID       | Date Sampled      | Date Extracted | Date Analyzed     |
|--------------|-------------------|----------------|-------------------|--------------|-------------------|----------------|-------------------|
| 1304552-001A | 04/16/13 12:30 PM | 04/24/13       | 04/24/13 8:24 PM  | 1304552-002A | 04/16/13 1:24 PM  | 04/24/13       | 04/24/13 9:19 PM  |
| 1304552-003A | 04/16/13 10:33 AM | 04/25/13       | 04/25/13 12:59 AM | 1304552-004A | 04/16/13 11:31 AM | 04/24/13       | 04/24/13 10:14 PM |
| 1304552-006A | 04/16/13 2:07 PM  | 04/25/13       | 04/25/13 12:04 AM | 1304552-007A | 04/16/13 4:18 PM  | 04/24/13       | 04/24/13 11:09 PM |
| 1304552-008A | 04/16/13          | 04/25/13       | 04/25/13 9:29 AM  |              |                   |                |                   |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.  
 # surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.