



July 11, 2019

Mr. Ryan Warner  
Magpie Operating, Inc.  
2707 South County Road 11  
Loveland, Colorado 80537

**State #1-36  
Production Pit Assessment Report  
40.714817 / -103.462663  
NE¼ NE¼ SEC.36 T9N R55W 6PM  
Logan County, Colorado  
Facility ID 116333  
Remediation # 6103**

Dear Mr. Warner,

Eagle Environmental Consulting, Inc. (EAGLE) is pleased to present the results from the Production Pit Assessment completed at the State #1-36 site (site).

## **1.0 SITE BACKGROUND**

On June 13, 2019, EAGLE completed surficial and subsurface assessment activities on behalf of Magpie Operating, Inc (Magpie) at the site in response to the closure of the production pits (3) onsite. Following backfill of the previous production pit locations, EAGLE collected six (6) soil samples from the former pit locations. Groundwater was not observed during assessment activities.

The following narrative details assessment activities completed at the site.

### **1.1 Site Description**

The State #1-36 site is located within the northeast quarter of the northeast quarter of Section 36, township 9 North, Range 55 West, of the 6<sup>th</sup> Prime Meridian, in Logan County, Colorado. The historical production pits associated with the site were located at latitude: 40.714817 and longitude: -103.462663. A topographic site location map is presented in Figure 1 and an aerial site location map is presented in Figure 2.

### **1.2 Site Geology**

The soil lithology observed at the site consists of dense, gravelly sand from the ground surface to approximately 0.75 feet below ground surface (bgs) underlain by loose, silty sand from approximately 0.75 feet bgs to 5 feet bgs. Groundwater was not observed during assessment activities.

## 2.0 SITE ASSESSMENT ACTIVITIES

On June 13, 2019, utilizing a hand auger, EAGLE collected soil samples adjacent to the former earthen-berm production pits at the site. Upon arrival, EAGLE observed the site had been decommissioned and no facilities were present. EAGLE collected soil samples to determine if adsorbed petroleum hydrocarbon impacts existed above Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 regulatory limits. Proposed assessment locations (3; one per previous production pit location) were based on historical Google Earth aerial photography and notes provided to EAGLE.

A portion of each soil sample was placed in a sealable plastic bag for volatile organic compound (VOC) headspace analysis utilizing a field-calibrated, photoionization detector (PID). Another portion of the soil sample was placed in a 2-ounce glass jar and packed in an iced cooler. A total of six (6) soil samples (SS-01@0-1', SS-01@4-5', SS-02@0-1', SS-02@4-5', SS-03@0-1', and SS-03@4-5') were submitted to Origins Laboratory, Inc. (Origins) under standard chain of custody procedures.

Soil samples SS-01@4-5', SS-02@4-5', and SS-03@4-5' were analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), and total petroleum hydrocarbons – gasoline range organics (TPH-GRO) following EPA Method 8260D, and total petroleum hydrocarbons – diesel range organics (TPH-DRO) following EPA Method 8015D. Soil samples SS-01@0-1', SS-02@0-1', and SS-03@0-1' were analyzed for Sodium Adsorption Ratio (SAR) following United State Department of Agriculture (USDA) Method 20B, Specific Conductance (EC) following USDA Method 3, and pH following Environmental Protection Agency (EPA) Method 9045D. The soil samples were received with the required holding time for each laboratory analysis. Spatial location of each soil sample was recorded using a Trimble GeoXT 6000 series instrument. A site map presented soil sample locations is included in Figure 3.

### 2.1 Soil Analytical Results

Based on laboratory analytical results:

- Soil samples SS-01@4-5', SS-02@4-5', and SS-03@4-5' did not contain concentrations of BTEX, or total petroleum hydrocarbons (TPH) exceeding COGCC Table 910-1 regulatory limits.
- Soil samples SS-01@0-1', SS-02@0-1', and SS-03@0-1' had EC values below the applicable COGCC Table 910-1 regulatory limit.
- Soil sample SS-03@0-1' had a pH value within the applicable COGCC Table 910-1 regulatory limit range.
- Soil samples SS-01@0-1', SS-02@0-1', and SS-03@0-1' had SAR values (34.52, 32.75, and 20.71, respectively) exceeding the COGCC Table 910-1 regulatory limit of 12.
- Soil samples SS-01@0-1' and SS-02@0-1' had pH values (9.61 and 9.42, respectively) outside the COGCC Table 910-1 regulatory limit range of 6 to 9.

Soil analytical results are summarized in Table 1 and presented in Figure 3. The laboratory analytical report is included in Attachment A.

### 3.0 CONCLUSIONS

Based on the information presented in this report, EAGLE concludes the following:

- On June 13, 2019, EAGLE completed surficial and subsurface assessment activities adjacent to the former earthen-berm production pit locations at the site.
- Soil samples SS-01@4-5', SS-02@4-5', and SS-03@4-5' did not contain concentrations of BTEX, or TPH exceeding COGCC Table 910-1 regulatory limits.
- Soil samples SS-01@0-1', SS-02@0-1', and SS-03@0-1' had EC values below the applicable COGCC Table 910-1 regulatory limit.
- Soil sample SS-03@0-1' had a pH value within the applicable COGCC Table 910-1 regulatory limit range.
- Soil samples SS-01@0-1', SS-02@0-1', and SS-03@0-1' had SAR values exceeding the COGCC Table 910-1 regulatory limit of 12.
- Soil samples SS-01@0-1' and SS-02@0-1' had pH values outside the COGCC Table 910-1 regulatory limit range of 6 to 9.

### 4.0 RECOMMENDATIONS

Based on the information presented in this report, EAGLE recommends the following:

- Complete reclamation activities to below the root zone to address soil with elevated pH and SAR values.

EAGLE sincerely appreciates the opportunity to provide our services. If you have any questions or require further information, please contact us at (303) 433-0479.

Sincerely,

**EAGLE ENVIRONMENTAL CONSULTING, INC.**



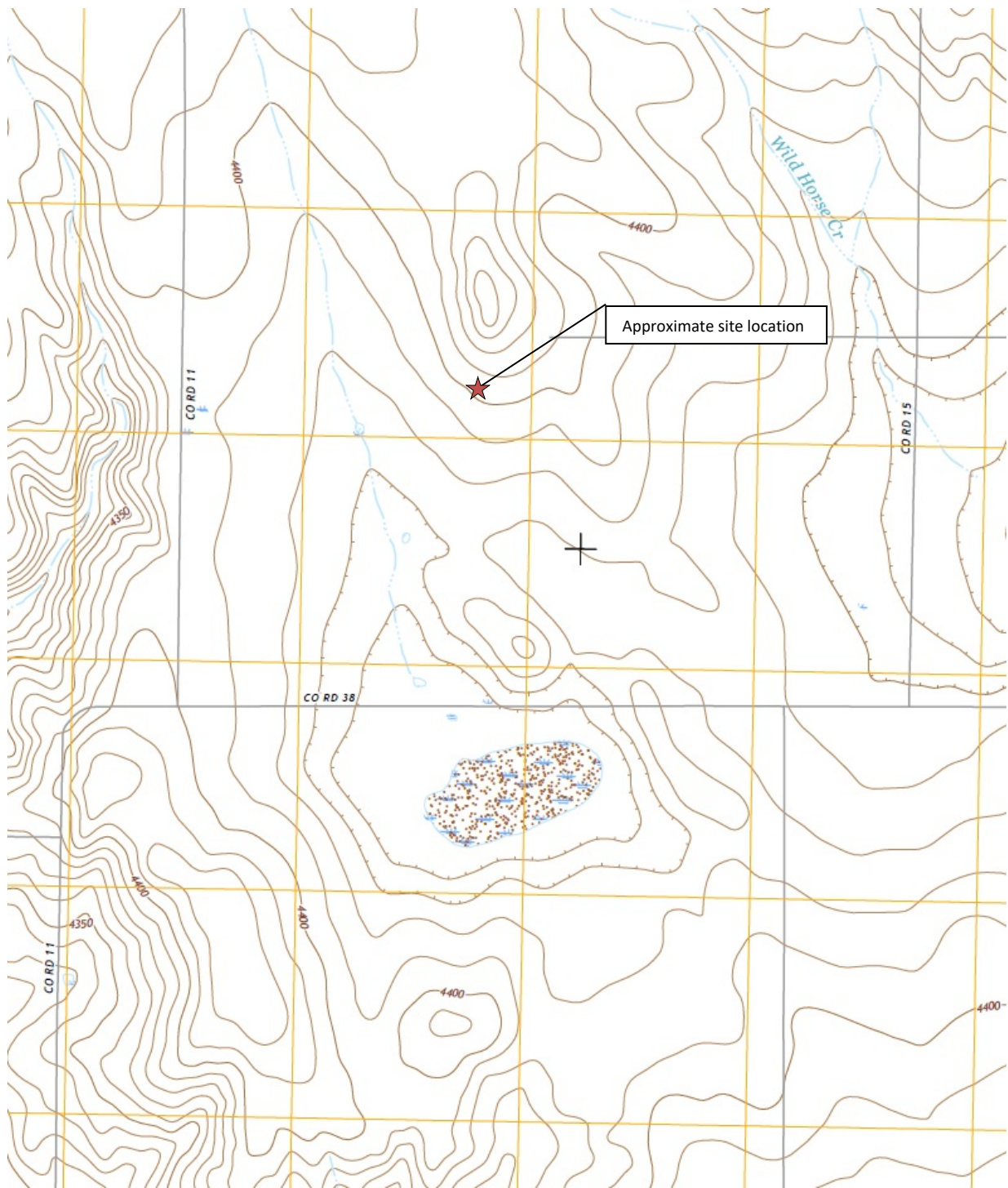
Andrew Newberry  
Project Geologist

## **FIGURES**

**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Soil Analytical Map**



**Topographic Site Location Map**

State #1-36  
 Production Pit Assessment  
 40.714817 / -103.462663  
 NE¼ NE¼ SEC.36 T9N R55W 6PM  
 Logan County, Colorado  
 Facility ID 116333  
 Remediation # 6103

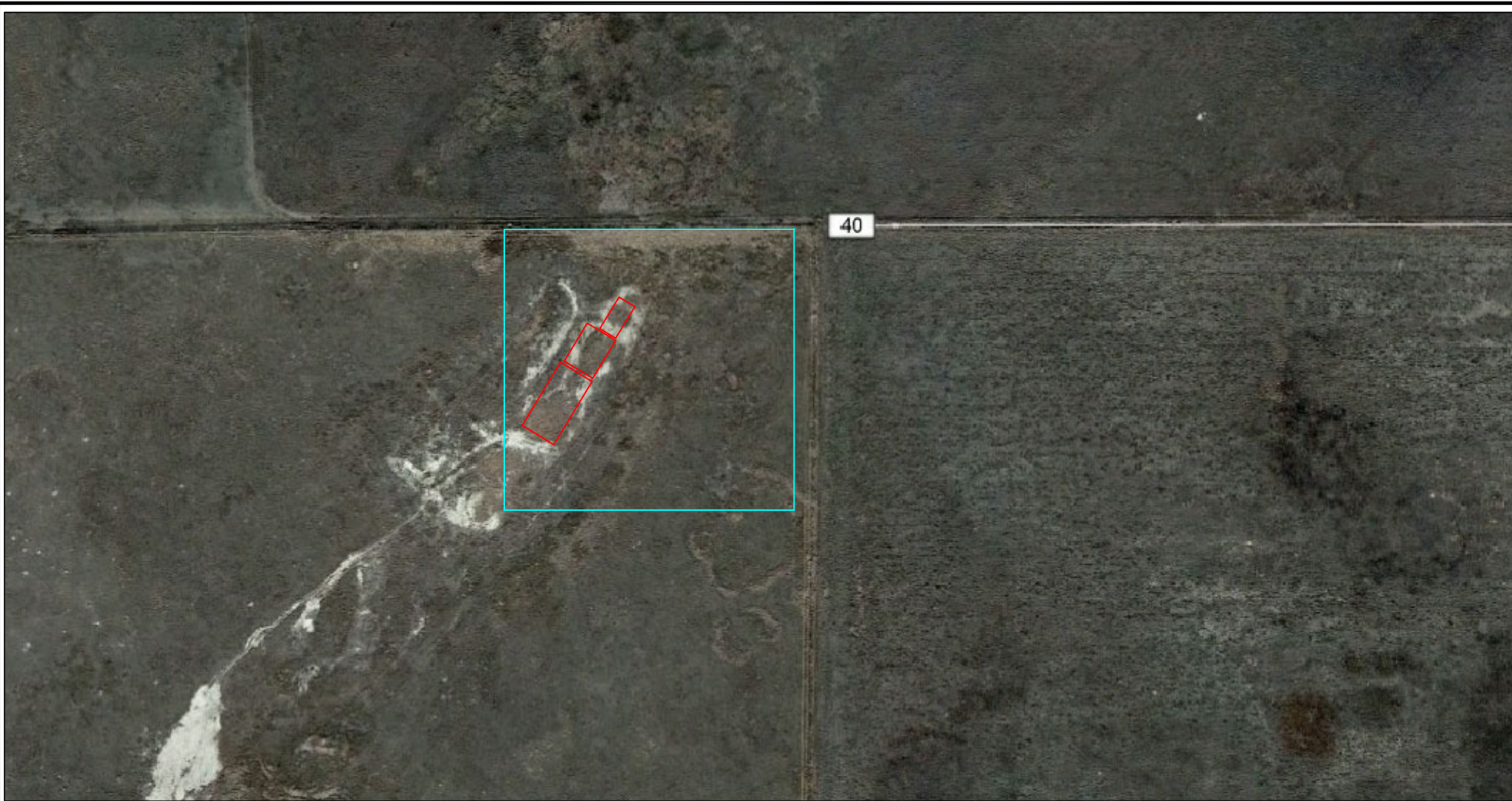


**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, INC.

Source: USGS 7.5 Minute Topographic  
 Map, Wild Horse Lake, CO Quadrangle  
 2016

**Figure 1**





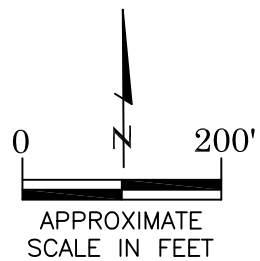
# **LEGEND**



APPROXIMATE DECOMMISSIONED STATE #1-36 FACILITY LOCATION



APPROXIMATE LOCATIONS OF PREVIOUS EARTHERN PRODUCTION PITS (3)  
(FACILITY ID 116333)



## AERIAL SITE LOCATION MAP

STATE #1-36  
PRODUCTION PIT ASSESSMENT  
40.714817 / -103.462663  
NE1/4 NE1/4 SEC.36 T9N R55W 6PM  
LOGAN COUNTY, COLORADO  
FACILITY 116333  
REMEDATION # 6103

DATE:  
05/29/19

FIG. NO.  
2

DRAWN BY:  
amn



**EAGLE**  
ENVIRONMENTAL  
CONSULTING, INC.  
4101 INCA STREET, DENVER, CO 80211  
Ph: 303-433-0479 • F: 303-325-5449

|                   |             |
|-------------------|-------------|
| SS-01@0-1'        | SS-01@4-5'  |
| 06/13/19          | 06/13/19    |
| 0-1'              | 4-5'        |
| B = NA            | B = <0.0500 |
| T = NA            | T = <0.0500 |
| E = NA            | E = <0.0500 |
| X = NA            | X = <0.0500 |
| G = NA            | G = <5.00   |
| D = NA            | D = <50.0   |
| EC = 0.873        | EC = NA     |
| SAR= <b>34.52</b> | SAR= NA     |
| pH = <b>9.61</b>  | pH = NA     |

SS-01  
PIT #1 (40.716375 / -103.461063)

SS-02  
PIT #2 (40.716230 / -103.461172)

SS-03  
PIT #3 (40.716054 / -103.461320)

|                   |             |
|-------------------|-------------|
| SS-02@0-1'        | SS-02@4-5'  |
| 06/13/19          | 06/13/19    |
| 0-1'              | 4-5'        |
| B = NA            | B = <0.0500 |
| T = NA            | T = <0.0500 |
| E = NA            | E = <0.0500 |
| X = NA            | X = <0.0500 |
| G = NA            | G = <5.00   |
| D = NA            | D = <50.0   |
| EC = 0.793        | EC = NA     |
| SAR= <b>32.75</b> | SAR= NA     |
| pH = <b>9.42</b>  | pH = NA     |

|                   |             |
|-------------------|-------------|
| SS-03@0-1'        | SS-03@4-5'  |
| 06/13/19          | 06/13/19    |
| 0-1'              | 4-5'        |
| B = NA            | B = <0.0500 |
| T = NA            | T = <0.0500 |
| E = NA            | E = <0.0500 |
| X = NA            | X = <0.0500 |
| G = NA            | G = <5.00   |
| D = NA            | D = <50.0   |
| EC = 0.349        | EC = NA     |
| SAR= <b>20.71</b> | SAR= NA     |
| pH = 8.92         | pH = NA     |

NOTE: ALL FACILITIES HAVE BEEN REMOVED. ASSESSMENT LOCATIONS BASED ON HISTORICAL AERIAL PHOTOGRAPHY (GOOGLE EARTH) & NOTES PROVIDED TO EAGLE ENVIRONMENTAL CONSULTING, INC.

## LEGEND

- HISTORICAL EARTHEN PRODUCTION PIT LOCATIONS
- PIT #1 (40.716375 / -103.461063)
- PIT #2 (40.716230 / -103.461172)
- PIT #3 (40.716054 / -103.461320)
- APPROXIMATE SOIL SAMPLE LOCATIONS

## PARAMETERS

|                                      |
|--------------------------------------|
| SOIL SAMPLE LOCATION                 |
| DATE                                 |
| DEPTH (FEET)                         |
| B = BENZENE (mg/kg)                  |
| T = TOLUENE (mg/kg)                  |
| E = ETHYLBENZENE (mg/kg)             |
| X = TOTAL XYLENES (mg/kg)            |
| G = TPH-GRO (mg/kg)                  |
| D = TPH-DRO (mg/kg)                  |
| EC = SPECIFIC CONDUCTANCE (mmhos/cm) |
| SAR= SODIUM ADSORPTION RATIO         |
| pH = pH (pH UNITS)                   |

mg/kg = MILLIGRAMS PER KILOGRAM

mmhos/cm = MILLIMHOS PER CENTIMETER

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS

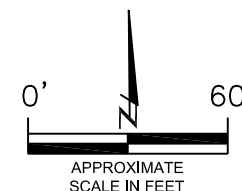
TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS

NA = NOT ANALYZED

NOTE: VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES PRESENTED IN **BOLD** TYPEFACE CONTAIN CONCENTRATIONS EXCEEDING COGCC TABLE 910-1 REGULATORY LIMITS FOR THAT COMPOUND

COGCC - COLORADO OIL AND GAS CONSERVATION COMMISSION

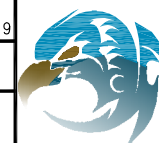


SOIL ANALYTICAL MAP  
STATE #1-36  
PRODUCTION PIT ASSESSMENT  
40.714817 / -103.462663  
NE1/4 NE1/4 SEC.36 T9N R55W 6PM  
LOGAN COUNTY, COLORADO  
FACILITY ID 116333  
REMEDATION # 6103

DATE:  
07/08/19

DRAWN BY:  
amn

FIG.  
NO. 3



**EAGLE**  
ENVIRONMENTAL  
CONSULTING, INC.  
4101 INCA STREET, DENVER, CO 80211  
Ph: 303-433-0479 • F: 303-435-5449

## **TABLES**

**Table 1:     Soil Analytical Results Summary**



TABLE 1  
SOIL ANALYTICAL RESULTS SUMMARY  
STATE #1-36  
PRODUCTION PIT ASSESSMENT  
40.714817 / -103.462663  
NE1/4 NE1/4 SEC.36 T9N R55W 6PM  
LOGAN COUNTY, COLORADO  
FACILITY ID 116333  
REMEDATION # 6103

| Sample Location<br>(Latitude/Longitude)  | Date     | Approximate<br>Depth<br>(feet) | Benzene<br>(mg/kg) | Toluene<br>(mg/kg) | Ethylbenzene<br>(mg/kg) | Total<br>Xylenes<br>(mg/kg) | TPH-GRO<br>(mg/kg) | TPH-DRO<br>(mg/kg) | Specific<br>Conductance<br>(mmhos/cm) | pH<br>(pH units) | SAR           |
|--|----------|--------------------------------|--------------------|--------------------|-------------------------|-----------------------------|--------------------|--------------------|---------------------------------------|------------------|---------------|
| <b>COGCC Table 910-1 Regulatory Limits (mg/kg)</b>   |          |                                | <b>0.17</b>        | <b>85</b>          | <b>100</b>              | <b>175</b>                  | <b>500</b>         |                    | <b>&lt;4</b>                          | <b>6 to 9</b>    | <b>&lt;12</b> |
| SS-01 @ 0-1'<br>(40.716375 / -103.461063)  | 06/13/19 | 0-1                            | NA                 | NA                 | NA                      | NA                          | NA                 | NA                 | 0.873                                 | 9.61             | 34.52         |
| SS-01 @ 4-5'<br>(40.716375 / -103.461063)  | 06/13/19 | 4-5.0                          | <0.0500            | <0.0500            | <0.0500                 | <0.0500                     | <5.00              | <50.0              | NA                                    | NA               | NA            |
| SS-02 @ 0-1'<br>(40.716230 / -103.461172)  | 06/13/19 | 0-1                            | NA                 | NA                 | NA                      | NA                          | NA                 | NA                 | 0.793                                 | 9.42             | 32.75         |
| SS-02 @ 4-5'<br>(40.716230 / -103.461172)  | 06/13/19 | 4-5.0                          | <0.0500            | <0.0500            | <0.0500                 | <0.0500                     | <5.00              | <50.0              | NA                                    | NA               | NA            |
| SS-03 @ 0-1'<br>(40.716054 / -103.461320)  | 06/13/19 | 0-1                            | NA                 | NA                 | NA                      | NA                          | NA                 | NA                 | 0.349                                 | 8.92             | 20.71         |
| SS-03 @ 4-5'<br>(40.716054 / -103.461320)  | 06/13/19 | 4-5.0                          | <0.0500            | <0.0500            | <0.0500                 | <0.0500                     | <5.00              | <50.0              | NA                                    | NA               | NA            |
| COGCC = Colorado Oil and Gas Conservation Commission<br>mg/kg = milligrams per kilogram<br>mmhos/cm = millimhos per centimeter<br>NA = Not Analyzed<br>TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics<br>TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics<br>SAR = Sodium Adsorption Ratio<br>Note: Values presented with a less than symbol (<) indicate concentrations were not observed at or above the laboratory reporting limit.<br>Values presented in <b>bold</b> typeface exceed the COGCC Table 910-1 regulatory limits for that compound. |          |                                |                    |                    |                         |                             |                    |                    |                                       |                  |               |

## **ATTACHMENT A**

### **Laboratory Analytical Report**



June 19, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

4101 Inca Street

Denver

CO 80211

**Project Name - Magpie - State #1-36**

**Project Number - [none]**

Attached are your analytical results for Magpie - State #1-36 received by Origins Laboratory, Inc. June 13, 2019. This project is associated with Origins project number Y906260-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

## CROSS REFERENCE REPORT

| Sample ID  | Laboratory ID | Matrix | Date Sampled        | Date Received    |
|------------|---------------|--------|---------------------|------------------|
| SS-01@0-1' | Y906260-01    | Soil   | June 13, 2019 12:00 | 06/13/2019 15:15 |
| SS-01@4-5' | Y906260-02    | Soil   | June 13, 2019 12:10 | 06/13/2019 15:15 |
| SS-02@0-1' | Y906260-03    | Soil   | June 13, 2019 12:12 | 06/13/2019 15:15 |
| SS-02@4-5' | Y906260-04    | Soil   | June 13, 2019 12:17 | 06/13/2019 15:15 |
| SS-03@0-1' | Y906260-05    | Soil   | June 13, 2019 12:20 | 06/13/2019 15:15 |
| SS-03@4-5' | Y906260-06    | Soil   | June 13, 2019 12:30 | 06/13/2019 15:15 |

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver

CO

80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: Y906260

Client: Eagle

Client Project ID: State 1-36

Checklist Completed by: JG

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 6/14/2019

Airbill #: N/A

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 1 / 30 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T003

| Requirement Description   | Yes                                 | No                                  | N/A                                 | Comments (if any) |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| Is there ice present (document if blue ice is used)   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |
| Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |
| Were all samples received intact <sup>(1)</sup> ?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                   |
| Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |                   |
| For volatiles in water – Is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH) | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):   |                                     |                                     |                                     |                   |

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 6/17/19

Origins Laboratory, Inc.

[Signature]

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

SS-01@0-1'

6/13/2019 12:00:00PM

| Analyte | Result | Reporting<br>Limit | Units | Dilution | Batch | Analyst | Prepared | Analyzed | Notes |
|---------|--------|--------------------|-------|----------|-------|---------|----------|----------|-------|
|---------|--------|--------------------|-------|----------|-------|---------|----------|----------|-------|

AAL, Inc.

Y906260-01 (Soil)

### Metals (Saturated Paste Prep)

|           |       |      |   |          |  |            |            |
|-----------|-------|------|---|----------|--|------------|------------|
| Calcium   | 1.23  | me/L | 1 | '[none]' |  | 06/17/2019 | 06/19/2019 |
| Magnesium | 0.55  | "    | " | "        |  | "          | "          |
| Sodium    | 32.57 | "    | " | "        |  | "          | "          |

### pH in Soil by EPA 9045D

|    |      |          |   |         |      |            |            |
|----|------|----------|---|---------|------|------------|------------|
| pH | 9.61 | pH Units | 1 | B9F1405 | OLAB | 06/14/2019 | 06/14/2019 |
|----|------|----------|---|---------|------|------------|------------|

### SAR by 20B Saturated Paste

|     |       |  |   |          |  |            |            |
|-----|-------|--|---|----------|--|------------|------------|
| SAR | 34.52 |  | 1 | '[none]' |  | 06/17/2019 | 06/19/2019 |
|-----|-------|--|---|----------|--|------------|------------|

### Specific Conductance by Modified 9050A

|                           |       |         |          |   |         |      |            |            |
|---------------------------|-------|---------|----------|---|---------|------|------------|------------|
| Specific Conductance (EC) | 0.873 | 0.00500 | mmhos/cm | 1 | B9F1406 | OLAB | 06/14/2019 | 06/14/2019 |
|---------------------------|-------|---------|----------|---|---------|------|------------|------------|

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

SS-01@4-5'

6/13/2019 12:10:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Analyst | Prepared | Analyzed | Notes |
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|

**Origins Laboratory, Inc.**  
**Y906260-02 (Soil)**

**BTEX/TVPH by EPA 8260D**

|                             |    |        |       |    |         |     |            |            |   |
|-----------------------------|----|--------|-------|----|---------|-----|------------|------------|---|
| Benzene                     | ND | 0.0500 | mg/kg | 25 | B9F1401 | KDK | 06/14/2019 | 06/14/2019 | U |
| Toluene                     | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Ethylbenzene                | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Xylenes, total              | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Gasoline Range Hydrocarbons | ND | 5.00   | "     | "  | "       | KDK | "          | "          | U |

|                                  |        |        |   |   |   |
|----------------------------------|--------|--------|---|---|---|
| Surrogate: 1,2-Dichloroethane-d4 | 108 %  | 70-130 | " | " | " |
| Surrogate: Toluene-d8            | 103 %  | 70-130 | " | " | " |
| Surrogate: 4-Bromofluorobenzene  | 93.9 % | 70-130 | " | " | " |

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

|                        |        |        |       |   |         |     |            |            |   |
|------------------------|--------|--------|-------|---|---------|-----|------------|------------|---|
| Diesel (C10-C28)       | ND     | 50.0   | mg/kg | 1 | B9F1402 | JTD | 06/14/2019 | 06/15/2019 | U |
| Surrogate: o-Terphenyl | 90.8 % | 50-150 |       |   | "       |     | "          | "          |   |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

SS-02@0-1'

6/13/2019 12:12:00PM

| Analyte | Result | Reporting<br>Limit | Units | Dilution | Batch | Analyst | Prepared | Analyzed | Notes |
|---------|--------|--------------------|-------|----------|-------|---------|----------|----------|-------|
|---------|--------|--------------------|-------|----------|-------|---------|----------|----------|-------|

AAL, Inc.  
Y906260-03 (Soil)

### Metals (Saturated Paste Prep)

|           |       |  |      |   |          |  |            |            |  |
|-----------|-------|--|------|---|----------|--|------------|------------|--|
| Calcium   | 1.61  |  | me/L | 1 | '[none]' |  | 06/17/2019 | 06/19/2019 |  |
| Magnesium | 0.84  |  | "    | " | "        |  | "          | "          |  |
| Sodium    | 36.25 |  | "    | " | "        |  | "          | "          |  |

### pH in Soil by EPA 9045D

|    |      |  |          |   |         |      |            |            |  |
|----|------|--|----------|---|---------|------|------------|------------|--|
| pH | 9.42 |  | pH Units | 1 | B9F1405 | OLAB | 06/14/2019 | 06/14/2019 |  |
|----|------|--|----------|---|---------|------|------------|------------|--|

### SAR by 20B Saturated Paste

|     |       |  |  |   |          |  |            |            |  |
|-----|-------|--|--|---|----------|--|------------|------------|--|
| SAR | 32.75 |  |  | 1 | '[none]' |  | 06/17/2019 | 06/19/2019 |  |
|-----|-------|--|--|---|----------|--|------------|------------|--|

### Specific Conductance by Modified 9050A

|                           |       |         |          |   |         |      |            |            |  |
|---------------------------|-------|---------|----------|---|---------|------|------------|------------|--|
| Specific Conductance (EC) | 0.793 | 0.00503 | mmhos/cm | 1 | B9F1406 | OLAB | 06/14/2019 | 06/14/2019 |  |
|---------------------------|-------|---------|----------|---|---------|------|------------|------------|--|

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

SS-02@4-5'

6/13/2019 12:17:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Analyst | Prepared | Analyzed | Notes |
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|

**Origins Laboratory, Inc.**  
**Y906260-04 (Soil)**

**BTEX/TVPH by EPA 8260D**

|                             |    |        |       |    |         |     |            |            |   |
|-----------------------------|----|--------|-------|----|---------|-----|------------|------------|---|
| Benzene                     | ND | 0.0500 | mg/kg | 25 | B9F1401 | KDK | 06/14/2019 | 06/14/2019 | U |
| Toluene                     | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Ethylbenzene                | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Xylenes, total              | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Gasoline Range Hydrocarbons | ND | 5.00   | "     | "  | "       | KDK | "          | "          | U |

|                                  |        |        |   |   |   |
|----------------------------------|--------|--------|---|---|---|
| Surrogate: 1,2-Dichloroethane-d4 | 109 %  | 70-130 | " | " | " |
| Surrogate: Toluene-d8            | 101 %  | 70-130 | " | " | " |
| Surrogate: 4-Bromofluorobenzene  | 92.8 % | 70-130 | " | " | " |

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

|                        |        |        |       |   |         |     |            |            |   |
|------------------------|--------|--------|-------|---|---------|-----|------------|------------|---|
| Diesel (C10-C28)       | ND     | 50.0   | mg/kg | 1 | B9F1402 | JTD | 06/14/2019 | 06/15/2019 | U |
| Surrogate: o-Terphenyl | 88.3 % | 50-150 |       |   | "       |     | "          | "          |   |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

SS-03@0-1'

6/13/2019 12:20:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Analyst | Prepared | Analyzed | Notes |
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|

AAL, Inc.  
Y906260-05 (Soil)

## Metals (Saturated Paste Prep)

|           |       |  |      |   |          |  |            |            |  |
|-----------|-------|--|------|---|----------|--|------------|------------|--|
| Calcium   | 4.09  |  | me/L | 1 | '[none]' |  | 06/17/2019 | 06/19/2019 |  |
| Magnesium | 1.55  |  | "    | " | "        |  | "          | "          |  |
| Sodium    | 34.78 |  | "    | " | "        |  | "          | "          |  |

## pH in Soil by EPA 9045D

|    |      |  |          |   |         |      |            |            |  |
|----|------|--|----------|---|---------|------|------------|------------|--|
| pH | 8.92 |  | pH Units | 1 | B9F1405 | OLAB | 06/14/2019 | 06/14/2019 |  |
|----|------|--|----------|---|---------|------|------------|------------|--|

## SAR by 20B Saturated Paste

|     |       |  |  |   |          |  |            |            |  |
|-----|-------|--|--|---|----------|--|------------|------------|--|
| SAR | 20.71 |  |  | 1 | '[none]' |  | 06/17/2019 | 06/19/2019 |  |
|-----|-------|--|--|---|----------|--|------------|------------|--|

## Specific Conductance by Modified 9050A

|                           |       |         |          |   |         |      |            |            |  |
|---------------------------|-------|---------|----------|---|---------|------|------------|------------|--|
| Specific Conductance (EC) | 0.349 | 0.00500 | mmhos/cm | 1 | B9F1406 | OLAB | 06/14/2019 | 06/14/2019 |  |
|---------------------------|-------|---------|----------|---|---------|------|------------|------------|--|

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

SS-03@4-5'

6/13/2019 12:30:00PM

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Analyst | Prepared | Analyzed | Notes |
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|
|---------|--------|-----------------|-------|----------|-------|---------|----------|----------|-------|

**Origins Laboratory, Inc.**  
**Y906260-06 (Soil)**

**BTEX/TVPH by EPA 8260D**

|                             |    |        |       |    |         |     |            |            |   |
|-----------------------------|----|--------|-------|----|---------|-----|------------|------------|---|
| Benzene                     | ND | 0.0500 | mg/kg | 25 | B9F1401 | KDK | 06/14/2019 | 06/14/2019 | U |
| Toluene                     | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Ethylbenzene                | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Xylenes, total              | ND | 0.0500 | "     | "  | "       | KDK | "          | "          | U |
| Gasoline Range Hydrocarbons | ND | 5.00   | "     | "  | "       | KDK | "          | "          | U |

|                                  |        |        |   |   |   |
|----------------------------------|--------|--------|---|---|---|
| Surrogate: 1,2-Dichloroethane-d4 | 108 %  | 70-130 | " | " | " |
| Surrogate: Toluene-d8            | 102 %  | 70-130 | " | " | " |
| Surrogate: 4-Bromofluorobenzene  | 94.3 % | 70-130 | " | " | " |

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

|                        |        |        |       |   |         |     |            |            |   |
|------------------------|--------|--------|-------|---|---------|-----|------------|------------|---|
| Diesel (C10-C28)       | ND     | 50.0   | mg/kg | 1 | B9F1402 | JTD | 06/14/2019 | 06/15/2019 | U |
| Surrogate: o-Terphenyl | 84.0 % | 50-150 |       |   | "       |     | "          | "          |   |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte                                | Result | Reporting Limit | Units | Spike Level | Source Result                             | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| <b>Batch B9F1401 - EPA 5030 (soil)</b> |        |                 |       |             |   |      |             |     |           |       |
| <b>Blank (B9F1401-BLK1)</b>            |        |                 |       |             | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |             |     |           |       |
| Benzene                                | ND     | 0.00200         | mg/kg |             |   |      |             |     |           | U     |
| Toluene                                | ND     | 0.00200         | "     |             |   |      |             |     |           | U     |
| Ethylbenzene                           | ND     | 0.00200         | "     |             |   |      |             |     |           | U     |
| Xylenes, total                         | ND     | 0.00200         | "     |             |   |      |             |     |           | U     |
| Gasoline Range Hydrocarbons            | ND     | 0.200           | "     |             |   |      |             |     |           | U     |
| Surrogate: 1,2-Dichloroethane-d4       | 0.14   |                 | "     | 0.125       |   | 109  | 70-130      |     |           |       |
| Surrogate: Toluene-d8                  | 0.12   |                 | "     | 0.125       |   | 98.4 | 70-130      |     |           |       |
| Surrogate: 4-Bromofluorobenzene        | 0.12   |                 | "     | 0.125       |   | 95.8 | 70-130      |     |           |       |

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte                                | Result | Reporting Limit | Units | Spike Level | Source Result                             | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|-------|
| <b>Batch B9F1401 - EPA 5030 (soil)</b> |        |                 |       |             |   |      |             |     |           |       |
| <b>Blank (B9F1401-BLK2)</b>            |        |                 |       |             | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |             |     |           |       |
| Benzene                                | ND     | 0.00200         | mg/kg |             |   |      |             |     |           | U     |
| Toluene                                | ND     | 0.00200         | "     |             |   |      |             |     |           | U     |
| Ethylbenzene                           | ND     | 0.00200         | "     |             |   |      |             |     |           | U     |
| Xylenes, total                         | ND     | 0.00200         | "     |             |   |      |             |     |           | U     |
| Gasoline Range Hydrocarbons            | ND     | 0.200           | "     |             |   |      |             |     |           | U     |
| Surrogate: 1,2-Dichloroethane-d4       | 0.13   |                 | "     | 0.125       |   | 106  | 70-130      |     |           |       |
| Surrogate: Toluene-d8                  | 0.12   |                 | "     | 0.125       |   | 94.4 | 70-130      |     |           |       |
| Surrogate: 4-Bromofluorobenzene        | 0.12   |                 | "     | 0.125       |   | 93.8 | 70-130      |     |           |       |

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1401 - EPA 5030 (soil)

**LCS (B9F1401-BS1)**

Prepared: 06/14/2019 Analyzed: 06/14/2019

|                                  |        |         |       |       |  |      |        |  |  |  |
|----------------------------------|--------|---------|-------|-------|--|------|--------|--|--|--|
| Benzene                          | 0.103  | 0.00200 | mg/kg | 0.100 |  | 103  | 70-130 |  |  |  |
| Toluene                          | 0.0985 | 0.00200 | "     | 0.100 |  | 98.5 | 70-130 |  |  |  |
| Ethylbenzene                     | 0.101  | 0.00200 | "     | 0.100 |  | 101  | 70-130 |  |  |  |
| m,p-Xylene                       | 0.203  | 0.00400 | "     | 0.200 |  | 101  | 70-130 |  |  |  |
| o-Xylene                         | 0.101  | 0.00200 | "     | 0.100 |  | 101  | 70-130 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.13   |         | "     | 0.125 |  | 104  | 70-130 |  |  |  |
| Surrogate: Toluene-d8            | 0.12   |         | "     | 0.125 |  | 97.7 | 70-130 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.12   |         | "     | 0.125 |  | 97.0 | 70-130 |  |  |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch B9F1401 - EPA 5030 (soil)**

**LCS (B9F1401-BS2)**

Prepared: 06/14/2019 Analyzed: 06/14/2019

|                                  |        |         |       |       |  |      |        |  |  |  |
|----------------------------------|--------|---------|-------|-------|--|------|--------|--|--|--|
| Benzene                          | 0.0987 | 0.00200 | mg/kg | 0.100 |  | 98.7 | 70-130 |  |  |  |
| Toluene                          | 0.0954 | 0.00200 | "     | 0.100 |  | 95.4 | 70-130 |  |  |  |
| Ethylbenzene                     | 0.0982 | 0.00200 | "     | 0.100 |  | 98.2 | 70-130 |  |  |  |
| m,p-Xylene                       | 0.199  | 0.00400 | "     | 0.200 |  | 99.6 | 70-130 |  |  |  |
| o-Xylene                         | 0.0992 | 0.00200 | "     | 0.100 |  | 99.2 | 70-130 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.13   |         | "     | 0.125 |  | 103  | 70-130 |  |  |  |
| Surrogate: Toluene-d8            | 0.12   |         | "     | 0.125 |  | 98.3 | 70-130 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.12   |         | "     | 0.125 |  | 95.3 | 70-130 |  |  |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch B9F1401 - EPA 5030 (soil)**

| Matrix Spike (B9F1401-MS1)       |        | Source: Y906247-03 |       |       | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |        |  |  |  |
|----------------------------------|--------|--------------------|-------|-------|---|------|--------|--|--|--|
| Benzene                          | 0.102  | 0.00200            | mg/kg | 0.100 | ND  | 102  | 70-130 |  |  |  |
| Toluene                          | 0.0952 | 0.00200            | "     | 0.100 | ND  | 95.2 | 70-130 |  |  |  |
| Ethylbenzene                     | 0.0999 | 0.00200            | "     | 0.100 | ND  | 99.9 | 70-130 |  |  |  |
| m,p-Xylene                       | 0.201  | 0.00400            | "     | 0.200 | 0.00550                                   | 97.7 | 70-130 |  |  |  |
| o-Xylene                         | 0.0999 | 0.00200            | "     | 0.100 | ND  | 99.9 | 70-130 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.13   |                    | "     | 0.125 |   | 104  | 70-130 |  |  |  |
| Surrogate: Toluene-d8            | 0.12   |                    | "     | 0.125 |   | 96.4 | 70-130 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.12   |                    | "     | 0.125 |   | 95.1 | 70-130 |  |  |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch B9F1401 - EPA 5030 (soil)**

| Matrix Spike (B9F1401-MS2)       |        | Source: Y906247-04 |       |       | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |        |  |  |  |
|----------------------------------|--------|--------------------|-------|-------|---|------|--------|--|--|--|
| Benzene                          | 0.102  | 0.00200            | mg/kg | 0.100 | ND  | 102  | 70-130 |  |  |  |
| Toluene                          | 0.0984 | 0.00200            | "     | 0.100 | ND  | 98.4 | 70-130 |  |  |  |
| Ethylbenzene                     | 0.101  | 0.00200            | "     | 0.100 | ND  | 101  | 70-130 |  |  |  |
| m,p-Xylene                       | 0.200  | 0.00400            | "     | 0.200 | ND  | 99.9 | 70-130 |  |  |  |
| o-Xylene                         | 0.100  | 0.00200            | "     | 0.100 | ND  | 100  | 70-130 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.13   |                    | "     | 0.125 |   | 103  | 70-130 |  |  |  |
| Surrogate: Toluene-d8            | 0.12   |                    | "     | 0.125 |   | 97.6 | 70-130 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.12   |                    | "     | 0.125 |   | 96.3 | 70-130 |  |  |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte                                | Result | Reporting Limit           | Units | Spike Level | Source Result                             | %REC | %REC Limits | RPD  | RPD Limit | Notes |
|--|--------|---------------------------|-------|-------------|---|------|-------------|------|-----------|-------|
| <b>Batch B9F1401 - EPA 5030 (soil)</b> |        |                           |       |             |   |      |             |      |           |       |
| <b>Matrix Spike Dup (B9F1401-MSD1)</b> |        | <b>Source: Y906247-03</b> |       |             | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |             |      |           |       |
| Benzene                                | 0.0957 | 0.00200                   | mg/kg | 0.100       | ND  | 95.7 | 70-130      | 6.86 | 20        |       |
| Toluene                                | 0.0916 | 0.00200                   | "     | 0.100       | ND  | 91.6 | 70-130      | 3.79 | 20        |       |
| Ethylbenzene                           | 0.0939 | 0.00200                   | "     | 0.100       | ND  | 93.9 | 70-130      | 6.25 | 20        |       |
| m,p-Xylene                             | 0.189  | 0.00400                   | "     | 0.200       | 0.00550                                   | 91.5 | 70-130      | 6.31 | 20        |       |
| o-Xylene                               | 0.0952 | 0.00200                   | "     | 0.100       | ND  | 95.2 | 70-130      | 4.82 | 20        |       |
| Surrogate: 1,2-Dichloroethane-d4       | 0.13   |                           | "     | 0.125       |   | 104  | 70-130      |      |           |       |
| Surrogate: Toluene-d8                  | 0.12   |                           | "     | 0.125       |   | 96.6 | 70-130      |      |           |       |
| Surrogate: 4-Bromofluorobenzene        | 0.12   |                           | "     | 0.125       |   | 96.3 | 70-130      |      |           |       |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte                                | Result | Reporting Limit           | Units | Spike Level | Source Result                             | %REC | %REC Limits | RPD  | RPD Limit | Notes |
|--|--------|---------------------------|-------|-------------|---|------|-------------|------|-----------|-------|
| <b>Batch B9F1401 - EPA 5030 (soil)</b> |        |                           |       |             |   |      |             |      |           |       |
| <b>Matrix Spike Dup (B9F1401-MSD2)</b> |        | <b>Source: Y906247-04</b> |       |             | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |             |      |           |       |
| Benzene                                | 0.0963 | 0.00200                   | mg/kg | 0.100       | ND  | 96.3 | 70-130      | 5.82 | 20        |       |
| Toluene                                | 0.0924 | 0.00200                   | "     | 0.100       | ND  | 92.4 | 70-130      | 6.27 | 20        |       |
| Ethylbenzene                           | 0.0950 | 0.00200                   | "     | 0.100       | ND  | 95.0 | 70-130      | 6.08 | 20        |       |
| m,p-Xylene                             | 0.191  | 0.00400                   | "     | 0.200       | ND  | 95.6 | 70-130      | 4.35 | 20        |       |
| o-Xylene                               | 0.0964 | 0.00200                   | "     | 0.100       | ND  | 96.4 | 70-130      | 4.19 | 20        |       |
| Surrogate: 1,2-Dichloroethane-d4       | 0.13   |                           | "     | 0.125       |   | 104  | 70-130      |      |           |       |
| Surrogate: Toluene-d8                  | 0.12   |                           | "     | 0.125       |   | 97.8 | 70-130      |      |           |       |
| Surrogate: 4-Bromofluorobenzene        | 0.12   |                           | "     | 0.125       |   | 95.2 | 70-130      |      |           |       |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

Blank (B9F1402-BLK1)

Prepared: 06/14/2019 Analyzed: 06/14/2019

|                        |    |      |       |      |  |      |        |  |  |   |
|------------------------|----|------|-------|------|--|------|--------|--|--|---|
| Diesel (C10-C28)       | ND | 50.0 | mg/kg |      |  |      |        |  |  | U |
| Surrogate: o-Terphenyl | 38 |      | "     | 50.0 |  | 75.9 | 50-150 |  |  |   |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

Blank (B9F1402-BLK2)

Prepared: 06/14/2019 Analyzed: 06/14/2019

|                        |    |      |       |      |  |      |        |  |  |   |
|------------------------|----|------|-------|------|--|------|--------|--|--|---|
| Diesel (C10-C28)       | ND | 50.0 | mg/kg |      |  |      |        |  |  | U |
| Surrogate: o-Terphenyl | 36 |      | "     | 50.0 |  | 72.4 | 50-150 |  |  |   |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

**LCS (B9F1402-BS1)**

Prepared: 06/14/2019 Analyzed: 06/14/2019

|                        |     |      |       |      |  |      |        |  |  |  |
|------------------------|-----|------|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28)       | 989 | 50.0 | mg/kg | 1000 |  | 98.9 | 70-130 |  |  |  |
| Surrogate: o-Terphenyl | 48  |      | "     | 50.0 |  | 96.6 | 50-150 |  |  |  |

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

**LCS (B9F1402-BS2)**

Prepared: 06/14/2019 Analyzed: 06/14/2019

|                        |     |      |       |      |  |      |        |  |  |  |
|------------------------|-----|------|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28)       | 953 | 50.0 | mg/kg | 1000 |  | 95.3 | 70-130 |  |  |  |
| Surrogate: o-Terphenyl | 39  |      | "     | 50.0 |  | 78.2 | 50-150 |  |  |  |

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

|                                   |     |                           |       |      |   |      |        |  |  |  |
|-----------------------------------|-----|---------------------------|-------|------|---|------|--------|--|--|--|
| <b>Matrix Spike (B9F1402-MS1)</b> |     | <b>Source: Y906247-03</b> |       |      | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |        |  |  |  |
| Diesel (C10-C28)                  | 966 | 50.0                      | mg/kg | 1000 | ND  | 96.6 | 70-130 |  |  |  |
| Surrogate: o-Terphenyl            | 48  |                           | "     | 50.0 |   | 95.9 | 50-150 |  |  |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

| Matrix Spike (B9F1402-MS2) |     | Source: Y906247-04 |       |      | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |        |  |  |  |
|----------------------------|-----|--------------------|-------|------|---|------|--------|--|--|--|
| Diesel (C10-C28)           | 904 | 50.0               | mg/kg | 1000 | ND  | 90.4 | 70-130 |  |  |  |
| Surrogate: o-Terphenyl     | 44  |                    | "     | 50.0 |   | 88.4 | 50-150 |  |  |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

|                                 |     |                    |       |      |   |      |        |      |    |  |
|---------------------------------|-----|--------------------|-------|------|---|------|--------|------|----|--|
| Matrix Spike Dup (B9F1402-MSD1) |     | Source: Y906247-03 |       |      | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |        |      |    |  |
| Diesel (C10-C28)                | 923 | 50.0               | mg/kg | 1000 | ND  | 92.3 | 70-130 | 4.48 | 35 |  |
| Surrogate: o-Terphenyl          | 45  |                    | "     | 50.0 |   | 90.0 | 50-150 |      |    |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President



Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B9F1402 - EPA 3550B

| Matrix Spike Dup (B9F1402-MSD2) |     | Source: Y906247-04 |       |      | Prepared: 06/14/2019 Analyzed: 06/14/2019 |      |        |      |    |  |
|---------------------------------|-----|--------------------|-------|------|---|------|--------|------|----|--|
| Diesel (C10-C28)                | 952 | 50.0               | mg/kg | 1000 | ND  | 95.2 | 70-130 | 5.19 | 35 |  |
| Surrogate: o-Terphenyl          | 46  |                    | "     | 50.0 |   | 92.7 | 50-150 |      |    |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Magpie - State #1-36

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

### Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

## Classical Chemistry Parameters - Quality Control

### Origins Laboratory, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

#### Batch B9F1405 - NO PREP

|                                 |      |                           |          |  |   |  |  |      |    |  |
|---------------------------------|------|---------------------------|----------|--|---|--|--|------|----|--|
| <b>Duplicate (B9F1405-DUP1)</b> |      | <b>Source: Y906252-12</b> |          |  | Prepared: 06/14/2019 Analyzed: 06/14/2019 |  |  |      |    |  |
| pH                              | 7.49 |                           | pH Units |  | 7.49                                      |  |  | 0.00 | 25 |  |

#### Batch B9F1406 - NO PREP

|                                 |         |   |          |  |   |  |  |        |    |  |
|---------------------------------|---------|---|----------|--|---|--|--|--------|----|--|
| <b>Blank (B9F1406-BLK1)</b>     |         | Prepared: 06/14/2019 Analyzed: 06/14/2019 |          |  |   |  |  |        |    |  |
| Specific Conductance (EC)       | 0.00300 | 0.00500                                   | mmhos/cm |  |   |  |  |        |    |  |
| <b>Duplicate (B9F1406-DUP1)</b> |         | <b>Source: Y906252-12</b>                 |          |  | Prepared: 06/14/2019 Analyzed: 06/14/2019 |  |  |        |    |  |
| Specific Conductance (EC)       | 0.180   | 0.00500                                   | mmhos/cm |  | 0.180                                     |  |  | 0.0555 | 25 |  |

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Magpie - State #1-36

### Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*