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January 12, 2017

Mr. Robert Chesson  
Environmental Protection Specialist, Northeast Region  
Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801  
Denver, CO 80203

**FORM 27 ADDENDUM: SUMMARY OF REMEDIATION ACTIVITIES  
EXCAVATION AND CHEMICAL TREATMENT  
FORMER STEINWALD #1 TANK BATTERY  
NWNW S3 T1N R64W  
WELD COUNTY, COLORADO  
REMEDATION #: 8954**

Dear Mr. Chesson:

PDC Energy, Inc. (PDC) is submitting this Form 27 Addendum: Summary of Remediation Activities to the Colorado Oil and Gas Conservation Commission (COGCC) to summarize remediation and environmental sampling activities completed at the former Steinwald #1 tank battery.

On April 22, 2014, a historic release was discovered below the concrete produced water vault during plug and abandonment activities at the Steinwald #1 tank battery (Site). A summary of initial ex-situ remediation activities and the proposed groundwater monitoring plan was submitted in a Form 27 on January 12, 2015. The COGCC issued Remediation Number 8954 to the project.

Additional remediation activities conducted in accordance with the approved Form 27 are summarized below.

**Ex-Situ Chemical Oxidation – 2016**

Between October 10 and December 12, 2016, approximately 9,100 cubic yards (cy) of impacted soil were excavated and treated ex-situ through chemical oxidation using hydrogen peroxide. Soil encountered in the excavation area was field screened for volatile organic compound (VOC)

concentrations using a photoionization detector (PID). A total of 42 soil samples (SS214 – SS255) were collected from the sidewalls and base of the excavation area at depths ranging between 15 and 45 feet below ground surface (bgs) [Figure 2]. Of the 42 soil samples, 37 soil samples (SS214 – SS243, SS246, SS247, and SS251 – SS255) were collected from the final extent of the excavation at 15 feet, 30 feet, 40 feet, and 45 feet bgs (Figure 3). All excavation soil samples were submitted to Summit Scientific Laboratories (Summit) in Golden, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) Method 8260, and TPH – diesel range organics (DRO) by USEPA Method 8015.

Analytical results indicated constituent concentrations were below COGCC Table 910-1 standards in all 37 soil samples collected from the final excavation extent (Figure 3). Analytical results from the soil samples collected from the excavation area are summarized in Table 1.

During the chemical oxidation treatment process, soil samples were collected for every 100 cy of soil treated with hydrogen peroxide to confirm hydrocarbon concentrations were reduced below COGCC Table 910-1 soil standards and material could be used for backfilling. Confirmation soil samples were designated with a CS- sample identification. A total of 91 confirmation soil samples (CS01 – CS91) were collected from the treated material and submitted to Summit for laboratory analysis of BTEX, naphthalene, and TPH – GRO by USEPA Method 8260, and TPH – DRO by USEPA Method 8015.

Analytical results indicated constituent concentrations were successfully reduced below COGCC Table 910-1 standards in all 91 confirmation soil samples. Analytical results from the soil samples collected from the treated material are summarized in Table 2.

Quarterly groundwater monitoring data indicates shallow groundwater is present on Site between 62 and 65 feet bgs. Consequently, groundwater was not encountered during ex-situ chemical oxidation activities. Monitoring wells BH01 through BH05 were destroyed during excavation activities.

### **Path Forward**

The five monitoring wells (BH01 – BH05) destroyed during excavation activities will be replaced using hollow stem auger drilling methods (Figure 1). The lateral extent of dissolved phase hydrocarbon impacts remains undefined. As such, additional monitoring wells will be installed cross- and down-gradient to the existing monitoring well network to establish point-of-compliance.

A supplemental report summarizing the proposed remediation strategy to address remaining dissolved phase impacts on Site will be submitted in a forthcoming report.

If you have any questions regarding this location, please contact me by phone at (303) 318-6106.

Sincerely,

Karen Shanahan Olson  
Senior EHS Manager  
PDC Energy, Inc.

**Enclosures:**

Figure 1 – Site Map

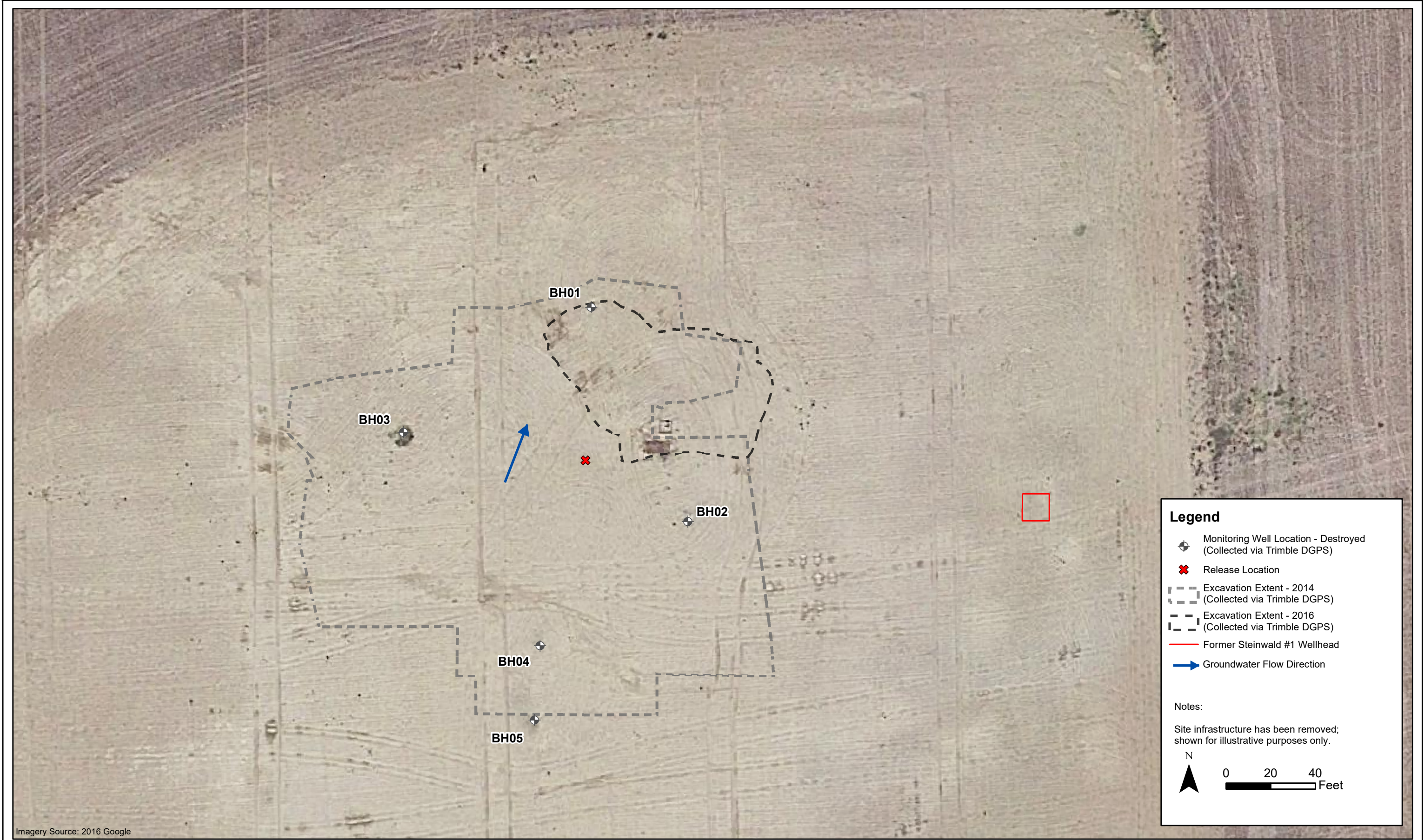
Figure 2 – Excavation Overview Map (2016)

Figure 3 – Final Excavation Extent Overview Map (2016)

Table 1 – Soil Analytical Results Summary Table

Table 2 – Confirmation Soil Analytical Results Summary Table

Attachment A – Laboratory Analytical Reports



|              |               |
|--------------|---------------|
| DATE:        | December 2016 |
| DESIGNED BY: | C. Wasko      |
| DRAWN BY:    | D. Arnold     |



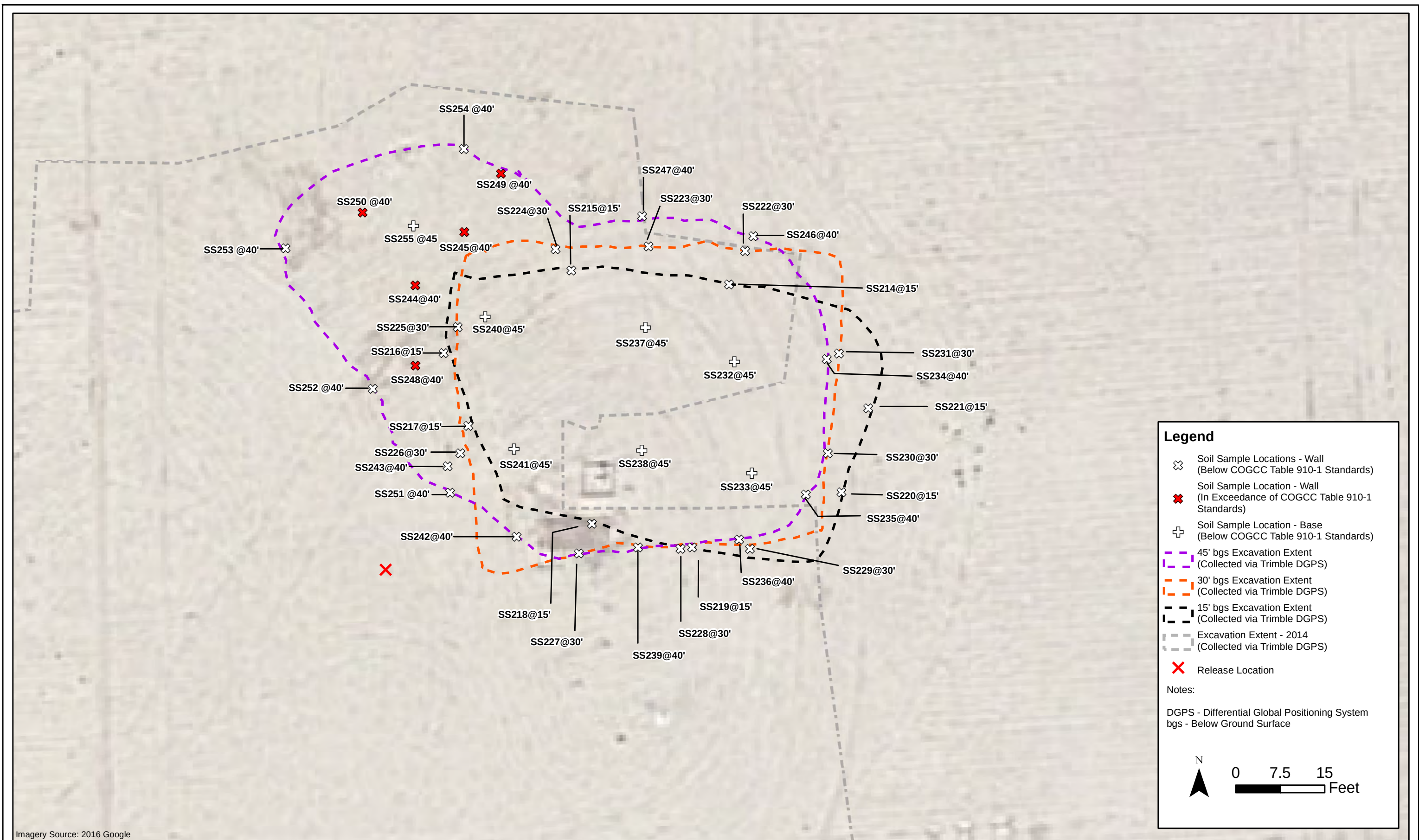
**TASMAN**  
GEOSCIENCES

Tasman Geosciences, Inc.  
6899 Pecos Street - Unit C  
Denver, CO 80221

**PDC Energy**  
**Former Steinwald #1 Tank Battery**  
NWNW Section 3, Township 1 North, Range 64 West  
Weld County, Colorado

Site Map

Figure  
1



|              |               |
|--------------|---------------|
| DATE:        | December 2016 |
| DESIGNED BY: | C. Wasko      |
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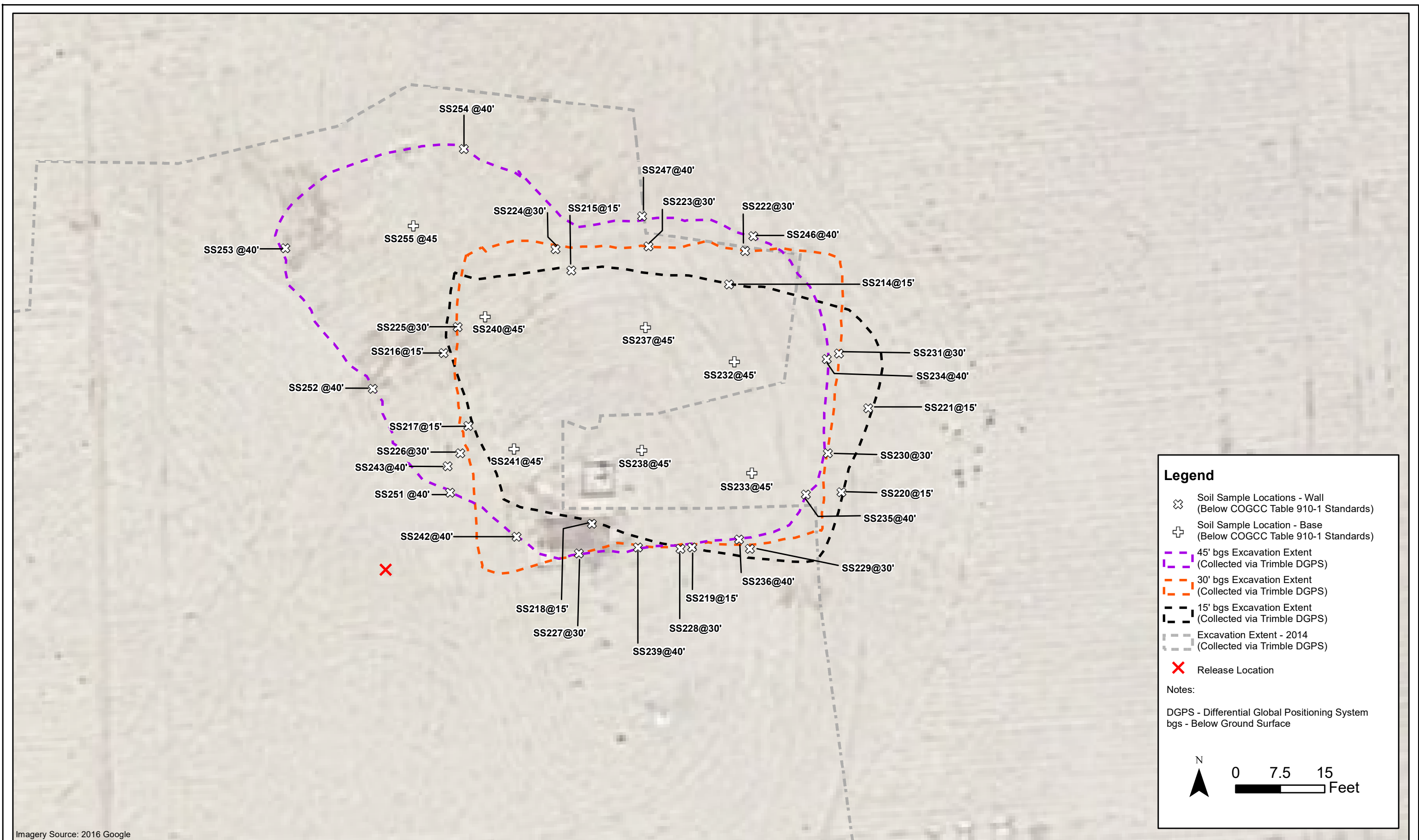


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**PDC Energy**  
**Former Steinwald #1 Tank Battery**  
NWNW Section 3, Township 1 North, Range 64 West  
Weld County, Colorado

Excavation Overview Map  
(2016)

Figure  
2



DATE:  
December 2016

DESIGNED BY:  
C. Wasko

DRAWN BY:  
D. Arnold



**PDC Energy**  
**Former Steinwald #1 Tank Battery**  
NWNW Section 3, Township 1 North, Range 64 West  
Weld County, Colorado

Final Excavation Extent  
Overview Map  
(2016)

Figure  
3

**TABLE 1**  
**FORMER STEINWALD #1 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

| Sample ID                                       | Date Sampled | Depth<br>(feet bgs) | Benzene<br>(mg/kg) | Toluene<br>(mg/kg) | Ethylbenzene<br>(mg/kg) | Total<br>Xylenes<br>(mg/kg) | Naphthalene<br>(mg/kg) | TPH <sup>(2)</sup><br>(mg/kg) |
|-------------------------------------------------|--------------|---------------------|--------------------|--------------------|-------------------------|-----------------------------|------------------------|-------------------------------|
| COGCC standards for soil (mg/kg) <sup>(1)</sup> |              |                     | 0.17               | 85                 | 100                     | 175                         | 23                     | 500                           |
| SS214 @ 15'                                     | 10/28/2016   | 15                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS215 @ 15'                                     | 10/28/2016   | 15                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS216 @ 15'                                     | 10/28/2016   | 15                  | 0.030              | 0.0057             | <0.0050                 | 0.048                       | 0.016                  | <50                           |
| SS217 @ 15'                                     | 10/28/2016   | 15                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS218 @ 15'                                     | 10/28/2016   | 15                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS219 @ 15'                                     | 10/28/2016   | 15                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS220 @ 15'                                     | 10/28/2016   | 15                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS221 @ 15'                                     | 10/28/2016   | 15                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS222 @ 30'                                     | 11/7/2016    | 30                  | 0.036              | 0.091              | <0.0050                 | 0.049                       | <0.010                 | 0.51                          |
| SS223 @ 30'                                     | 11/7/2016    | 30                  | 0.056              | 0.14               | 0.0071                  | 0.089                       | <0.010                 | 0.94                          |
| SS224 @ 30'                                     | 11/7/2016    | 30                  | 0.011              | 0.0074             | <0.0050                 | 0.092                       | 0.015                  | 7.4                           |
| SS225 @ 30'                                     | 11/7/2016    | 30                  | 0.051              | 0.16               | 0.0081                  | 0.12                        | <0.010                 | 1.1                           |
| SS226 @ 30'                                     | 11/7/2016    | 30                  | 0.0050             | 0.012              | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS227 @ 30'                                     | 11/7/2016    | 30                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS228 @ 30'                                     | 11/7/2016    | 30                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS229 @ 30'                                     | 11/7/2016    | 30                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS230 @ 30'                                     | 11/7/2016    | 30                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS231 @ 30'                                     | 11/7/2016    | 30                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS232 @ 45'                                     | 11/28/2016   | 45                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS233 @ 45'                                     | 11/28/2016   | 45                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS234 @ 40'                                     | 11/28/2016   | 40                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS235 @ 40'                                     | 11/28/2016   | 40                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS236 @ 40'                                     | 11/28/2016   | 40                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS237 @ 45'                                     | 11/29/2016   | 45                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS238 @ 45'                                     | 11/29/2016   | 45                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS239 @ 40'                                     | 11/29/2016   | 40                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS240 @ 45'                                     | 11/29/2016   | 45                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS241 @ 45'                                     | 11/29/2016   | 45                  | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS242 @ 40'                                     | 11/29/2016   | 40                  | 0.016              | 0.040              | <0.0050                 | 0.020                       | <0.010                 | <50                           |
| SS243 @ 40'                                     | 11/29/2016   | 40                  | 0.015              | 0.039              | <0.0050                 | 0.020                       | <0.010                 | <50                           |
| SS244 @ 40'                                     | 11/29/2016   | 40                  | 0.56               | 2.4                | 0.39                    | 8.1                         | 0.10                   | 165                           |
| SS245 @ 40'                                     | 11/29/2016   | 40                  | 0.68               | 6.6                | 0.70                    | 20                          | 0.16                   | 790                           |
| SS246 @ 40'                                     | 11/29/2016   | 40                  | 0.0072             | 0.017              | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS247 @ 40'                                     | 11/29/2016   | 40                  | 0.0095             | 0.028              | <0.0050                 | 0.020                       | <0.010                 | <50                           |
| SS248 @ 40'                                     | 11/29/2016   | 40                  | 0.21               | 0.54               | 0.026                   | 0.29                        | <0.010                 | 2.7                           |
| SS249 @ 40'                                     | 11/30/2016   | 40                  | 0.80               | 2.0                | 0.22                    | 4.2                         | 0.085                  | 36                            |
| SS250 @ 40'                                     | 11/30/2016   | 40                  | 0.30               | 1.1                | 0.11                    | 1.5                         | 0.031                  | 21                            |
| SS251 @ 40'                                     | 12/2/2016    | 40                  | 0.0057             | 0.013              | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| SS252 @ 40'                                     | 12/2/2016    | 40                  | 0.030              | 0.070              | <0.0050                 | 0.021                       | <0.010                 | <50                           |
| SS253 @ 40'                                     | 12/2/2016    | 40                  | 0.037              | 0.11               | 0.0055                  | 0.067                       | <0.010                 | 0.70                          |
| SS254 @ 40'                                     | 12/2/2016    | 40                  | 0.0037             | 0.015              | <0.0050                 | 0.030                       | <0.010                 | <50                           |
| SS255 @ 45'                                     | 12/2/2016    | 45                  | 0.070              | 0.21               | 0.011                   | 0.14                        | <0.010                 | 1.5                           |

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

**TABLE 1**  
**FORMER STEINWALD #1 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

mg/kg = Milligrams per kilogram

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of COGCC soil standards.

**TABLE 2**  
**FORMER STEINWALD #1 TANK BATTERY**  
**CONFIRMATION SOIL ANALYTICAL RESULTS SUMMARY TABLE**

| Sample ID                                              | Date Sampled | Benzene<br>(mg/kg) | Toluene<br>(mg/kg) | Ethylbenzene<br>(mg/kg) | Total<br>Xylenes<br>(mg/kg) | Naphthalene<br>(mg/kg) | TPH <sup>(2)</sup><br>(mg/kg) |
|--------------------------------------------------------|--------------|--------------------|--------------------|-------------------------|-----------------------------|------------------------|-------------------------------|
| <b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b> |              | <b>0.17</b>        | <b>85</b>          | <b>100</b>              | <b>175</b>                  | <b>23</b>              | <b>500</b>                    |
| CS01                                                   | 10/19/2016   | 0.0043             | <0.0050            | <0.0050                 | 0.025                       | <0.010                 | 1.2                           |
| CS02                                                   | 10/19/2016   | 0.0079             | <0.0050            | <0.0050                 | 0.032                       | <0.010                 | 1.5                           |
| CS03                                                   | 10/19/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.029                       | <0.010                 | 1.8                           |
| CS04                                                   | 10/19/2016   | 0.0084             | <0.0050            | 0.010                   | 0.092                       | 0.013                  | 2.7                           |
| CS05                                                   | 10/19/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.031                       | <0.010                 | 1.4                           |
| CS06                                                   | 10/19/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.011                       | <0.010                 | 1.9                           |
| CS07                                                   | 10/19/2016   | <0.0020            | <0.0050            | 0.0088                  | 0.10                        | 0.021                  | 4.5                           |
| CS08                                                   | 10/19/2016   | <0.0020            | <0.0050            | 0.0093                  | 0.12                        | 0.023                  | 6.5                           |
| CS09                                                   | 10/19/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.022                       | <0.010                 | 2.1                           |
| CS10                                                   | 10/20/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.037                       | <0.010                 | 3.4                           |
| CS11                                                   | 10/20/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.040                       | <0.010                 | 3.0                           |
| CS12                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS13                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.024                       | <0.010                 | <50                           |
| CS14                                                   | 10/28/2016   | <0.0020            | 0.0050             | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS15                                                   | 10/28/2016   | <0.0020            | 0.015              | <0.0050                 | 0.083                       | 0.015                  | <50                           |
| CS16                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS17                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS18                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS19                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS20                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS21                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS22                                                   | 10/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS23                                                   | 11/8/2016    | <0.0020            | 0.013              | <0.0050                 | 0.024                       | <0.010                 | 0.52                          |
| CS24                                                   | 11/8/2016    | <0.0020            | 0.0057             | <0.0050                 | 0.030                       | <0.010                 | 1.7                           |
| CS25                                                   | 11/8/2016    | <0.0020            | 0.0066             | <0.0050                 | 0.044                       | <0.010                 | 1.5                           |
| CS26                                                   | 11/8/2016    | <0.0020            | 0.0056             | <0.0050                 | 0.016                       | <0.010                 | 1.7                           |
| CS27                                                   | 11/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 0.95                          |
| CS28                                                   | 11/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 0.69                          |
| CS29                                                   | 11/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS30                                                   | 11/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 1.3                           |
| CS31                                                   | 11/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 0.88                          |
| CS32                                                   | 11/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS33                                                   | 11/8/2016    | 0.011              | 0.13               | 0.025                   | 0.38                        | 0.012                  | 277.2                         |
| CS34                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 1.5                           |
| CS35                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 0.70                          |
| CS36                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | 0.020                       | <0.010                 | 2.7                           |
| CS37                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 1.3                           |
| CS38                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 0.53                          |
| CS39                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 1.3                           |
| CS40                                                   | 11/14/2016   | 0.013              | 0.054              | <0.0050                 | 0.067                       | <0.010                 | 2.8                           |
| CS41                                                   | 11/14/2016   | <0.0020            | 0.012              | <0.0050                 | 0.028                       | <0.010                 | 1.5                           |
| CS42                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 0.69                          |
| CS43                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | 0.81                          |
| CS44                                                   | 11/14/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |

**TABLE 2**  
**FORMER STEINWALD #1 TANK BATTERY**  
**CONFIRMATION SOIL ANALYTICAL RESULTS SUMMARY TABLE**

| Sample ID                                              | Date Sampled | Benzene<br>(mg/kg) | Toluene<br>(mg/kg) | Ethylbenzene<br>(mg/kg) | Total<br>Xylenes<br>(mg/kg) | Naphthalene<br>(mg/kg) | TPH <sup>(2)</sup><br>(mg/kg) |
|--------------------------------------------------------|--------------|--------------------|--------------------|-------------------------|-----------------------------|------------------------|-------------------------------|
| <b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b> |              | <b>0.17</b>        | <b>85</b>          | <b>100</b>              | <b>175</b>                  | <b>23</b>              | <b>500</b>                    |
| CS45                                                   | 11/23/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS46                                                   | 11/23/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS47                                                   | 11/23/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS48                                                   | 11/23/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS49                                                   | 11/23/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS50                                                   | 11/23/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS51                                                   | 11/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS52                                                   | 11/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS53                                                   | 11/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS54                                                   | 11/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS55                                                   | 11/28/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS56                                                   | 11/29/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS57                                                   | 11/29/2016   | 0.016              | 0.053              | 0.0056                  | 0.086                       | <0.010                 | 0.99                          |
| CS58                                                   | 11/29/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS59                                                   | 11/29/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS60                                                   | 11/29/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS61                                                   | 11/29/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS62                                                   | 11/29/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS63                                                   | 11/29/2016   | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS64                                                   | 12/2/2016    | 0.0095             | 0.038              | <0.0050                 | 0.066                       | <0.010                 | 1.4                           |
| CS65                                                   | 12/2/2016    | <0.0020            | 0.032              | 0.0072                  | 0.12                        | <0.010                 | 1.8                           |
| CS66                                                   | 12/2/2016    | <0.0020            | 0.033              | 0.016                   | 0.29                        | 0.016                  | 5.8                           |
| CS67                                                   | 12/2/2016    | <0.0020            | 0.0095             | <0.0050                 | 0.039                       | 0.018                  | 2.2                           |
| CS68                                                   | 12/2/2016    | <0.0020            | 0.015              | <0.0050                 | 0.037                       | 0.022                  | 1.6                           |
| CS69                                                   | 12/2/2016    | <0.0020            | 0.017              | <0.0050                 | 0.072                       | 0.013                  | 1.3                           |
| CS70                                                   | 12/2/2016    | 0.0031             | 0.012              | <0.0050                 | 0.016                       | <0.010                 | 0.50                          |
| CS71                                                   | 12/2/2016    | <0.0020            | 0.0081             | <0.0050                 | 0.036                       | 0.016                  | 2.0                           |
| CS72                                                   | 12/6/2016    | <0.0020            | 0.010              | <0.0050                 | 0.034                       | 0.011                  | 2.8                           |
| CS73                                                   | 12/6/2016    | <0.0020            | 0.0094             | <0.0050                 | 0.015                       | <0.010                 | 1.0                           |
| CS74                                                   | 12/6/2016    | <0.0020            | 0.0061             | <0.0050                 | 0.018                       | <0.010                 | 1.5                           |
| CS75                                                   | 12/6/2016    | <0.0020            | 0.0079             | <0.0050                 | 0.030                       | <0.010                 | 0.85                          |
| CS76                                                   | 12/6/2016    | <0.0020            | <0.0050            | <0.0050                 | 0.013                       | <0.010                 | <50                           |
| CS77                                                   | 12/6/2016    | <0.0020            | 0.011              | <0.0050                 | 0.022                       | <0.010                 | 0.56                          |
| CS78                                                   | 12/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS79                                                   | 12/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS80                                                   | 12/8/2016    | <0.0020            | 0.0050             | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS81                                                   | 12/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS82                                                   | 12/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS83                                                   | 12/8/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS84                                                   | 12/9/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS85                                                   | 12/9/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS86                                                   | 12/9/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS87                                                   | 12/9/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS88                                                   | 12/9/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |

**TABLE 2**  
**FORMER STEINWALD #1 TANK BATTERY**  
**CONFIRMATION SOIL ANALYTICAL RESULTS SUMMARY TABLE**

| Sample ID                                              | Date Sampled | Benzene<br>(mg/kg) | Toluene<br>(mg/kg) | Ethylbenzene<br>(mg/kg) | Total<br>Xylenes<br>(mg/kg) | Naphthalene<br>(mg/kg) | TPH <sup>(2)</sup><br>(mg/kg) |
|--------------------------------------------------------|--------------|--------------------|--------------------|-------------------------|-----------------------------|------------------------|-------------------------------|
| <b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b> |              | <b>0.17</b>        | <b>85</b>          | <b>100</b>              | <b>175</b>                  | <b>23</b>              | <b>500</b>                    |
| CS89                                                   | 12/9/2016    | <0.0020            | 0.011              | <0.0050                 | 0.093                       | <0.010                 | 0.98                          |
| CS90                                                   | 12/9/2016    | <0.0020            | <0.0050            | <0.0050                 | <0.010                      | <0.010                 | <50                           |
| CS91                                                   | 12/9/2016    | <0.0020            | <0.0050            | <0.0050                 | 0.021                       | <0.010                 | <50                           |

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of COGCC soil standards

Attachment A

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 20, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 10/19/16 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS01      | 1610151-01    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS02      | 1610151-02    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS03      | 1610151-03    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS04      | 1610151-04    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS05      | 1610151-05    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS06      | 1610151-06    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS07      | 1610151-07    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS08      | 1610151-08    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |
| CS09      | 1610151-09    | Soil   | 10/19/16 00:00 | 10/19/16 17:00 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/20/16 06:52

# Summit Scientific 1610151

741 Corporate Circle Suite I Golden, Colorado 80401  
303-277-9310 303-277-9531 Fax

Client: TASMAN / PDC (INVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CJP

Page 1 of 1

Project Manager: M. LONGHURST  
E-Mail: Mark.Longhurst@PDC.com  
Project Name: STEINWALD #1  
Project Number: \_\_\_\_\_

| Sample Description                      | Date Sampled | Time Sampled | Number of Containers | Preservative                               |                  |      |                 | Matrix                                                                         |      |                         | Analyze For:    |                      |          |  | Special Instructions |
|-----------------------------------------|--------------|--------------|----------------------|--------------------------------------------|------------------|------|-----------------|--------------------------------------------------------------------------------|------|-------------------------|-----------------|----------------------|----------|--|----------------------|
|                                         |              |              |                      | HCl                                        | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                    | Soil | Air - Canister Serial # | Other (Specify) | GBTEXN 8260          | DRO 8015 |  |                      |
| CS01                                    | 10/19/16     |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS02                                    |              |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS03                                    |              |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS04                                    |              |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS05                                    |              |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS06                                    |              |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS07                                    |              |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS08                                    |              |              |                      |                                            |                  |      |                 |                                                                                |      |                         |                 |                      |          |  |                      |
| CS09                                    | ✓            |              | ✓                    |                                            |                  |      |                 | ✓                                                                              |      |                         | ✓               | ✓                    |          |  |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____        |                  |      |                 | Turn Around Time (Check)                                                       |      |                         |                 | Notes:<br><br>on ice |          |  |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____        |                  |      |                 | Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> |      |                         |                 |                      |          |  |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____        |                  |      |                 | 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>            |      |                         |                 |                      |          |  |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received in Lab by: _____ Date/Time: _____ |                  |      |                 | Sample Integrity:                                                              |      |                         |                 |                      |          |  |                      |
| 10/19/16 1700                           |              |              |                      | 10/19/16 1700                              |                  |      |                 | Temperature Upon Receipt: -1.4°C                                               |      |                         |                 |                      |          |  |                      |
| 10/19/16                                |              |              |                      | 10-474                                     |                  |      |                 | Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>               |      |                         |                 |                      |          |  |                      |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/20/16 06:52

### Sample Receipt Checklist

S2 Work Order: 161015

Client: Tosman/PDC

Client Project ID: Steinwald #1

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_ (Describe)

|           |      |  |  |  |  |
|-----------|------|--|--|--|--|
| Cooler ID |      |  |  |  |  |
| Temp (°C) | -1.4 |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes | No | N/A | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    |     | ✓  |     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |     |    |     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | ✓   |    |     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | ✓   |    |     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |     |    | ✓   |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |     |    | ✓   |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | ✓   |    |     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | ✓   |    |     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | ✓   |    |     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | ✓   |    |     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |     |    | ✓   |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |     |    | ✓   |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |     |    | ✓   |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |     |    | ✓   |                   |
| Record the pH in Comments.                                                                                                                  |     |    | ✓   |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |     |    | ✓   |                   |
| Additional Comments (if any):                                                                                                               |     |    |     |                   |
|                                                                                                                                             |     |    |     |                   |
| <sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.                                   |     |    |     |                   |

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

10/19/16  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**CS01**  
**1610151-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/19/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/19/16 | EPA 8260B |       |
| <b>Benzene</b>                     | <b>0.0043</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.025</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.2</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 123 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**CS02**  
**1610151-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/19/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/19/16 | EPA 8260B |       |
| <b>Benzene</b>                     | <b>0.0079</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.032</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.5</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 128 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**CS03**  
**1610151-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/19/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/19/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.029</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.8</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 127 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 102 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 110 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/20/16 06:52

**CS04**  
**1610151-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 99.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.013</b>  | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/19/16 | EPA 8260B |       |
| Benzene                     | <b>0.0084</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | <b>0.010</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.092</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>2.7</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 134 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 112 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**CS05**  
**1610151-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/19/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.031</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>1.4</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 125 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**CS06**  
**1610151-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/20/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.011</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.9</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 123 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 108 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/20/16 06:52

**CS07**  
**1610151-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.021</b>  | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/20/16 | EPA 8260B |       |
| Benzene                     | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | <b>0.0088</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.10</b>   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>4.5</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 124 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**CS08**  
**1610151-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.023</b>  | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/20/16 | EPA 8260B |       |
| Benzene                     | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | <b>0.0093</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.12</b>   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>6.5</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 126 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 98.1 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 114 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**CS09**  
**1610151-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/19/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610197 | 10/19/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/19/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/19/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1610196 | 10/19/16 | 10/20/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.022</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>2.1</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/19/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 125 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1610197 - EPA 3550A**

**Blank (1610197-BLK1)**

Prepared & Analyzed: 10/19/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |      |        |  |  |  |
| Surrogate: o-Terphenyl | 11.5 |    | "     | 12.5 |  | 91.9 | 30-150 |  |  |  |

**LCS (1610197-BS1)**

Prepared & Analyzed: 10/19/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 477  | 50 | mg/kg | 499  |  | 95.6 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 12.2 |    | "     | 12.5 |  | 97.2 | 30-150 |  |  |  |

**Matrix Spike (1610197-MS1)**

Source: 1610139-01

Prepared & Analyzed: 10/19/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 453  | 50 | mg/kg | 494  | 10.8 | 89.6 | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 12.6 |    | "     | 12.4 |      | 102  | 30-150 |  |  |  |

**Matrix Spike Dup (1610197-MSD1)**

Source: 1610139-01

Prepared & Analyzed: 10/19/16

|                        |      |    |       |      |      |      |        |      |    |  |
|------------------------|------|----|-------|------|------|------|--------|------|----|--|
| C10-C28 (DRO)          | 418  | 50 | mg/kg | 494  | 10.8 | 82.4 | 50-148 | 8.10 | 20 |  |
| Surrogate: o-Terphenyl | 11.9 |    | "     | 12.4 |      | 96.4 | 30-150 |      |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/20/16 06:52

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1610196 - EPA 5030 Soil MS**

**Blank (1610196-BLK1)**

Prepared & Analyzed: 10/19/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |      |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0375 |        | "     | 0.0400 |  | 93.8 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0396 |        | "     | 0.0400 |  | 98.9 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0386 |        | "     | 0.0400 |  | 96.4 | 21-167 |  |  |  |

**LCS (1610196-BS1)**

Prepared & Analyzed: 10/19/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.109  | 0.0020 | "     | 0.100  |  | 109  | 58-130 |  |  |  |
| Toluene                          | 0.108  | 0.0050 | "     | 0.100  |  | 108  | 61-134 |  |  |  |
| Ethylbenzene                     | 0.114  | 0.0050 | "     | 0.0992 |  | 115  | 74-139 |  |  |  |
| m,p-Xylene                       | 0.218  | 0.010  | "     | 0.200  |  | 109  | 73-137 |  |  |  |
| o-Xylene                         | 0.113  | 0.0050 | "     | 0.0980 |  | 116  | 73-141 |  |  |  |
| Xylenes (total)                  | 0.332  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 6.24   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0392 |        | "     | 0.0400 |  | 97.9 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0414 |        | "     | 0.0400 |  | 103  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0389 |        | "     | 0.0400 |  | 97.3 | 21-167 |  |  |  |

**Matrix Spike (1610196-MS1)**

Source: 1610139-01

Prepared & Analyzed: 10/19/16

|                                  |        |        |       |        |    |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|----|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND |      | 10-158 |  |  |  |
| Benzene                          | 0.0935 | 0.0020 | "     | 0.0984 | ND | 95.0 | 30-131 |  |  |  |
| Toluene                          | 0.0961 | 0.0050 | "     | 0.0984 | ND | 97.7 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.101  | 0.0050 | "     | 0.0976 | ND | 103  | 22-153 |  |  |  |
| m,p-Xylene                       | 0.185  | 0.010  | "     | 0.196  | ND | 94.2 | 10-159 |  |  |  |
| o-Xylene                         | 0.101  | 0.0050 | "     | 0.0965 | ND | 105  | 31-151 |  |  |  |
| Xylenes (total)                  | 0.286  | 0.010  | "     |        | ND |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 5.66   | 0.50   | "     |        | ND |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0382 |        | "     | 0.0394 |    | 97.1 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0398 |        | "     | 0.0394 |    | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0357 |        | "     | 0.0394 |    | 90.6 | 21-167 |  |  |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1610196 - EPA 5030 Soil MS**

| Matrix Spike Dup (1610196-MSD1)  |        | Source: 1610139-01 |       |        | Prepared & Analyzed: 10/19/16 |      |        |      |    |  |
|----------------------------------|--------|--------------------|-------|--------|-------------------------------|------|--------|------|----|--|
| Naphthalene                      | ND     | 0.010              | mg/kg |        | ND                            |      | 10-158 |      | 42 |  |
| Benzene                          | 0.0919 | 0.0020             | "     | 0.0996 | ND                            | 92.3 | 30-131 | 1.76 | 34 |  |
| Toluene                          | 0.0930 | 0.0050             | "     | 0.0996 | ND                            | 93.4 | 30-134 | 3.30 | 30 |  |
| Ethylbenzene                     | 0.0991 | 0.0050             | "     | 0.0988 | ND                            | 100  | 22-153 | 1.78 | 24 |  |
| m,p-Xylene                       | 0.177  | 0.010              | "     | 0.199  | ND                            | 89.2 | 10-159 | 4.29 | 68 |  |
| o-Xylene                         | 0.0979 | 0.0050             | "     | 0.0976 | ND                            | 100  | 31-151 | 3.40 | 38 |  |
| Xylenes (total)                  | 0.275  | 0.010              | "     |        | ND                            |      | 30-160 | 3.97 | 30 |  |
| Gasoline Range Hydrocarbons      | 5.05   | 0.50               | "     |        | ND                            |      | 30-160 | 11.5 | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0400 |                    | "     | 0.0398 |                               | 100  | 23-173 |      |    |  |
| Surrogate: Toluene-d8            | 0.0402 |                    | "     | 0.0398 |                               | 101  | 20-170 |      |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0372 |                    | "     | 0.0398 |                               | 93.5 | 21-167 |      |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/20/16 06:52

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 21, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 10/20/16 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/16 08:15

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS10      | 1610168-01    | Soil   | 10/20/16 00:00 | 10/20/16 17:45 |
| CS11      | 1610168-02    | Soil   | 10/20/16 00:00 | 10/20/16 17:45 |

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

*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.*





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/21/16 08:15

### Sample Receipt Checklist

S2 Work Order: 1610168

Client: Tasman / PDC

Client Project ID: Steinwald #1

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |     |  |  |  |  |
|-----------|-----|--|--|--|--|
| Cooler ID |     |  |  |  |  |
| Temp (°C) | 4.7 |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes | No | N/A | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | ✓   |    |     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |     |    |     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | ✓   |    |     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | ✓   |    |     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |     |    | ✓   |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |     |    | ✓   |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | ✓   |    |     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | ✓   |    |     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | ✓   |    |     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | ✓   |    |     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |     |    | ✓   |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |     |    | ✓   |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |     |    | ✓   |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |     |    | ✓   |                   |
| Record the pH in Comments.                                                                                                                  |     |    | ✓   |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |     |    | ✓   |                   |
| Additional Comments (if any):                                                                                                               |     |    |     |                   |
| <sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.                                   |     |    |     |                   |

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

10/20/16 1730  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/21/16 08:15

**CS10**  
**1610168-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/20/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610228 | 10/20/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/20/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/20/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1610227 | 10/20/16 | 10/20/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.037</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>3.4</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/20/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 122 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 112 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/16 08:15

**CS11**  
**1610168-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/20/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610228 | 10/20/16 | 10/20/16 | 8015M  |       |

Date Sampled: **10/20/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/20/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1610227 | 10/20/16 | 10/20/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.040</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>3.0</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/20/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 121 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 112 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/16 08:15

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1610228 - EPA 3550A**

**Blank (1610228-BLK1)**

Prepared & Analyzed: 10/20/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |      |        |  |  |  |
| Surrogate: o-Terphenyl | 11.6 |    | "     | 12.5 |  | 93.1 | 30-150 |  |  |  |

**LCS (1610228-BS1)**

Prepared & Analyzed: 10/20/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 424  | 50 | mg/kg | 499  |  | 85.0 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 14.4 |    | "     | 12.5 |  | 115  | 30-150 |  |  |  |

**Matrix Spike (1610228-MS1)**

Source: 1610166-02

Prepared & Analyzed: 10/20/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 439  | 50 | mg/kg | 499  | 18.2 | 84.4 | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 13.9 |    | "     | 12.5 |      | 111  | 30-150 |  |  |  |

**Matrix Spike Dup (1610228-MSD1)**

Source: 1610166-02

Prepared & Analyzed: 10/20/16

|                        |      |    |       |      |      |      |        |      |    |  |
|------------------------|------|----|-------|------|------|------|--------|------|----|--|
| C10-C28 (DRO)          | 434  | 50 | mg/kg | 499  | 18.2 | 83.4 | 50-148 | 1.17 | 20 |  |
| Surrogate: o-Terphenyl | 13.6 |    | "     | 12.5 |      | 109  | 30-150 |      |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/21/16 08:15

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1610227 - EPA 5030 Soil MS**

**Blank (1610227-BLK1)**

Prepared & Analyzed: 10/20/16

|                                  |        |        |       |        |     |        |  |  |  |  |
|----------------------------------|--------|--------|-------|--------|-----|--------|--|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |     |        |  |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |     |        |  |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |     |        |  |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |     |        |  |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |     |        |  |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |     |        |  |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0435 |        | "     | 0.0400 | 109 | 23-173 |  |  |  |  |
| Surrogate: Toluene-d8            | 0.0421 |        | "     | 0.0400 | 105 | 20-170 |  |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0408 |        | "     | 0.0400 | 102 | 21-167 |  |  |  |  |

**LCS (1610227-BS1)**

Prepared & Analyzed: 10/20/16

|                                  |        |        |       |        |      |        |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|------|--------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |      |        | 66-138 |  |  |  |
| Benzene                          | 0.0837 | 0.0020 | "     | 0.100  | 83.7 | 58-130 |        |  |  |  |
| Toluene                          | 0.0879 | 0.0050 | "     | 0.100  | 87.9 | 61-134 |        |  |  |  |
| Ethylbenzene                     | 0.109  | 0.0050 | "     | 0.0992 | 109  | 74-139 |        |  |  |  |
| m,p-Xylene                       | 0.196  | 0.010  | "     | 0.200  | 98.0 | 73-137 |        |  |  |  |
| o-Xylene                         | 0.101  | 0.0050 | "     | 0.0980 | 103  | 73-141 |        |  |  |  |
| Xylenes (total)                  | 0.296  | 0.010  | "     |        |      | 0-200  |        |  |  |  |
| Gasoline Range Hydrocarbons      | 2.96   | 0.50   | "     |        |      | 30-150 |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0472 |        | "     | 0.0400 | 118  | 23-173 |        |  |  |  |
| Surrogate: Toluene-d8            | 0.0410 |        | "     | 0.0400 | 102  | 20-170 |        |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0406 |        | "     | 0.0400 | 102  | 21-167 |        |  |  |  |

**Matrix Spike (1610227-MS1)**

Source: 1610166-02

Prepared & Analyzed: 10/20/16

|                                  |        |        |       |        |       |        |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|-------|--------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND    |        | 10-158 |  |  |  |
| Benzene                          | 0.0854 | 0.0020 | "     | 0.100  | ND    | 85.4   | 30-131 |  |  |  |
| Toluene                          | 0.0890 | 0.0050 | "     | 0.100  | ND    | 89.0   | 30-134 |  |  |  |
| Ethylbenzene                     | 0.111  | 0.0050 | "     | 0.0992 | ND    | 112    | 22-153 |  |  |  |
| m,p-Xylene                       | 0.199  | 0.010  | "     | 0.200  | ND    | 99.6   | 10-159 |  |  |  |
| o-Xylene                         | 0.103  | 0.0050 | "     | 0.0980 | ND    | 105    | 31-151 |  |  |  |
| Xylenes (total)                  | 0.302  | 0.010  | "     |        | ND    |        | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 3.24   | 0.50   | "     |        | 0.351 |        | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0490 |        | "     | 0.0400 | 122   | 23-173 |        |  |  |  |
| Surrogate: Toluene-d8            | 0.0414 |        | "     | 0.0400 | 104   | 20-170 |        |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0422 |        | "     | 0.0400 | 106   | 21-167 |        |  |  |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/21/16 08:15

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1610227 - EPA 5030 Soil MS**

| Matrix Spike Dup (1610227-MSD1)  |        |        | Source: 1610166-02 |        | Prepared & Analyzed: 10/20/16 |      |        |       |    |  |
|----------------------------------|--------|--------|--------------------|--------|-------------------------------|------|--------|-------|----|--|
| Naphthalene                      | ND     | 0.010  | mg/kg              |        | ND                            |      | 10-158 |       | 42 |  |
| Benzene                          | 0.0859 | 0.0020 | "                  | 0.100  | ND                            | 85.9 | 30-131 | 0.560 | 34 |  |
| Toluene                          | 0.0881 | 0.0050 | "                  | 0.100  | ND                            | 88.1 | 30-134 | 1.02  | 30 |  |
| Ethylbenzene                     | 0.106  | 0.0050 | "                  | 0.0992 | ND                            | 107  | 22-153 | 4.41  | 24 |  |
| m,p-Xylene                       | 0.191  | 0.010  | "                  | 0.200  | ND                            | 95.7 | 10-159 | 4.00  | 68 |  |
| o-Xylene                         | 0.101  | 0.0050 | "                  | 0.0980 | ND                            | 103  | 31-151 | 2.24  | 38 |  |
| Xylenes (total)                  | 0.292  | 0.010  | "                  |        | ND                            |      | 30-160 | 3.40  | 30 |  |
| Gasoline Range Hydrocarbons      | 3.09   | 0.50   | "                  |        | 0.351                         |      | 30-160 | 4.86  | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0497 |        | "                  | 0.0400 |                               | 124  | 23-173 |       |    |  |
| Surrogate: Toluene-d8            | 0.0413 |        | "                  | 0.0400 |                               | 103  | 20-170 |       |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0420 |        | "                  | 0.0400 |                               | 105  | 21-167 |       |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/21/16 08:15

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 29, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 10/28/16 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'Ben Shrewsbury', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury  
Laboratory Manager



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| SS214@15  | 1610242-01    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| SS215@15  | 1610242-02    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| SS216@15  | 1610242-03    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| SS217@15  | 1610242-04    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| SS218@15  | 1610242-05    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| SS219@15  | 1610242-06    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| SS220@15  | 1610242-07    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| SS221@15  | 1610242-08    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS12      | 1610242-09    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS13      | 1610242-10    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS14      | 1610242-11    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS15      | 1610242-12    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS16      | 1610242-13    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS17      | 1610242-14    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS18      | 1610242-15    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS19      | 1610242-16    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS20      | 1610242-17    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS21      | 1610242-18    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |
| CS22      | 1610242-19    | Soil   | 10/28/16 00:00 | 10/28/16 18:00 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/16 16:49

741 Corporate Circle Suite I Golden, Colorado 80401  
303-277-9310 303-277-9531 Fax

Client: TASMAN / PDC (INVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: GP

Page 1 of 2

Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD #1  
Project Number: \_\_\_\_\_

| Sample Description                      | Date Sampled | Time Sampled | Number of Containers | Preservative                        |                  |      | Matrix          |                                                                                                                                                                                                                        | Analyze For: |                         | Special Instructions |
|-----------------------------------------|--------------|--------------|----------------------|-------------------------------------|------------------|------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------|----------------------|
|                                         |              |              |                      | HCl                                 | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                                                                                                                                                            | Soil         | Air - Canister Serial # |                      |
| SS 214 Q 15                             | 10/28/16     |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| SS 215 Q 15                             |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| SS 216 Q 15                             |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| SS 217 Q 15                             |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| SS 218 Q 15                             |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| SS 219 Q 15                             |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| SS 220 Q 15                             |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| SS 221 Q 15                             |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| CS 12                                   |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| CS 13                                   |              |              | 1                    |                                     |                  | X    |                 | X                                                                                                                                                                                                                      |              |                         |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Turn Around Time (Check)<br>Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/><br>24 Hours <input type="checkbox"/> Standard <input type="checkbox"/><br>48 Hours <input type="checkbox"/> |              |                         |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Sample Integrity:<br>Temperature Upon Receipt: <u>5.4°C</u><br>Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                                                                             |              |                         |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Notes: <u>on ice</u>                                                                                                                                                                                                   |              |                         |                      |

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/16 16:49

741 Corporate Circle Suite I Golden, Colorado 80401  
303-277-9310 303-277-9531 Fax

Client: TASMAN / PDC (INVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CJP

Page 2 of 2

Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD #1  
Project Number: \_\_\_\_\_

| Sample Description | Date Sampled | Time Sampled | Number of Containers | Preservative |                  |      | Matrix      |      | Air - Canister Serial # | Other (Specify) | Analyze For:            | Special Instructions |
|--------------------|--------------|--------------|----------------------|--------------|------------------|------|-------------|------|-------------------------|-----------------|-------------------------|----------------------|
|                    |              |              |                      | HCl          | HNO <sub>3</sub> | None | Groundwater | Soil |                         |                 |                         |                      |
| CS 14              | 10/28/16     |              | 1                    |              |                  | X    |             |      |                         | X               | GBTEXN 8260<br>PRO 8015 |                      |
| CS 15              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |
| CS 16              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |
| CS 17              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |
| CS 18              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |
| CS 19              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |
| CS 20              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |
| CS 21              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |
| CS 22              |              |              |                      |              |                  |      |             |      |                         |                 |                         |                      |

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Turn Around Time (Check)  
Same Day ☒ 72 Hours ☐  
24 Hours ☐ Standard ☐  
48 Hours ☐

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Sample Integrity:  
Temperature Upon Receipt: 5.4°C  
Intact: ☒ Yes ☐ No

Relinquished by: \_\_\_\_\_ Date/Time: 10/28/16 1630 Received in Lab by: MM Date/Time: 10/28/16 1630  
MM 10/28/16 1710

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Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/16 16:49

#### Sample Receipt Checklist

S2 Work Order: 1610242

Client: Tasman / PDC

Client Project ID: Steinwald #1

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |     |  |  |  |  |
|-----------|-----|--|--|--|--|
| Cooler ID |     |  |  |  |  |
| Temp (°C) | 5.4 |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes | No | N/A | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | ✓   |    |     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |     |    |     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | ✓   |    |     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | ✓   |    |     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |     |    | ✓   |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |     |    | ✓   |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | ✓   |    |     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | ✓   |    |     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | ✓   |    |     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | ✓   |    |     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |     |    | ✓   |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |     |    | ✓   |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |     |    | ✓   |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |     |    | ✓   |                   |
| Record the pH in Comments.                                                                                                                  |     |    | ✓   |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |     |    | ✓   |                   |
| Additional Comments (if any):                                                                                                               |     |    |     |                   |
|                                                                                                                                             |     |    |     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

10  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**SS214@15**  
**1610242-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/28/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 115 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.2 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**SS215@15**  
**1610242-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/28/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.5 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**SS216@15**  
**1610242-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/28/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.016</b>  | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | <b>0.030</b>  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | <b>0.0057</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.048</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 116 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/16 16:49

**SS217@15**  
**1610242-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/28/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 112 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.6 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/16 16:49

**SS218@15**  
**1610242-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/28/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 113 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 96.4 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 95.6 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**SS219@15**  
**1610242-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 111 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.1 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 99.9 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**SS220@15**  
**1610242-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 90.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 110 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 95.8 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 99.1 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
10/29/16 16:49

**SS221@15**  
**1610242-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 96.8 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS12**  
**1610242-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 116 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.5 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 98.8 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS13**  
**1610242-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.024</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND           | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.9 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS14**  
**1610242-11 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 92.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND            | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.0050</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND            | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 98.9 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS15**  
**1610242-12 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 90.1 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.015  | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.015  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.083  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 116 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 98.2 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS16**  
**1610242-13 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 115 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.7 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 98.7 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS17**  
**1610242-14 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 94.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 115 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.3 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 98.9 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS18**  
**1610242-15 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|--------------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50                 | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting<br>Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|--------------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.6 %             | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|--------------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010              | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020             | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050             | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050             | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010              | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50               | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting<br>Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|--------------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 116 %              | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.4 %             | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 99.4 %             | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS19**  
**1610242-16 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 90.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 113 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.4 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 100 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS20**  
**1610242-17 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 98.4 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 98.5 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS21**  
**1610242-18 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 95.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 114 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 98.6 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**CS22**  
**1610242-19 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1610330 | 10/28/16 | 10/29/16 | 8015M  |       |

Date Sampled: **10/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **10/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1610329 | 10/28/16 | 10/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **10/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 113 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.1 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 100 %           | 21-167 |          | "     | "        | "        | "      |       |

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1610330 - EPA 3550A**

**Blank (1610330-BLK1)**

Prepared & Analyzed: 10/28/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |      |        |  |  |  |
| Surrogate: o-Terphenyl | 11.4 |    | "     | 12.5 |  | 91.0 | 30-150 |  |  |  |

**LCS (1610330-BS1)**

Prepared & Analyzed: 10/28/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 469  | 50 | mg/kg | 499  |  | 94.0 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 12.3 |    | "     | 12.5 |  | 98.2 | 30-150 |  |  |  |

**Matrix Spike (1610330-MS1)**

Source: 1610242-01

Prepared & Analyzed: 10/28/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 428  | 50 | mg/kg | 499  | 9.76 | 83.8 | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 12.1 |    | "     | 12.5 |      | 96.6 | 30-150 |  |  |  |

**Matrix Spike Dup (1610330-MSD1)**

Source: 1610242-01

Prepared & Analyzed: 10/28/16

|                        |      |    |       |      |      |      |        |      |    |  |
|------------------------|------|----|-------|------|------|------|--------|------|----|--|
| C10-C28 (DRO)          | 410  | 50 | mg/kg | 499  | 9.76 | 80.1 | 50-148 | 4.38 | 20 |  |
| Surrogate: o-Terphenyl | 12.3 |    | "     | 12.5 |      | 98.5 | 30-150 |      |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
10/29/16 16:49

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 08, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 11/07/16 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| SS222@30  | 1611048-01    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS223@30  | 1611048-02    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS224@30  | 1611048-03    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS225@30  | 1611048-04    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS226@30  | 1611048-05    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS227@30  | 1611048-06    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS228@30  | 1611048-07    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS229@30  | 1611048-08    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS230@30  | 1611048-09    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |
| SS231@30  | 1611048-10    | Soil   | 11/07/16 00:00 | 11/07/16 17:45 |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/08/16 06:56

# Summit Scientific 1611048

741 Corporate Circle Suite 1 - Golden, Colorado 80401  
303-277-9310 • 303-277-9531 Fax

Page 1 of 1

Client: TASMAN / PDC (IWWILM)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CJP

Project Manager: M LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD #1  
Project Number: \_\_\_\_\_

| Sample Description                      | Date Sampled | Time Sampled | Number of Containers | Preservative                        |                  |      | Matrix          |                                                                                |      | Analyze For:            |                 |            |          | Special Instructions |
|-----------------------------------------|--------------|--------------|----------------------|-------------------------------------|------------------|------|-----------------|--------------------------------------------------------------------------------|------|-------------------------|-----------------|------------|----------|----------------------|
|                                         |              |              |                      | HCl                                 | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                    | Soil | Air - Canister Serial # | Other (Specify) | GBRXN 8260 | DRD 8015 |                      |
| SS222 @ 30                              | 11/7/16      |              |                      |                                     |                  | X    |                 |                                                                                |      |                         | X               | X          |          |                      |
| SS223 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS224 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS225 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS226 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS227 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS228 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS229 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS230 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| SS231 @ 30                              |              |              |                      |                                     |                  |      |                 |                                                                                |      |                         |                 |            |          |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Turn Around Time (Check)                                                       |      |                         |                 | Notes:     |          |                      |
|                                         |              |              |                      |                                     |                  |      |                 | Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> |      |                         |                 |            |          |                      |
|                                         |              |              |                      |                                     |                  |      |                 | 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>            |      |                         |                 |            |          |                      |
|                                         |              |              |                      |                                     |                  |      |                 | 48 Hours <input type="checkbox"/>                                              |      |                         |                 |            |          |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Sample Integrity:                                                              |      |                         |                 |            |          |                      |
|                                         |              |              |                      |                                     |                  |      |                 | Temperature Upon Receipt: 7.2°C                                                |      |                         |                 | on ice     |          |                      |
|                                         |              |              |                      |                                     |                  |      |                 | Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>    |      |                         |                 |            |          |                      |

11/7/16 1730

www.s2scientific.com

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/08/16 06:56

### Sample Receipt Checklist

S2 Work Order: 611648

Client: Tasman/PDC

Client Project ID: Steinwald #1

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |            |  |  |  |  |
|-----------|------------|--|--|--|--|
| Cooler ID |            |  |  |  |  |
| Temp (°C) | <u>7.2</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No                                  | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    |                                     | <input checked="" type="checkbox"/> |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |                                     |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |                                     |                                     |                   |
|                                                                                                                                             |                                     |                                     |                                     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

11/7/16 1730  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**SS222@30**  
**1611048-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/07/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 111 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| <b>Benzene</b>                     | <b>0.036</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.091</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.049</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.51</b>  | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 129 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**SS223@30**  
**1611048-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/07/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 114 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| Benzene                     | 0.056  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.14   | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.0071 | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.089  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 0.94   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 123 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**SS224@30**  
**1611048-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/07/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 112 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.015</b>  | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| Benzene                     | <b>0.011</b>  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | <b>0.0074</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.092</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>7.4</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 130 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**SS225@30**  
**1611048-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/07/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 113 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| Benzene                     | 0.051  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.16   | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.0081 | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.12   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 1.1    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 128 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**SS226@30**  
**1611048-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/07/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 121 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND            | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.0050</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.012</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND            | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 137 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/08/16 06:56

**SS227@30**  
**1611048-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/07/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 121 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 128 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/08/16 06:56

**SS228@30**  
**1611048-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 115 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 116 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 100 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**SS229@30**  
**1611048-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 113 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/07/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 94.9 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**SS230@30**  
**1611048-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 115 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 119 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 97.9 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/08/16 06:56

**SS231@30**  
**1611048-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611081 | 11/07/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/07/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 113 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/07/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611080 | 11/07/16 | 11/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/07/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 120 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1611081 - EPA 3550A**

**Blank (1611081-BLK1)**

Prepared & Analyzed: 11/07/16

|                        |      |    |       |      |  |     |        |  |  |  |
|------------------------|------|----|-------|------|--|-----|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |     |        |  |  |  |
| Surrogate: o-Terphenyl | 14.3 |    | "     | 12.5 |  | 114 | 30-150 |  |  |  |

**LCS (1611081-BS1)**

Prepared & Analyzed: 11/07/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 473  | 50 | mg/kg | 499  |  | 94.8 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 14.1 |    | "     | 12.5 |  | 113  | 30-150 |  |  |  |

**Matrix Spike (1611081-MS1)**

Source: 1611048-01

Prepared & Analyzed: 11/07/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 475  | 50 | mg/kg | 499  | 12.2 | 92.7 | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 14.0 |    | "     | 12.5 |      | 112  | 30-150 |  |  |  |

**Matrix Spike Dup (1611081-MSD1)**

Source: 1611048-01

Prepared & Analyzed: 11/07/16

|                        |      |    |       |      |      |      |        |      |    |  |
|------------------------|------|----|-------|------|------|------|--------|------|----|--|
| C10-C28 (DRO)          | 469  | 50 | mg/kg | 499  | 12.2 | 91.6 | 50-148 | 1.15 | 20 |  |
| Surrogate: o-Terphenyl | 13.7 |    | "     | 12.5 |      | 109  | 30-150 |      |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/08/16 06:56

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611080 - EPA 5030 Soil MS**

**Blank (1611080-BLK1)**

Prepared & Analyzed: 11/07/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |      |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0395 |        | "     | 0.0400 |  | 98.8 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0417 |        | "     | 0.0400 |  | 104  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0394 |        | "     | 0.0400 |  | 98.5 | 21-167 |  |  |  |

**LCS (1611080-BS1)**

Prepared & Analyzed: 11/07/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.0646 | 0.0020 | "     | 0.100  |  | 64.6 | 58-130 |  |  |  |
| Toluene                          | 0.0793 | 0.0050 | "     | 0.100  |  | 79.3 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.0963 | 0.0050 | "     | 0.0992 |  | 97.1 | 74-139 |  |  |  |
| m,p-Xylene                       | 0.187  | 0.010  | "     | 0.200  |  | 93.5 | 73-137 |  |  |  |
| o-Xylene                         | 0.0978 | 0.0050 | "     | 0.0980 |  | 99.8 | 73-141 |  |  |  |
| Xylenes (total)                  | 0.284  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 2.18   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0353 |        | "     | 0.0400 |  | 88.3 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0398 |        | "     | 0.0400 |  | 99.5 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0418 |        | "     | 0.0400 |  | 104  | 21-167 |  |  |  |

**Matrix Spike (1611080-MS1)**

Source: 1611048-01

Prepared & Analyzed: 11/07/16

|                                  |        |        |       |        |         |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|---------|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND      |      | 10-158 |  |  |  |
| Benzene                          | 0.0912 | 0.0020 | "     | 0.100  | 0.0362  | 55.0 | 30-131 |  |  |  |
| Toluene                          | 0.125  | 0.0050 | "     | 0.100  | 0.0907  | 34.3 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.102  | 0.0050 | "     | 0.0992 | 0.00405 | 99.2 | 22-153 |  |  |  |
| m,p-Xylene                       | 0.214  | 0.010  | "     | 0.200  | 0.0430  | 85.8 | 10-159 |  |  |  |
| o-Xylene                         | 0.101  | 0.0050 | "     | 0.0980 | 0.00642 | 96.3 | 31-151 |  |  |  |
| Xylenes (total)                  | 0.315  | 0.010  | "     |        | 0.0494  |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 2.88   | 0.50   | "     |        | 0.513   |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0485 |        | "     | 0.0400 |         | 121  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0396 |        | "     | 0.0400 |         | 98.9 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0406 |        | "     | 0.0400 |         | 101  | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611080 - EPA 5030 Soil MS**

| Matrix Spike Dup (1611080-MSD1)  |        | Source: 1611048-01 |       |        | Prepared & Analyzed: 11/07/16 |      |        |      |    |  |
|----------------------------------|--------|--------------------|-------|--------|-------------------------------|------|--------|------|----|--|
| Naphthalene                      | ND     | 0.010              | mg/kg |        | ND                            |      | 10-158 |      | 42 |  |
| Benzene                          | 0.0975 | 0.0020             | "     | 0.100  | 0.0362                        | 61.3 | 30-131 | 6.68 | 34 |  |
| Toluene                          | 0.137  | 0.0050             | "     | 0.100  | 0.0907                        | 46.3 | 30-134 | 9.16 | 30 |  |
| Ethylbenzene                     | 0.105  | 0.0050             | "     | 0.0992 | 0.00405                       | 102  | 22-153 | 2.31 | 24 |  |
| m,p-Xylene                       | 0.222  | 0.010              | "     | 0.200  | 0.0430                        | 89.7 | 10-159 | 3.56 | 68 |  |
| o-Xylene                         | 0.103  | 0.0050             | "     | 0.0980 | 0.00642                       | 99.0 | 31-151 | 2.61 | 38 |  |
| Xylenes (total)                  | 0.325  | 0.010              | "     |        | 0.0494                        |      | 30-160 | 3.26 | 30 |  |
| Gasoline Range Hydrocarbons      | 2.96   | 0.50               | "     |        | 0.513                         |      | 30-160 | 2.58 | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0519 |                    | "     | 0.0400 |                               | 130  | 23-173 |      |    |  |
| Surrogate: Toluene-d8            | 0.0403 |                    | "     | 0.0400 |                               | 101  | 20-170 |      |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0413 |                    | "     | 0.0400 |                               | 103  | 21-167 |      |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/08/16 06:56

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 09, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 11/08/16 16:56. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS23      | 1611063-01    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS24      | 1611063-02    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS25      | 1611063-03    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS26      | 1611063-04    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS27      | 1611063-05    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS28      | 1611063-06    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS29      | 1611063-07    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS30      | 1611063-08    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS31      | 1611063-09    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS32      | 1611063-10    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |
| CS33      | 1611063-11    | Soil   | 11/08/16 00:00 | 11/08/16 16:56 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/09/16 06:39

Summit Scientific 16110631

741 Corporate Circle Suite I - Golden, Colorado 80401  
303-277-9310 • 303-277-9531 Fax

Client: TASMAN / PDC (INVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CSP

Page 1 of 2

Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD #1  
Project Number: \_\_\_\_\_

| Sample Description                      | Date Sampled | Time Sampled | Number of Containers | Preservative                               |                  |      | Matrix      |                                                                                                                                                                                            |                         | Analyze For:    |       |                      | Special Instructions |
|-----------------------------------------|--------------|--------------|----------------------|--------------------------------------------|------------------|------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|-------|----------------------|----------------------|
|                                         |              |              |                      | HCl                                        | HNO <sub>3</sub> | None | Groundwater | Soil                                                                                                                                                                                       | Air - Canister Serial # | Other (Specify) | GC/MS | GC/MS                |                      |
| CS 23                                   | 11/8/16      |              |                      |                                            |                  | X    |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 24                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 25                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 26                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 27                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 28                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 29                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 30                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 31                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| CS 32                                   |              |              |                      |                                            |                  |      |             |                                                                                                                                                                                            |                         |                 |       |                      |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____        |                  |      |             | Turn Around Time (Check)                                                                                                                                                                   |                         |                 |       | Notes:<br><br>on ice |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____        |                  |      |             | Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/><br>24 Hours <input type="checkbox"/> Standard <input type="checkbox"/><br>48 Hours <input type="checkbox"/> |                         |                 |       |                      |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received in Lab by: _____ Date/Time: _____ |                  |      |             | Sample Integrity:<br>Temperature Upon Receipt: <u>0.6°C</u><br>Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                 |                         |                 |       |                      |                      |

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/09/16 06:39

### Sample Receipt Checklist

S2 Work Order: 1611063

Client: Tasman/PDC

Client Project ID: Steinwald #1

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |     |  |  |  |  |
|-----------|-----|--|--|--|--|
| Cooler ID |     |  |  |  |  |
| Temp (°C) | 0-6 |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | <input checked="" type="checkbox"/> |    |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |    |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |    |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |    |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     |    | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |    |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |    |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |    |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |    |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |    | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |    | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |    | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |    | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |    |                                     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

ML  
Signature or Initials of Custodian

11/8/16 1700  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**CS23**  
**1611063-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.013</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.024</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.52</b>  | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 101 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 99.5 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**CS24**  
**1611063-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 92.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                            | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.0057</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.030</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.7</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 99.9 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 114 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**CS25**  
**1611063-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 89.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                            | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.0066</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.044</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.5</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 115 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**CS26**  
**1611063-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 92.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                            | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.0056</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.016</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.7</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 116 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 102 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**CS27**  
**1611063-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.1 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                            | Result      | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|-------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND          | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                            | ND          | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)                    | ND          | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.95</b> | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 124 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 109 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**CS28**  
**1611063-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/08/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 88.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                            | Result      | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|-------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND          | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                            | ND          | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)                    | ND          | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.69</b> | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 119 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/09/16 06:39

**CS29**  
**1611063-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/09/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**CS30**  
**1611063-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/09/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 1.3    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/09/16 06:39

**CS31**  
**1611063-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/09/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 90.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 0.88   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/09/16 06:39

**CS32**  
**1611063-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/09/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 121 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/09/16 06:39

**CS33**  
**1611063-11 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | 270    | 50              | mg/kg | 1        | 1611092 | 11/08/16 | 11/09/16 | 8015M  |       |

Date Sampled: **11/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.012  | 0.010           | mg/kg | 1        | 1611091 | 11/08/16 | 11/09/16 | EPA 8260B |       |
| Benzene                     | 0.011  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.13   | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.025  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.38   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 7.2    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 98.5 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 111 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 99.4 %          | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1611092 - EPA 3550A**

**Blank (1611092-BLK1)**

Prepared & Analyzed: 11/08/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.7 " 12.5 93.6 30-150

**LCS (1611092-BS1)**

Prepared & Analyzed: 11/08/16

C10-C28 (DRO) 504 50 mg/kg 499 101 73-134

Surrogate: o-Terphenyl 11.9 " 12.5 94.9 30-150

**Matrix Spike (1611092-MS1)**

Source: 1611060-01

Prepared & Analyzed: 11/08/16

C10-C28 (DRO) 494 50 mg/kg 499 15.2 96.0 50-148

Surrogate: o-Terphenyl 11.7 " 12.5 93.8 30-150

**Matrix Spike Dup (1611092-MSD1)**

Source: 1611060-01

Prepared & Analyzed: 11/08/16

C10-C28 (DRO) 516 50 mg/kg 499 15.2 100 50-148 4.33 20

Surrogate: o-Terphenyl 12.2 " 12.5 97.8 30-150

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/09/16 06:39

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611091 - EPA 5030 Soil MS**

**Blank (1611091-BLK1)**

Prepared & Analyzed: 11/08/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |      |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0411 |        | "     | 0.0400 |  | 103  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0397 |        | "     | 0.0400 |  | 99.2 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0386 |        | "     | 0.0400 |  | 96.4 | 21-167 |  |  |  |

**LCS (1611091-BS1)**

Prepared & Analyzed: 11/08/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.0668 | 0.0020 | "     | 0.100  |  | 66.8 | 58-130 |  |  |  |
| Toluene                          | 0.0881 | 0.0050 | "     | 0.100  |  | 88.1 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.0969 | 0.0050 | "     | 0.0992 |  | 97.7 | 74-139 |  |  |  |
| m,p-Xylene                       | 0.189  | 0.010  | "     | 0.200  |  | 94.9 | 73-137 |  |  |  |
| o-Xylene                         | 0.0965 | 0.0050 | "     | 0.0980 |  | 98.5 | 73-141 |  |  |  |
| Xylenes (total)                  | 0.286  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 2.29   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0381 |        | "     | 0.0400 |  | 95.2 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0434 |        | "     | 0.0400 |  | 108  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0381 |        | "     | 0.0400 |  | 95.2 | 21-167 |  |  |  |

**Matrix Spike (1611091-MS1)**

Source: 1611060-01

Prepared & Analyzed: 11/08/16

|                                  |        |        |       |        |         |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|---------|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND      |      | 10-158 |  |  |  |
| Benzene                          | 0.0682 | 0.0020 | "     | 0.100  | 0.00312 | 65.1 | 30-131 |  |  |  |
| Toluene                          | 0.0771 | 0.0050 | "     | 0.100  | ND      | 77.1 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.0955 | 0.0050 | "     | 0.0992 | ND      | 96.3 | 22-153 |  |  |  |
| m,p-Xylene                       | 0.185  | 0.010  | "     | 0.200  | ND      | 92.4 | 10-159 |  |  |  |
| o-Xylene                         | 0.0966 | 0.0050 | "     | 0.0980 | ND      | 98.5 | 31-151 |  |  |  |
| Xylenes (total)                  | 0.281  | 0.010  | "     |        | ND      |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 2.29   | 0.50   | "     |        | ND      |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0384 |        | "     | 0.0400 |         | 96.1 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0381 |        | "     | 0.0400 |         | 95.2 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0382 |        | "     | 0.0400 |         | 95.5 | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611091 - EPA 5030 Soil MS**

| Matrix Spike Dup (1611091-MSD1)  |        |        | Source: 1611060-01 |        | Prepared & Analyzed: 11/08/16 |      |        |       |    |  |
|----------------------------------|--------|--------|--------------------|--------|-------------------------------|------|--------|-------|----|--|
| Naphthalene                      | ND     | 0.010  | mg/kg              |        | ND                            |      | 10-158 |       | 42 |  |
| Benzene                          | 0.0701 | 0.0020 | "                  | 0.100  | 0.00312                       | 67.0 | 30-131 | 2.73  | 34 |  |
| Toluene                          | 0.0778 | 0.0050 | "                  | 0.100  | ND                            | 77.8 | 30-134 | 0.968 | 30 |  |
| Ethylbenzene                     | 0.0978 | 0.0050 | "                  | 0.0992 | ND                            | 98.6 | 22-153 | 2.42  | 24 |  |
| m,p-Xylene                       | 0.187  | 0.010  | "                  | 0.200  | ND                            | 93.7 | 10-159 | 1.39  | 68 |  |
| o-Xylene                         | 0.0987 | 0.0050 | "                  | 0.0980 | ND                            | 101  | 31-151 | 2.15  | 38 |  |
| Xylenes (total)                  | 0.286  | 0.010  | "                  |        | ND                            |      | 30-160 | 1.65  | 30 |  |
| Gasoline Range Hydrocarbons      | 2.26   | 0.50   | "                  |        | ND                            |      | 30-160 | 1.25  | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0391 |        | "                  | 0.0400 |                               | 97.7 | 23-173 |       |    |  |
| Surrogate: Toluene-d8            | 0.0383 |        | "                  | 0.0400 |                               | 95.8 | 20-170 |       |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0391 |        | "                  | 0.0400 |                               | 97.8 | 21-167 |       |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/16 06:39

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 15, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 11/14/16 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS34      | 1611118-01    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS35      | 1611118-02    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS36      | 1611118-03    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS37      | 1611118-04    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS38      | 1611118-05    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS39      | 1611118-06    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS40      | 1611118-07    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS41      | 1611118-08    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS42      | 1611118-09    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS43      | 1611118-10    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |
| CS44      | 1611118-11    | Soil   | 11/14/16 00:00 | 11/14/16 16:40 |

Summit Scientific

*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.*







PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/15/16 06:34

### Sample Receipt Checklist

S2 Work Order: 161118

Client: Tasman/PDC

Client Project ID: Steinwald

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |             |  |  |  |  |
|-----------|-------------|--|--|--|--|
| Cooler ID |             |  |  |  |  |
| Temp (°C) | <u>-2.5</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No                                  | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    |                                     | <input checked="" type="checkbox"/> |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |                                     |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |                                     |                                     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

MA  
Signature or Initials of Custodian

11/14/16 1730  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS34**  
**1611118-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/14/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 89.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                            | Result     | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND         | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                            | ND         | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND         | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND         | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)                    | ND         | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.5</b> | <b>0.50</b>     | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 131 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS35**  
**1611118-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|--------------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50                 | mg/kg | 1        | 1611163 | 11/14/16 | 11/14/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting<br>Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|--------------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.3 %             | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                            | Result      | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|-------------|--------------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND          | 0.010              | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                            | ND          | 0.0020             | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND          | 0.0050             | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND          | 0.0050             | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)                    | ND          | 0.010              | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.70</b> | 0.50               | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting<br>Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|--------------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 136 %              | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 107 %              | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %              | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS36**  
**1611118-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/14/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 86.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/15/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.020</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>2.7</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 137 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 111 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/15/16 06:34

**CS37**  
**1611118-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/14/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 92.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 1.3    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 139 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS38**  
**1611118-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/14/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 85.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                            | Result      | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|-------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND          | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                            | ND          | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)                    | ND          | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.53</b> | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 141 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 107 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS39**  
**1611118-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/14/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 84.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 1.3    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 137 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 107 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS40**  
**1611118-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/15/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 88.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| <b>Benzene</b>                     | <b>0.013</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.054</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.067</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>2.8</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 139 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 110 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS41**  
**1611118-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/15/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 86.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.012</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.028</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.5</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 138 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 110 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS42**  
**1611118-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/15/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                            | Result      | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|-------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND          | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                            | ND          | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                            | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND          | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)                    | ND          | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.69</b> | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 124 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS43**  
**1611118-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/15/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 0.81   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 120 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.8 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**CS44**  
**1611118-11 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/14/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611163 | 11/14/16 | 11/15/16 | 8015M  |       |

Date Sampled: **11/14/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/14/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611162 | 11/14/16 | 11/14/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/14/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 155 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 109 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1611163 - EPA 3550A**

**Blank (1611163-BLK1)**

Prepared: 11/14/16 Analyzed: 11/15/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.3 " 12.5 90.6 30-150

**LCS (1611163-BS1)**

Prepared: 11/14/16 Analyzed: 11/15/16

C10-C28 (DRO) 537 50 mg/kg 499 108 73-134

Surrogate: o-Terphenyl 11.1 " 12.5 88.7 30-150

**Matrix Spike (1611163-MS1)**

**Source: 1611117-02**

Prepared: 11/14/16 Analyzed: 11/15/16

C10-C28 (DRO) 468 50 mg/kg 499 24.0 89.0 50-148

Surrogate: o-Terphenyl 10.6 " 12.5 84.6 30-150

**Matrix Spike Dup (1611163-MSD1)**

**Source: 1611117-02**

Prepared: 11/14/16 Analyzed: 11/15/16

C10-C28 (DRO) 498 50 mg/kg 499 24.0 95.0 50-148 6.25 20

Surrogate: o-Terphenyl 11.2 " 12.5 89.9 30-150

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611162 - EPA 5030 Soil MS**

**Blank (1611162-BLK1)**

Prepared & Analyzed: 11/14/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |      |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0438 |        | "     | 0.0400 |  | 110  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0379 |        | "     | 0.0400 |  | 94.8 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0403 |        | "     | 0.0400 |  | 101  | 21-167 |  |  |  |

**LCS (1611162-BS1)**

Prepared & Analyzed: 11/14/16

|                                  |        |        |       |        |  |     |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|-----|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |     | 66-138 |  |  |  |
| Benzene                          | 0.111  | 0.0020 | "     | 0.100  |  | 111 | 58-130 |  |  |  |
| Toluene                          | 0.115  | 0.0050 | "     | 0.100  |  | 115 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.126  | 0.0050 | "     | 0.0992 |  | 127 | 74-139 |  |  |  |
| m,p-Xylene                       | 0.221  | 0.010  | "     | 0.200  |  | 111 | 73-137 |  |  |  |
| o-Xylene                         | 0.121  | 0.0050 | "     | 0.0980 |  | 123 | 73-141 |  |  |  |
| Xylenes (total)                  | 0.342  | 0.010  | "     |        |  |     | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 2.78   | 0.50   | "     |        |  |     | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0456 |        | "     | 0.0400 |  | 114 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0404 |        | "     | 0.0400 |  | 101 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0402 |        | "     | 0.0400 |  | 100 | 21-167 |  |  |  |

**Matrix Spike (1611162-MS1)**

Source: 161117-02

Prepared & Analyzed: 11/14/16

|                                  |        |        |       |        |    |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|----|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND |      | 10-158 |  |  |  |
| Benzene                          | 0.113  | 0.0020 | "     | 0.100  | ND | 113  | 30-131 |  |  |  |
| Toluene                          | 0.119  | 0.0050 | "     | 0.100  | ND | 119  | 30-134 |  |  |  |
| Ethylbenzene                     | 0.131  | 0.0050 | "     | 0.0992 | ND | 132  | 22-153 |  |  |  |
| m,p-Xylene                       | 0.244  | 0.010  | "     | 0.200  | ND | 122  | 10-159 |  |  |  |
| o-Xylene                         | 0.131  | 0.0050 | "     | 0.0980 | ND | 134  | 31-151 |  |  |  |
| Xylenes (total)                  | 0.375  | 0.010  | "     |        | ND |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 3.06   | 0.50   | "     |        | ND |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0464 |        | "     | 0.0400 |    | 116  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0399 |        | "     | 0.0400 |    | 99.7 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0408 |        | "     | 0.0400 |    | 102  | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611162 - EPA 5030 Soil MS**

| Matrix Spike Dup (1611162-MSD1)  |        | Source: 161117-02 |       |        | Prepared & Analyzed: 11/14/16 |      |        |      |    |  |
|----------------------------------|--------|-------------------|-------|--------|-------------------------------|------|--------|------|----|--|
| Naphthalene                      | ND     | 0.010             | mg/kg |        | ND                            |      | 10-158 |      | 42 |  |
| Benzene                          | 0.112  | 0.0020            | "     | 0.100  | ND                            | 112  | 30-131 | 1.63 | 34 |  |
| Toluene                          | 0.116  | 0.0050            | "     | 0.100  | ND                            | 116  | 30-134 | 2.19 | 30 |  |
| Ethylbenzene                     | 0.128  | 0.0050            | "     | 0.0992 | ND                            | 129  | 22-153 | 2.39 | 24 |  |
| m,p-Xylene                       | 0.229  | 0.010             | "     | 0.200  | ND                            | 115  | 10-159 | 6.39 | 68 |  |
| o-Xylene                         | 0.125  | 0.0050            | "     | 0.0980 | ND                            | 128  | 31-151 | 4.50 | 38 |  |
| Xylenes (total)                  | 0.354  | 0.010             | "     |        | ND                            |      | 30-160 | 5.73 | 30 |  |
| Gasoline Range Hydrocarbons      | 2.95   | 0.50              | "     |        | ND                            |      | 30-160 | 3.63 | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0447 |                   | "     | 0.0400 |                               | 112  | 23-173 |      |    |  |
| Surrogate: Toluene-d8            | 0.0399 |                   | "     | 0.0400 |                               | 99.7 | 20-170 |      |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0398 |                   | "     | 0.0400 |                               | 99.5 | 21-167 |      |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/15/16 06:34

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 27, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 11/23/16 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/27/16 14:26

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS45      | 1611211-01    | Soil   | 11/23/16 00:00 | 11/23/16 17:30 |
| CS46      | 1611211-02    | Soil   | 11/23/16 00:00 | 11/23/16 17:30 |
| CS47      | 1611211-03    | Soil   | 11/23/16 00:00 | 11/23/16 17:30 |
| CS48      | 1611211-04    | Soil   | 11/23/16 00:00 | 11/23/16 17:30 |
| CS49      | 1611211-05    | Soil   | 11/23/16 00:00 | 11/23/16 17:30 |
| CS50      | 1611211-06    | Soil   | 11/23/16 00:00 | 11/23/16 17:30 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/27/16 14:26

## Summit Scientific 1611211

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Client: TASMAN / PDC (INVOICING) Project Manager: M. LONGHURST Page 1 of 1  
Address: \_\_\_\_\_ E-Mail: MARK.LONGHURST@PDC.COM  
City/State/Zip: \_\_\_\_\_ Project Name: STEINWALD  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Number: \_\_\_\_\_  
Sampler Name: CSP

| Sample Description                      | Date Sampled | Time Sampled | Number of Containers | Preservative                        |                  |      | Matrix          |                                                                                                                                                                                            |      | Analyze For:             |                 |                                                                         |   | Special Instructions |   |
|-----------------------------------------|--------------|--------------|----------------------|-------------------------------------|------------------|------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------|-----------------|-------------------------------------------------------------------------|---|----------------------|---|
|                                         |              |              |                      | HCl                                 | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                                                                                                                                | Soil | Air - Container Serial # | Other (Specify) | 1                                                                       | 2 |                      | 3 |
| CS 45                                   | 11/23/16     |              |                      |                                     |                  | X    |                 |                                                                                                                                                                                            |      |                          | X               | X                                                                       |   |                      |   |
| CS 46                                   |              |              |                      |                                     |                  |      |                 |                                                                                                                                                                                            |      |                          |                 |                                                                         |   |                      |   |
| CS 47                                   |              |              |                      |                                     |                  |      |                 |                                                                                                                                                                                            |      |                          |                 |                                                                         |   |                      |   |
| CS 48                                   |              |              |                      |                                     |                  |      |                 |                                                                                                                                                                                            |      |                          |                 |                                                                         |   |                      |   |
| CS 49                                   |              |              |                      |                                     |                  |      |                 |                                                                                                                                                                                            |      |                          |                 |                                                                         |   |                      |   |
| CS 50                                   |              |              |                      |                                     |                  |      |                 |                                                                                                                                                                                            |      |                          |                 |                                                                         |   |                      |   |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Turn Around Time (Check)                                                                                                                                                                   |      |                          |                 | Notes:                                                                  |   |                      |   |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/><br>24 Hours <input type="checkbox"/> Standard <input type="checkbox"/><br>48 Hours <input type="checkbox"/> |      |                          |                 | Sample Integrity: _____                                                 |   |                      |   |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____ |                  |      |                 | Temperature Upon Receipt: <u>0.5°C</u>                                                                                                                                                     |      |                          |                 | Intact: <input checked="" type="checkbox"/> No <input type="checkbox"/> |   |                      |   |

11/23/16 1710 11/23/16 1640  
www.summitscientific.com

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/27/16 14:26

### Sample Receipt Checklist

S2 Work Order: 1611211

Client: Tasman POC

Client Project ID: Steinwald

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |            |  |  |  |  |
|-----------|------------|--|--|--|--|
| Cooler ID |            |  |  |  |  |
| Temp (°C) | <u>0.5</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | <input checked="" type="checkbox"/> |    |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |    |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |    |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |    |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     |    | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |    |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |    |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |    |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |    |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |    | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , ect                   |                                     |    | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |    | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |    | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |    | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |    |                                     |                   |
|                                                                                                                                             |                                     |    |                                     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Makita  
Custodian Printed Name

ML  
Signature or Initials of Custodian

11/23/16 1710  
Date/Time





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/27/16 14:26

**CS45**  
**1611211-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/23/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611280 | 11/23/16 | 11/24/16 | 8015M  |       |

Date Sampled: **11/23/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/23/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611281 | "        | 11/23/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/23/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 131 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 108 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/27/16 14:26

**CS46**  
**1611211-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/23/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611280 | 11/23/16 | 11/24/16 | 8015M  |       |

Date Sampled: **11/23/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/23/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611281 | "        | 11/23/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/23/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 142 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/27/16 14:26

**CS47**  
**1611211-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/23/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611280 | 11/23/16 | 11/24/16 | 8015M  |       |

Date Sampled: **11/23/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/23/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611281 | "        | 11/23/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/23/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 138 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/27/16 14:26

**CS48**  
**1611211-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/23/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611280 | 11/23/16 | 11/24/16 | 8015M  |       |

Date Sampled: **11/23/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/23/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611281 | "        | 11/23/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/23/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 139 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/27/16 14:26

**CS49**  
**1611211-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/23/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611280 | 11/23/16 | 11/24/16 | 8015M  |       |

Date Sampled: **11/23/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/23/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611281 | "        | 11/23/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/23/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 145 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/27/16 14:26

**CS50**  
**1611211-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/23/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611280 | 11/23/16 | 11/24/16 | 8015M  |       |

Date Sampled: **11/23/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/23/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611281 | "        | 11/23/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/23/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 138 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/27/16 14:26

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1611280 - EPA 3550A**

**Blank (1611280-BLK1)**

Prepared & Analyzed: 11/23/16

|                        |      |    |       |      |  |     |        |  |  |  |
|------------------------|------|----|-------|------|--|-----|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |     |        |  |  |  |
| Surrogate: o-Terphenyl | 12.6 |    | "     | 12.5 |  | 100 | 30-150 |  |  |  |

**LCS (1611280-BS1)**

Prepared & Analyzed: 11/23/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 424  | 50 | mg/kg | 499  |  | 85.0 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 12.5 |    | "     | 12.5 |  | 99.6 | 30-150 |  |  |  |

**Matrix Spike (1611280-MS1)**

Source: 1611199-01

Prepared & Analyzed: 11/23/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 478  | 50 | mg/kg | 499  | 10.5 | 93.7 | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 12.4 |    | "     | 12.5 |      | 99.2 | 30-150 |  |  |  |

**Matrix Spike Dup (1611280-MSD1)**

Source: 1611199-01

Prepared & Analyzed: 11/23/16

|                        |      |    |       |      |      |     |        |      |    |  |
|------------------------|------|----|-------|------|------|-----|--------|------|----|--|
| C10-C28 (DRO)          | 539  | 50 | mg/kg | 499  | 10.5 | 106 | 50-148 | 11.9 | 20 |  |
| Surrogate: o-Terphenyl | 12.6 |    | "     | 12.5 |      | 101 | 30-150 |      |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/27/16 14:26

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611281 - EPA 5030 Soil MS**

**Blank (1611281-BLK1)**

Prepared & Analyzed: 11/23/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | 0.0104 | 0.010  | mg/kg |        |  |      |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |      |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0397 |        | "     | 0.0400 |  | 99.3 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0396 |        | "     | 0.0400 |  | 99.0 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0402 |        | "     | 0.0400 |  | 100  | 21-167 |  |  |  |

**LCS (1611281-BS1)**

Prepared & Analyzed: 11/23/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | 0.138  | 0.010  | mg/kg | 0.150  |  | 92.2 | 66-138 |  |  |  |
| Benzene                          | 0.134  | 0.0020 | "     | 0.150  |  | 89.2 | 58-130 |  |  |  |
| Toluene                          | 0.131  | 0.0050 | "     | 0.150  |  | 87.6 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.123  | 0.0050 | "     | 0.150  |  | 82.0 | 74-139 |  |  |  |
| m,p-Xylene                       | 0.245  | 0.010  | "     | 0.300  |  | 81.6 | 73-137 |  |  |  |
| o-Xylene                         | 0.134  | 0.0050 | "     | 0.150  |  | 89.2 | 73-141 |  |  |  |
| Xylenes (total)                  | 0.379  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0398 |        | "     | 0.0400 |  | 99.5 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0400 |        | "     | 0.0400 |  | 100  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0389 |        | "     | 0.0400 |  | 97.4 | 21-167 |  |  |  |

**Matrix Spike (1611281-MS1)**

Source: 1611199-01

Prepared: 11/23/16 Analyzed: 11/24/16

|                                  |        |        |       |        |    |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|----|------|--------|--|--|--|
| Naphthalene                      | 0.143  | 0.010  | mg/kg | 0.150  | ND | 95.6 | 10-158 |  |  |  |
| Benzene                          | 0.131  | 0.0020 | "     | 0.150  | ND | 87.1 | 30-131 |  |  |  |
| Toluene                          | 0.128  | 0.0050 | "     | 0.150  | ND | 85.4 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.121  | 0.0050 | "     | 0.150  | ND | 80.4 | 22-153 |  |  |  |
| m,p-Xylene                       | 0.235  | 0.010  | "     | 0.300  | ND | 78.3 | 10-159 |  |  |  |
| o-Xylene                         | 0.129  | 0.0050 | "     | 0.150  | ND | 85.7 | 31-151 |  |  |  |
| Xylenes (total)                  | 0.363  | 0.010  | "     |        | ND |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        | ND |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0404 |        | "     | 0.0400 |    | 101  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0404 |        | "     | 0.0400 |    | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0394 |        | "     | 0.0400 |    | 98.4 | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/27/16 14:26

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611281 - EPA 5030 Soil MS**

| Matrix Spike Dup (1611281-MSD1)  |        | Source: 1611199-01 |       |        | Prepared: 11/23/16 |      | Analyzed: 11/24/16 |      |    |  |
|----------------------------------|--------|--------------------|-------|--------|--------------------|------|--------------------|------|----|--|
| Naphthalene                      | 0.156  | 0.010              | mg/kg | 0.150  | ND                 | 104  | 10-158             | 8.44 | 42 |  |
| Benzene                          | 0.123  | 0.0020             | "     | 0.150  | ND                 | 82.2 | 30-131             | 5.84 | 34 |  |
| Toluene                          | 0.123  | 0.0050             | "     | 0.150  | ND                 | 81.9 | 30-134             | 4.11 | 30 |  |
| Ethylbenzene                     | 0.117  | 0.0050             | "     | 0.150  | ND                 | 78.0 | 22-153             | 3.03 | 24 |  |
| m,p-Xylene                       | 0.230  | 0.010              | "     | 0.300  | ND                 | 76.6 | 10-159             | 2.18 | 68 |  |
| o-Xylene                         | 0.125  | 0.0050             | "     | 0.150  | ND                 | 83.3 | 31-151             | 2.84 | 38 |  |
| Xylenes (total)                  | 0.355  | 0.010              | "     |        | ND                 |      | 30-160             | 2.41 | 30 |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50               | "     |        | ND                 |      | 30-160             |      | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0395 |                    | "     | 0.0400 |                    | 98.8 | 23-173             |      |    |  |
| Surrogate: Toluene-d8            | 0.0396 |                    | "     | 0.0400 |                    | 99.0 | 20-170             |      |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0390 |                    | "     | 0.0400 |                    | 97.6 | 21-167             |      |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/27/16 14:26

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 29, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 11/28/16 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| SS232@45  | 1611217-01    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| SS233@45  | 1611217-02    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| SS234@40  | 1611217-03    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| SS235@40  | 1611217-04    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| SS236@40  | 1611217-05    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| CS51      | 1611217-06    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| CS52      | 1611217-07    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| CS53      | 1611217-08    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| CS54      | 1611217-09    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |
| CS55      | 1611217-10    | Soil   | 11/28/16 00:00 | 11/28/16 17:30 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

## Summit Scientific 1611217

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Client: TASMAN / PDC (INVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CSP

Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD  
Project Number: \_\_\_\_\_

Page 1 of 1

| Sample Description                      | Date Sampled | Time Sampled | Number of Containers | Preservative                               |                  |      | Matrix          |                                                                                                                                                                                                                        |      | Analyze For:       |                 |                      |            | Special Instructions |
|-----------------------------------------|--------------|--------------|----------------------|--------------------------------------------|------------------|------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|-----------------|----------------------|------------|----------------------|
|                                         |              |              |                      | HCl                                        | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                                                                                                                                                            | Soil | Air - Cation/Anion | Other (Specify) | 161XAN COW           | 161XAN COW |                      |
| SS232A 45                               | 11/28/16     |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| SS233A 45                               |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| SS234A 40                               |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| SS235A 40                               |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| SS236A 40                               |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| CS511                                   |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| CS512                                   |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| CS513                                   |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| CS514                                   |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| CS515                                   |              |              |                      |                                            |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____        |                  |      |                 | Turn Around Time (Check)<br>Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/><br>24 Hours <input type="checkbox"/> Standard <input type="checkbox"/><br>48 Hours <input type="checkbox"/> |      |                    |                 | Notes: <u>on ice</u> |            |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received by: _____ Date/Time: _____        |                  |      |                 | Sample Integrity:<br>Temperature Upon Receipt: <u>3.6°C</u><br>Intact: <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                                 |      |                    |                 |                      |            |                      |
| Relinquished by: _____ Date/Time: _____ |              |              |                      | Received in Lab by: _____ Date/Time: _____ |                  |      |                 |                                                                                                                                                                                                                        |      |                    |                 |                      |            |                      |

11/28/16 1715 SSA-2817 1715  
www.s2scientific.com

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

#### Sample Receipt Checklist

S2 Work Order: 1411217

Client: Tasman/PDC

Client Project ID: Steinwald

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |            |  |  |  |  |
|-----------|------------|--|--|--|--|
| Cooler ID |            |  |  |  |  |
| Temp (°C) | <u>3.6</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | <input checked="" type="checkbox"/> |    |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |    |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |    |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |    |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     |    | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |    |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |    |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |    |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |    |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |    | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |    | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |    | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |    | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |    |                                     |                   |
| <sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.                                   |                                     |    |                                     |                   |

Nakita  
Custodian Printed Name

ML  
Signature or Initials of Custodian

11/28/16 1715  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

**SS232@45**  
**1611217-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 134 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 108 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

**SS233@45**  
**1611217-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 95.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 129 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

**SS234@40**  
**1611217-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 131 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

**SS235@40**  
**1611217-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 92.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 139 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 108 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

**SS236@40**  
**1611217-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 133 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

**CS51**  
**1611217-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 140 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

**CS52**  
**1611217-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 133 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

**CS53**  
**1611217-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 133 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

**CS54**  
**1611217-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 94.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/28/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 136 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 107 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

**CS55**  
**1611217-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/28/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611291 | 11/28/16 | 11/28/16 | 8015M  |       |

Date Sampled: **11/28/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/28/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611301 | 11/28/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/28/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 134 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 107 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1611291 - EPA 3550A**

**Blank (1611291-BLK1)**

Prepared & Analyzed: 11/28/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.4 30-150

**LCS (1611291-BS1)**

Prepared & Analyzed: 11/28/16

C10-C28 (DRO) 455 50 mg/kg 499 91.2 73-134

Surrogate: o-Terphenyl 13.3 " 12.5 106 30-150

**Matrix Spike (1611291-MS1)**

Source: 1611212-01

Prepared: 11/28/16 Analyzed: 11/29/16

C10-C28 (DRO) 380 50 mg/kg 499 162 43.8 50-148 QM-07

Surrogate: o-Terphenyl 12.5 " 12.5 99.7 30-150

**Matrix Spike Dup (1611291-MSD1)**

Source: 1611212-01

Prepared: 11/28/16 Analyzed: 11/29/16

C10-C28 (DRO) 369 50 mg/kg 494 162 41.9 50-148 3.11 20 QM-07

Surrogate: o-Terphenyl 12.3 " 12.4 99.3 30-150

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611301 - EPA 5030 Soil MS**

**Blank (1611301-BLK1)**

Prepared & Analyzed: 11/28/16

|                                  |        |        |       |        |  |     |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|-----|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |     |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |     |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |     |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |     |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0489 |        | "     | 0.0400 |  | 122 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0421 |        | "     | 0.0400 |  | 105 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0429 |        | "     | 0.0400 |  | 107 | 21-167 |  |  |  |

**LCS (1611301-BS1)**

Prepared & Analyzed: 11/28/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.0775 | 0.0020 | "     | 0.100  |  | 77.5 | 58-130 |  |  |  |
| Toluene                          | 0.0871 | 0.0050 | "     | 0.100  |  | 87.1 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.105  | 0.0050 | "     | 0.0992 |  | 106  | 74-139 |  |  |  |
| m,p-Xylene                       | 0.188  | 0.010  | "     | 0.200  |  | 94.0 | 73-137 |  |  |  |
| o-Xylene                         | 0.0986 | 0.0050 | "     | 0.0980 |  | 101  | 73-141 |  |  |  |
| Xylenes (total)                  | 0.286  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 2.84   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0469 |        | "     | 0.0400 |  | 117  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0405 |        | "     | 0.0400 |  | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0408 |        | "     | 0.0400 |  | 102  | 21-167 |  |  |  |

**Matrix Spike (1611301-MS1)**

Source: 1611213-01

Prepared & Analyzed: 11/28/16

|                                  |        |        |       |        |    |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|----|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND |      | 10-158 |  |  |  |
| Benzene                          | 0.0786 | 0.0020 | "     | 0.100  | ND | 78.6 | 30-131 |  |  |  |
| Toluene                          | 0.0878 | 0.0050 | "     | 0.100  | ND | 87.8 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.111  | 0.0050 | "     | 0.0992 | ND | 111  | 22-153 |  |  |  |
| m,p-Xylene                       | 0.199  | 0.010  | "     | 0.200  | ND | 99.8 | 10-159 |  |  |  |
| o-Xylene                         | 0.103  | 0.0050 | "     | 0.0980 | ND | 105  | 31-151 |  |  |  |
| Xylenes (total)                  | 0.302  | 0.010  | "     |        | ND |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 2.90   | 0.50   | "     |        | ND |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0486 |        | "     | 0.0400 |    | 121  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0404 |        | "     | 0.0400 |    | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0426 |        | "     | 0.0400 |    | 106  | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/29/16 06:00

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611301 - EPA 5030 Soil MS**

| Matrix Spike Dup (1611301-MSD1)  |        | Source: 1611213-01 |       |        | Prepared & Analyzed: 11/28/16 |      |        |        |    |  |
|----------------------------------|--------|--------------------|-------|--------|-------------------------------|------|--------|--------|----|--|
| Naphthalene                      | ND     | 0.010              | mg/kg |        | ND                            |      | 10-158 |        | 42 |  |
| Benzene                          | 0.0786 | 0.0020             | "     | 0.100  | ND                            | 78.6 | 30-131 | 0.0763 | 34 |  |
| Toluene                          | 0.0885 | 0.0050             | "     | 0.100  | ND                            | 88.5 | 30-134 | 0.782  | 30 |  |
| Ethylbenzene                     | 0.110  | 0.0050             | "     | 0.0992 | ND                            | 111  | 22-153 | 0.272  | 24 |  |
| m,p-Xylene                       | 0.198  | 0.010              | "     | 0.200  | ND                            | 99.4 | 10-159 | 0.407  | 68 |  |
| o-Xylene                         | 0.105  | 0.0050             | "     | 0.0980 | ND                            | 107  | 31-151 | 2.05   | 38 |  |
| Xylenes (total)                  | 0.303  | 0.010              | "     |        | ND                            |      | 30-160 | 0.436  | 30 |  |
| Gasoline Range Hydrocarbons      | 2.78   | 0.50               | "     |        | ND                            |      | 30-160 | 4.23   | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0506 |                    | "     | 0.0400 |                               | 126  | 23-173 |        |    |  |
| Surrogate: Toluene-d8            | 0.0398 |                    | "     | 0.0400 |                               | 99.4 | 20-170 |        |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0415 |                    | "     | 0.0400 |                               | 104  | 21-167 |        |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/29/16 06:00

### Notes and Definitions

QM-07    The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET       Analyte DETECTED

ND       Analyte NOT DETECTED at or above the reporting limit

NR       Not Reported

dry       Sample results reported on a dry weight basis

RPD       Relative Percent Difference

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 30, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 11/29/16 16:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| SS237@45  | 1611230-01    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS238@45  | 1611230-02    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS239@40  | 1611230-03    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS240@45  | 1611230-04    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS241@45  | 1611230-05    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS242@40  | 1611230-06    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS243@40  | 1611230-07    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS244@40  | 1611230-08    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS245@40  | 1611230-09    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS246@40  | 1611230-10    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS247@40  | 1611230-11    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| SS248@40  | 1611230-12    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS56      | 1611230-13    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS57      | 1611230-14    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS58      | 1611230-15    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS59      | 1611230-16    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS60      | 1611230-17    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS61      | 1611230-18    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS62      | 1611230-19    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |
| CS63      | 1611230-20    | Soil   | 11/29/16 00:00 | 11/29/16 16:48 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

## Summit Scientific 16/1230.1

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Client: TASMAN / PDC (INVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CSP

Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD  
Project Number: \_\_\_\_\_

Page 1 of 2

| Sample Description                                                  | Date Sampled | Time Sampled | Number of Containers | Preservative                                                           |                  |      |                 | Matrix                                                                                                                                                                                                                 |      | Analyze For:         |                 | Special Instructions    |
|---------------------------------------------------------------------|--------------|--------------|----------------------|------------------------------------------------------------------------|------------------|------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------|-----------------|-------------------------|
|                                                                     |              |              |                      | HCl                                                                    | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                                                                                                                                                            | Soil | Air - Gaseous Solids | Other (Specify) |                         |
| SS-237-A-45                                                         | 11/24/16     |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-238-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-239-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-240-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-241-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-242-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-243-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-244-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-245-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| SS-246-A-45                                                         |              |              |                      |                                                                        |                  | X    |                 |                                                                                                                                                                                                                        |      |                      |                 |                         |
| Relinquished by: <u>[Signature]</u> Date/Time: <u>11/29/16 1630</u> |              |              |                      | Received by: <u>[Signature]</u> Date/Time: <u>11/29/16 1630</u>        |                  |      |                 | Turn Around Time (Check)<br>Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/><br>24 Hours <input type="checkbox"/> Standard <input type="checkbox"/><br>48 Hours <input type="checkbox"/> |      |                      |                 | Notes:<br><u>on ice</u> |
| Relinquished by: <u>[Signature]</u> Date/Time: <u>11/29/16 1700</u> |              |              |                      | Received in Lab by: <u>[Signature]</u> Date/Time: <u>11/29/16 1630</u> |                  |      |                 | Sample Integrity:<br>Temperature Upon Receipt: <u>-1.5°C</u><br>Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                                                                            |      |                      |                 |                         |

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Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

## Summit Scientific / 1611230-2

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Client: TASMAN / PDC (INVOICING) Page 2 of 2  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CSP Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD  
Project Number: \_\_\_\_\_

| Sample Description                                                  | Date Sampled | Time Sampled | Number of Containers | Preservative                                                           |                  |      |                 |                                                                                                                                                                                                                        | Matrix |                     | Analyze For:    |                      |    |    | Special Instructions |
|---------------------------------------------------------------------|--------------|--------------|----------------------|------------------------------------------------------------------------|------------------|------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------|-----------------|----------------------|----|----|----------------------|
|                                                                     |              |              |                      | HCl                                                                    | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                                                                                                                                                            | Soil   | Air - Cauter Seal * | Other (Specify) | As                   | Pb | Cr |                      |
| SS 247A 40                                                          | 11/29/16     |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 248A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 249A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 250A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 251A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 252A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 253A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 254A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 255A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 256A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 257A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 258A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 259A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 260A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 261A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 262A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| SS 263A 40                                                          |              |              |                      |                                                                        |                  |      |                 |                                                                                                                                                                                                                        |        |                     |                 |                      |    |    |                      |
| Relinquished by: _____ Date/Time: _____                             |              |              |                      | Received by: _____ Date/Time: _____                                    |                  |      |                 | Turn Around Time (Check)<br>Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/><br>24 Hours <input type="checkbox"/> Standard <input type="checkbox"/><br>48 Hours <input type="checkbox"/> |        |                     |                 | Notes:<br><br>on ice |    |    |                      |
| Relinquished by: _____ Date/Time: _____                             |              |              |                      | Received by: _____ Date/Time: _____                                    |                  |      |                 | Sample Integrity:<br>Temperature Upon Receipt: <u>-1.5°C</u><br>Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                            |        |                     |                 |                      |    |    |                      |
| Relinquished by: <u>[Signature]</u> Date/Time: <u>11/29/16 1630</u> |              |              |                      | Received in Lab by: <u>[Signature]</u> Date/Time: <u>11/29/16 1630</u> |                  |      |                 | www.s2scientific.com                                                                                                                                                                                                   |        |                     |                 |                      |    |    |                      |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

#### Sample Receipt Checklist

S2 Work Order: Kell230

Client: Tasman / PDC

Client Project ID: Steinwald

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |                |      |  |  |  |
|-----------|----------------|------|--|--|--|
| Cooler ID |                |      |  |  |  |
| Temp (°C) | <del>1.5</del> | -1.5 |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes | No | N/A | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | ✓   |    |     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |     |    |     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | ✓   |    |     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | ✓   |    |     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |     |    | ✓   |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |     |    | ✓   |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | ✓   |    |     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | ✓   |    |     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | ✓   |    |     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | ✓   |    |     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |     |    | ✓   |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |     |    | ✓   |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |     |    | ✓   |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |     |    | ✓   |                   |
| Record the pH in Comments.                                                                                                                  |     |    | ✓   |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |     |    | ✓   |                   |
| Additional Comments (if any):                                                                                                               |     |    |     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

11/29/16 1700  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS237@45**  
**1611230-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 103 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 89.0 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS238@45**  
**1611230-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 93.1 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**SS239@40**  
**1611230-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 104 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 97.2 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS240@45**  
**1611230-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 95.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 91.0 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS241@45**  
**1611230-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 103 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 94.2 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS242@40**  
**1611230-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.016</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.040</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.020</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND           | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 94.0 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS243@40**  
**1611230-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 89.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.015</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.039</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.020</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND           | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 92.6 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.8 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 102 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**SS244@40**  
**1611230-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | 110    | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.10   | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | 0.56   | 0.0020          | "     | "        | "       | "        | 11/30/16 | "         |       |
| Toluene                     | 2.4    | 0.50            | "     | 100      | "       | "        | 11/29/16 | "         |       |
| Ethylbenzene                | 0.39   | 0.0050          | "     | 1        | "       | "        | "        | "         |       |
| Xylenes (total)             | 8.1    | 1.0             | "     | 100      | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 55     | 0.50            | "     | 1        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 91.5 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 96.4 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**SS245@40**  
**1611230-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | 380    | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 94.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.16   | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | 0.68   | 0.20            | "     | 100      | "       | "        | "        | "         |       |
| Toluene                     | 6.6    | 0.50            | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.70   | 0.0050          | "     | 1        | "       | "        | "        | "         |       |
| Xylenes (total)             | 20     | 1.0             | "     | 100      | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 410    | 50              | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 93.2 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 97.6 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 112 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**SS246@40**  
**1611230-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 86.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND            | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.0072</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.017</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND            | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 96.2 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS247@40**  
**1611230-11 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND            | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.0095</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.028</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.020</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 95.8 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**SS248@40**  
**1611230-12 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 91.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | 0.21   | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.54   | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.026  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.29   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 2.7    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 84.0 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.6 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**CS56**  
**1611230-13 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/29/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 94.9 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 100 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**CS57**  
**1611230-14 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.0 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/30/16 | EPA 8260B |       |
| Benzene                     | 0.016  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.053  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.0056 | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.086  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 0.99   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 98.0 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 98.6 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**CS58**  
**1611230-15 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/30/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 93.2 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**CS59**  
**1611230-16 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/30/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 95.7 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 100 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 101 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**CS60**  
**1611230-17 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/29/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 94.1 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/30/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 93.6 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.1 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**CS61**  
**1611230-18 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/30/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 96.4 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 99.8 %          | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**CS62**  
**1611230-19 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/30/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 94.2 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**CS63**  
**1611230-20 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/29/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611314 | 11/29/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/29/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 93.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/29/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1611313 | 11/29/16 | 11/30/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/29/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 98.8 %          | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 102 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1611314 - EPA 3550A**

**Blank (1611314-BLK1)**

Prepared & Analyzed: 11/29/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |      |        |  |  |  |
| Surrogate: o-Terphenyl | 11.2 |    | "     | 12.5 |  | 89.6 | 30-150 |  |  |  |

**LCS (1611314-BS1)**

Prepared & Analyzed: 11/29/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 480  | 50 | mg/kg | 499  |  | 96.2 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 13.2 |    | "     | 12.5 |  | 106  | 30-150 |  |  |  |

**Matrix Spike (1611314-MS1)**

Source: 1611230-01

Prepared & Analyzed: 11/29/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 548  | 50 | mg/kg | 499  | 10.7 | 108  | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 12.2 |    | "     | 12.5 |      | 97.3 | 30-150 |  |  |  |

**Matrix Spike Dup (1611314-MSD1)**

Source: 1611230-01

Prepared & Analyzed: 11/29/16

|                        |      |    |       |      |      |      |        |      |    |  |
|------------------------|------|----|-------|------|------|------|--------|------|----|--|
| C10-C28 (DRO)          | 560  | 50 | mg/kg | 499  | 10.7 | 110  | 50-148 | 2.11 | 20 |  |
| Surrogate: o-Terphenyl | 12.4 |    | "     | 12.5 |      | 99.1 | 30-150 |      |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
11/30/16 06:43

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611313 - EPA 5030 Soil MS**

**Blank (1611313-BLK1)**

Prepared: 11/29/16 Analyzed: 11/30/16

|                                  |        |        |       |        |  |     |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|-----|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |     |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |     |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |     |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |     |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0508 |        | "     | 0.0400 |  | 127 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0423 |        | "     | 0.0400 |  | 106 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0424 |        | "     | 0.0400 |  | 106 | 21-167 |  |  |  |

**LCS (1611313-BS1)**

Prepared: 11/29/16 Analyzed: 11/30/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.0795 | 0.0020 | "     | 0.100  |  | 79.5 | 58-130 |  |  |  |
| Toluene                          | 0.0880 | 0.0050 | "     | 0.100  |  | 88.0 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.110  | 0.0050 | "     | 0.0992 |  | 111  | 74-139 |  |  |  |
| m,p-Xylene                       | 0.197  | 0.010  | "     | 0.200  |  | 98.5 | 73-137 |  |  |  |
| o-Xylene                         | 0.104  | 0.0050 | "     | 0.0980 |  | 106  | 73-141 |  |  |  |
| Xylenes (total)                  | 0.300  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 2.89   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0485 |        | "     | 0.0400 |  | 121  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0406 |        | "     | 0.0400 |  | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0409 |        | "     | 0.0400 |  | 102  | 21-167 |  |  |  |

**Matrix Spike (1611313-MS1)**

Source: 1611230-01

Prepared: 11/29/16 Analyzed: 11/30/16

|                                  |        |        |       |        |    |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|----|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND |      | 10-158 |  |  |  |
| Benzene                          | 0.0806 | 0.0020 | "     | 0.100  | ND | 80.6 | 30-131 |  |  |  |
| Toluene                          | 0.0902 | 0.0050 | "     | 0.100  | ND | 90.2 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.108  | 0.0050 | "     | 0.0992 | ND | 108  | 22-153 |  |  |  |
| m,p-Xylene                       | 0.193  | 0.010  | "     | 0.200  | ND | 96.5 | 10-159 |  |  |  |
| o-Xylene                         | 0.102  | 0.0050 | "     | 0.0980 | ND | 104  | 31-151 |  |  |  |
| Xylenes (total)                  | 0.295  | 0.010  | "     |        | ND |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 2.85   | 0.50   | "     |        | ND |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0530 |        | "     | 0.0400 |    | 132  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0406 |        | "     | 0.0400 |    | 102  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0410 |        | "     | 0.0400 |    | 102  | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611313 - EPA 5030 Soil MS**

| Matrix Spike Dup (1611313-MSD1)  |        | Source: 1611230-01 |       |        | Prepared: 11/29/16 |      | Analyzed: 11/30/16 |       |  |    |
|----------------------------------|--------|--------------------|-------|--------|--------------------|------|--------------------|-------|--|----|
| Naphthalene                      | ND     | 0.010              | mg/kg |        | ND                 |      | 10-158             |       |  | 42 |
| Benzene                          | 0.0804 | 0.0020             | "     | 0.100  | ND                 | 80.4 | 30-131             | 0.224 |  | 34 |
| Toluene                          | 0.0901 | 0.0050             | "     | 0.100  | ND                 | 90.1 | 30-134             | 0.133 |  | 30 |
| Ethylbenzene                     | 0.109  | 0.0050             | "     | 0.0992 | ND                 | 110  | 22-153             | 1.41  |  | 24 |
| m,p-Xylene                       | 0.197  | 0.010              | "     | 0.200  | ND                 | 98.7 | 10-159             | 2.33  |  | 68 |
| o-Xylene                         | 0.101  | 0.0050             | "     | 0.0980 | ND                 | 103  | 31-151             | 1.18  |  | 38 |
| Xylenes (total)                  | 0.298  | 0.010              | "     |        | ND                 |      | 30-160             | 1.12  |  | 30 |
| Gasoline Range Hydrocarbons      | 2.87   | 0.50               | "     |        | ND                 |      | 30-160             | 0.734 |  | 30 |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0550 |                    | "     | 0.0400 |                    | 138  | 23-173             |       |  |    |
| Surrogate: Toluene-d8            | 0.0413 |                    | "     | 0.0400 |                    | 103  | 20-170             |       |  |    |
| Surrogate: 4-Bromofluorobenzene  | 0.0418 |                    | "     | 0.0400 |                    | 104  | 21-167             |       |  |    |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/30/16 06:43

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 01, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 11/30/16 17:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/01/16 06:18

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| SS249@40  | 1611245-01    | Soil   | 11/30/16 00:00 | 11/30/16 17:20 |
| SS250@40  | 1611245-02    | Soil   | 11/30/16 00:00 | 11/30/16 17:20 |

Summit Scientific

*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.*





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/01/16 06:18

### Sample Receipt Checklist

S2 Work Order: 1611245  
Client: Tasman Client Project ID: Steinwald / ?  
Shipped Via: PH Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |            |  |  |  |  |
|-----------|------------|--|--|--|--|
| Cooler ID |            |  |  |  |  |
| Temp (°C) | <u>2.1</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No                                  | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |                                     |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     | <input checked="" type="checkbox"/> |                                     |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |                                     |                                     |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |                                     |                                     |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):<br><u>Same day</u>                                                                                            |                                     |                                     |                                     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Justin Paden Signature or Initials of Custodian  
Custodian Printed Name  
11/30/16 Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/01/16 06:18

**SS249@40**  
**1611245-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/30/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611320 | 11/30/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/30/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 102 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/30/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.085  | 0.010           | mg/kg | 1        | 1611325 | 11/30/16 | 12/01/16 | EPA 8260B |       |
| Benzene                     | 0.80   | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 2.0    | 0.50            | "     | 100      | "       | "        | 11/30/16 | "         |       |
| Ethylbenzene                | 0.22   | 0.0050          | "     | 1        | "       | "        | 12/01/16 | "         |       |
| Xylenes (total)             | 4.2    | 1.0             | "     | 100      | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 36     | 0.50            | "     | 1        | "       | "        | "        | "         |       |

Date Sampled: **11/30/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 141 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 112 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/01/16 06:18

**SS250@40**  
**1611245-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/30/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1611320 | 11/30/16 | 11/30/16 | 8015M  |       |

Date Sampled: **11/30/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 101 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/30/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.031</b> | 0.010           | mg/kg | 1        | 1611325 | 11/30/16 | 12/01/16 | EPA 8260B |       |
| Benzene                     | <b>0.30</b>  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | <b>1.1</b>   | 0.50            | "     | 100      | "       | "        | 11/30/16 | "         |       |
| Ethylbenzene                | <b>0.11</b>  | 0.0050          | "     | 1        | "       | "        | 12/01/16 | "         |       |
| Xylenes (total)             | <b>1.5</b>   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>21</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **11/30/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 134 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/01/16 06:18

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1611320 - EPA 3550A**

**Blank (1611320-BLK1)**

Prepared & Analyzed: 11/30/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.8 " 12.5 102 30-150

**LCS (1611320-BS1)**

Prepared & Analyzed: 11/30/16

C10-C28 (DRO) 496 50 mg/kg 499 99.3 73-134

Surrogate: o-Terphenyl 13.0 " 12.5 104 30-150

**Matrix Spike (1611320-MS1)**

Source: 1611238-01

Prepared: 11/30/16 Analyzed: 12/01/16

C10-C28 (DRO) 526 50 mg/kg 499 7.84 104 50-148

Surrogate: o-Terphenyl 12.9 " 12.5 103 30-150

**Matrix Spike Dup (1611320-MSD1)**

Source: 1611238-01

Prepared: 11/30/16 Analyzed: 12/01/16

C10-C28 (DRO) 538 50 mg/kg 499 7.84 106 50-148 2.37 20

Surrogate: o-Terphenyl 13.1 " 12.5 105 30-150

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/01/16 06:18

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611325 - EPA 5030 Soil MS**

**Blank (1611325-BLK1)**

Prepared & Analyzed: 11/30/16

|                                  |        |        |       |        |  |     |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|-----|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |     |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |     |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |     |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |     |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0517 |        | "     | 0.0400 |  | 129 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0418 |        | "     | 0.0400 |  | 105 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0418 |        | "     | 0.0400 |  | 105 | 21-167 |  |  |  |

**LCS (1611325-BS1)**

Prepared & Analyzed: 11/30/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.0778 | 0.0020 | "     | 0.100  |  | 77.8 | 58-130 |  |  |  |
| Toluene                          | 0.0874 | 0.0050 | "     | 0.100  |  | 87.4 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.107  | 0.0050 | "     | 0.0992 |  | 108  | 74-139 |  |  |  |
| m,p-Xylene                       | 0.193  | 0.010  | "     | 0.200  |  | 96.6 | 73-137 |  |  |  |
| o-Xylene                         | 0.0994 | 0.0050 | "     | 0.0980 |  | 101  | 73-141 |  |  |  |
| Xylenes (total)                  | 0.292  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 2.83   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0492 |        | "     | 0.0400 |  | 123  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0401 |        | "     | 0.0400 |  | 100  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0394 |        | "     | 0.0400 |  | 98.6 | 21-167 |  |  |  |

**Matrix Spike (1611325-MS1)**

Source: 1611246-01

Prepared & Analyzed: 11/30/16

|                                  |        |        |       |        |    |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|----|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND |      | 10-158 |  |  |  |
| Benzene                          | 0.0788 | 0.0020 | "     | 0.100  | ND | 78.8 | 30-131 |  |  |  |
| Toluene                          | 0.0888 | 0.0050 | "     | 0.100  | ND | 88.8 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.109  | 0.0050 | "     | 0.0992 | ND | 110  | 22-153 |  |  |  |
| m,p-Xylene                       | 0.196  | 0.010  | "     | 0.200  | ND | 98.2 | 10-159 |  |  |  |
| o-Xylene                         | 0.102  | 0.0050 | "     | 0.0980 | ND | 104  | 31-151 |  |  |  |
| Xylenes (total)                  | 0.298  | 0.010  | "     |        | ND |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 2.81   | 0.50   | "     |        | ND |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0512 |        | "     | 0.0400 |    | 128  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0400 |        | "     | 0.0400 |    | 100  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0404 |        | "     | 0.0400 |    | 101  | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/01/16 06:18

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1611325 - EPA 5030 Soil MS**

| Matrix Spike Dup (1611325-MSD1)  |        | Source: 1611246-01 |       |        | Prepared & Analyzed: 11/30/16 |      |        |       |    |  |
|----------------------------------|--------|--------------------|-------|--------|-------------------------------|------|--------|-------|----|--|
| Naphthalene                      | ND     | 0.010              | mg/kg |        | ND                            |      | 10-158 |       | 42 |  |
| Benzene                          | 0.0789 | 0.0020             | "     | 0.100  | ND                            | 78.9 | 30-131 | 0.190 | 34 |  |
| Toluene                          | 0.0896 | 0.0050             | "     | 0.100  | ND                            | 89.6 | 30-134 | 0.908 | 30 |  |
| Ethylbenzene                     | 0.107  | 0.0050             | "     | 0.0992 | ND                            | 108  | 22-153 | 1.58  | 24 |  |
| m,p-Xylene                       | 0.193  | 0.010              | "     | 0.200  | ND                            | 96.9 | 10-159 | 1.36  | 68 |  |
| o-Xylene                         | 0.102  | 0.0050             | "     | 0.0980 | ND                            | 104  | 31-151 | 0.618 | 38 |  |
| Xylenes (total)                  | 0.296  | 0.010              | "     |        | ND                            |      | 30-160 | 0.678 | 30 |  |
| Gasoline Range Hydrocarbons      | 2.87   | 0.50               | "     |        | ND                            |      | 30-160 | 2.21  | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0530 |                    | "     | 0.0400 |                               | 132  | 23-173 |       |    |  |
| Surrogate: Toluene-d8            | 0.0407 |                    | "     | 0.0400 |                               | 102  | 20-170 |       |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0405 |                    | "     | 0.0400 |                               | 101  | 21-167 |       |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/01/16 06:18

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 05, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 12/02/16 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| SS251@40  | 1612013-01    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| SS252@40  | 1612013-02    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| SS253@40  | 1612013-03    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| SS254@40  | 1612013-04    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| SS255@45  | 1612013-05    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 64     | 1612013-06    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 65     | 1612013-07    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 66     | 1612013-08    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 67     | 1612013-09    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 68     | 1612013-10    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 69     | 1612013-11    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 70     | 1612013-12    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |
| CS 71     | 1612013-13    | Soil   | 12/02/16 00:00 | 12/02/16 17:10 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/05/16 07:59

## Summit Scientific 1612013.1

741 Corporate Circle Suite 1 ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Client: TASMAN / PDC (INVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: CSP

Page 1 of 2

Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD  
Project Number: \_\_\_\_\_

| Sample Description                             | Date Sampled | Time Sampled | Number of Containers | Preservative                                      |                  |      |                 | Matrix                                                                                                                                                                                                                 |      | Analyze For:            |                 |          |          | Special Instructions |
|------------------------------------------------|--------------|--------------|----------------------|---------------------------------------------------|------------------|------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------------------|-----------------|----------|----------|----------------------|
|                                                |              |              |                      | HCl                                               | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                                                                                                                                                            | Soil | Air - Canister Serial # | Other (Specify) | CEM 8260 | CEM 8015 |                      |
| 251 A 40                                       | 12/2/16      |              |                      |                                                   |                  | X    |                 |                                                                                                                                                                                                                        | X    |                         |                 |          |          |                      |
| 252 A 40                                       |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| 253 A 40                                       |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| 254 A 40                                       |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| 255 A 45                                       |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| CS 64                                          |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| CS 65                                          |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| CS 66                                          |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| CS 67                                          |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| CS 68                                          |              |              |                      |                                                   |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |
| Relinquished by: _____ Date/Time: _____        |              |              |                      | Received by: _____ Date/Time: _____               |                  |      |                 | Turn Around Time (Check)<br>Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/><br>24 Hours <input type="checkbox"/> Standard <input type="checkbox"/><br>48 Hours <input type="checkbox"/> |      |                         |                 | Notes:   |          |                      |
| Relinquished by: _____ Date/Time: _____        |              |              |                      | Received by: _____ Date/Time: _____               |                  |      |                 | Sample Integrity: 33°C<br>Temperature Upon Receipt: _____<br>Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>                                                                                          |      |                         |                 | on ice   |          |                      |
| Relinquished by: _____ Date/Time: 12/2/16 1630 |              |              |                      | Received in Lab by: _____ Date/Time: 12/2/16 1630 |                  |      |                 |                                                                                                                                                                                                                        |      |                         |                 |          |          |                      |

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Summit Scientific

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.





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/05/16 07:59

### Sample Receipt Checklist

S2 Work Order: 1612013

Client: Tasman / PDC

Client Project ID: Steinwald

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |            |  |  |  |  |
|-----------|------------|--|--|--|--|
| Cooler ID |            |  |  |  |  |
| Temp (°C) | <u>3.3</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No                                  | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |                                     |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |                                     |                                     |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |                                     |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |                                     | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |                                     |                                     |                   |

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

MD  
Signature or Initials of Custodian

12/2/16 1710  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**SS251@40**  
**1612013-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/02/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND            | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/02/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.0057</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.013</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND            | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 130 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**SS252@40**  
**1612013-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/02/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.030</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.070</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.021</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND           | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 136 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**SS253@40**  
**1612013-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/02/16 | EPA 8260B |       |
| Benzene                     | 0.037  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.11   | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.0055 | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.067  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 0.70   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 135 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 108 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/05/16 07:59

**SS254@40**  
**1612013-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND            | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/02/16 | EPA 8260B |       |
| <b>Benzene</b>              | <b>0.0037</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.015</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.030</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 142 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 107 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**SS255@45**  
**1612013-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 103 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| Benzene                     | 0.070  | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.21   | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.011  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.14   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 1.5    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 132 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 102 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**CS 64**  
**1612013-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 95.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| <b>Benzene</b>                     | <b>0.0095</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.038</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.066</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.4</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 127 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 109 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**CS 65**  
**1612013-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.032  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | 0.0072 | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.12   | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 1.8    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 132 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**CS 66**  
**1612013-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.1 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.016</b> | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | <b>0.033</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | <b>0.016</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.29</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>5.8</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 127 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 112 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**CS 67**  
**1612013-09 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.6 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.018</b>  | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| Benzene                     | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | <b>0.0095</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.039</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>2.2</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 130 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**CS 68**  
**1612013-10 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.7 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.022  | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.015  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.037  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 1.6    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 133 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 110 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**CS 69**  
**1612013-11 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | <b>0.013</b> | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | <b>0.017</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | <b>0.072</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | <b>1.3</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 126 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**CS 70**  
**1612013-12 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| <b>Benzene</b>                     | <b>0.0031</b> | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.012</b>  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.016</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.50</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 125 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 102 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/05/16 07:59

**CS 71**  
**1612013-13 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/02/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612028 | 12/02/16 | 12/03/16 | 8015M  |       |

Date Sampled: **12/02/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.4 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/02/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.016  | 0.010           | mg/kg | 1        | 1612027 | 12/02/16 | 12/03/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.0081 | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.036  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 2.0    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/02/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 133 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 108 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1612028 - EPA 3550A**

**Blank (1612028-BLK1)**

Prepared & Analyzed: 12/02/16

|                        |      |    |       |      |  |     |        |  |  |  |
|------------------------|------|----|-------|------|--|-----|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |     |        |  |  |  |
| Surrogate: o-Terphenyl | 12.6 |    | "     | 12.5 |  | 101 | 30-150 |  |  |  |

**LCS (1612028-BS1)**

Prepared & Analyzed: 12/02/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 439  | 50 | mg/kg | 499  |  | 88.0 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 13.0 |    | "     | 12.5 |  | 104  | 30-150 |  |  |  |

**Matrix Spike (1612028-MS1)**

Source: 1612011-01

Prepared & Analyzed: 12/02/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 461  | 50 | mg/kg | 499  | 15.0 | 89.4 | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 12.9 |    | "     | 12.5 |      | 103  | 30-150 |  |  |  |

**Matrix Spike Dup (1612028-MSD1)**

Source: 1612011-01

Prepared & Analyzed: 12/02/16

|                        |      |    |       |      |      |      |        |       |    |  |
|------------------------|------|----|-------|------|------|------|--------|-------|----|--|
| C10-C28 (DRO)          | 461  | 50 | mg/kg | 499  | 15.0 | 89.5 | 50-148 | 0.120 | 20 |  |
| Surrogate: o-Terphenyl | 12.9 |    | "     | 12.5 |      | 103  | 30-150 |       |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/05/16 07:59

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612027 - EPA 5030 Soil MS**

**Blank (1612027-BLK1)**

Prepared & Analyzed: 12/02/16

|                                  |        |        |       |        |     |        |  |  |  |  |
|----------------------------------|--------|--------|-------|--------|-----|--------|--|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |     |        |  |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |     |        |  |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |     |        |  |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |     |        |  |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |     |        |  |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |     |        |  |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0480 |        | "     | 0.0400 | 120 | 23-173 |  |  |  |  |
| Surrogate: Toluene-d8            | 0.0416 |        | "     | 0.0400 | 104 | 20-170 |  |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0411 |        | "     | 0.0400 | 103 | 21-167 |  |  |  |  |

**LCS (1612027-BS1)**

Prepared & Analyzed: 12/02/16

|                                  |        |        |       |        |      |        |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|------|--------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |      |        | 66-138 |  |  |  |
| Benzene                          | 0.0772 | 0.0020 | "     | 0.100  | 77.2 | 58-130 |        |  |  |  |
| Toluene                          | 0.0870 | 0.0050 | "     | 0.100  | 87.0 | 61-134 |        |  |  |  |
| Ethylbenzene                     | 0.109  | 0.0050 | "     | 0.0992 | 110  | 74-139 |        |  |  |  |
| m,p-Xylene                       | 0.196  | 0.010  | "     | 0.200  | 98.4 | 73-137 |        |  |  |  |
| o-Xylene                         | 0.101  | 0.0050 | "     | 0.0980 | 103  | 73-141 |        |  |  |  |
| Xylenes (total)                  | 0.297  | 0.010  | "     |        |      | 0-200  |        |  |  |  |
| Gasoline Range Hydrocarbons      | 2.84   | 0.50   | "     |        |      | 30-150 |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0470 |        | "     | 0.0400 | 118  | 23-173 |        |  |  |  |
| Surrogate: Toluene-d8            | 0.0406 |        | "     | 0.0400 | 102  | 20-170 |        |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0411 |        | "     | 0.0400 | 103  | 21-167 |        |  |  |  |

**Matrix Spike (1612027-MS1)**

Source: 1612011-01

Prepared & Analyzed: 12/02/16

|                                  |         |        |       |        |         |        |        |  |  |  |
|----------------------------------|---------|--------|-------|--------|---------|--------|--------|--|--|--|
| Naphthalene                      | 0.00471 | 0.010  | mg/kg |        | 0.00330 |        | 10-158 |  |  |  |
| Benzene                          | 0.106   | 0.0020 | "     | 0.100  | 0.00450 | 101    | 30-131 |  |  |  |
| Toluene                          | 0.0874  | 0.0050 | "     | 0.100  | ND      | 87.4   | 30-134 |  |  |  |
| Ethylbenzene                     | 0.111   | 0.0050 | "     | 0.0992 | ND      | 112    | 22-153 |  |  |  |
| m,p-Xylene                       | 0.205   | 0.010  | "     | 0.200  | 0.00603 | 99.5   | 10-159 |  |  |  |
| o-Xylene                         | 0.102   | 0.0050 | "     | 0.0980 | ND      | 104    | 31-151 |  |  |  |
| Xylenes (total)                  | 0.306   | 0.010  | "     |        | 0.00603 |        | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 4.01    | 0.50   | "     |        | 0.795   |        | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0517  |        | "     | 0.0400 | 129     | 23-173 |        |  |  |  |
| Surrogate: Toluene-d8            | 0.0407  |        | "     | 0.0400 | 102     | 20-170 |        |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0403  |        | "     | 0.0400 | 101     | 21-167 |        |  |  |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612027 - EPA 5030 Soil MS**

| Matrix Spike Dup (1612027-MSD1)  | Source: 1612011-01 |        |       | Prepared & Analyzed: 12/02/16 |         |      |        |      |    |  |
|----------------------------------|--------------------|--------|-------|-------------------------------|---------|------|--------|------|----|--|
| Naphthalene                      | 0.00453            | 0.010  | mg/kg |                               | 0.00330 |      | 10-158 | 3.90 | 42 |  |
| Benzene                          | 0.0905             | 0.0020 | "     | 0.100                         | 0.00450 | 86.0 | 30-131 | 15.6 | 34 |  |
| Toluene                          | 0.0895             | 0.0050 | "     | 0.100                         | ND      | 89.5 | 30-134 | 2.27 | 30 |  |
| Ethylbenzene                     | 0.114              | 0.0050 | "     | 0.0992                        | ND      | 115  | 22-153 | 2.24 | 24 |  |
| m,p-Xylene                       | 0.211              | 0.010  | "     | 0.200                         | 0.00603 | 103  | 10-159 | 3.19 | 68 |  |
| o-Xylene                         | 0.106              | 0.0050 | "     | 0.0980                        | ND      | 108  | 31-151 | 3.77 | 38 |  |
| Xylenes (total)                  | 0.317              | 0.010  | "     |                               | 0.00603 |      | 30-160 | 3.38 | 30 |  |
| Gasoline Range Hydrocarbons      | 3.59               | 0.50   | "     |                               | 0.795   |      | 30-160 | 11.2 | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0492             |        | "     | 0.0400                        |         | 123  | 23-173 |      |    |  |
| Surrogate: Toluene-d8            | 0.0406             |        | "     | 0.0400                        |         | 101  | 20-170 |      |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0411             |        | "     | 0.0400                        |         | 103  | 21-167 |      |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/05/16 07:59

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 07, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 12/06/16 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS 72     | 1612054-01    | Soil   | 12/06/16 00:00 | 12/06/16 17:00 |
| CS 73     | 1612054-02    | Soil   | 12/06/16 00:00 | 12/06/16 17:00 |
| CS 74     | 1612054-03    | Soil   | 12/06/16 00:00 | 12/06/16 17:00 |
| CS 75     | 1612054-04    | Soil   | 12/06/16 00:00 | 12/06/16 17:00 |
| CS 76     | 1612054-05    | Soil   | 12/06/16 00:00 | 12/06/16 17:00 |
| CS 77     | 1612054-06    | Soil   | 12/06/16 00:00 | 12/06/16 17:00 |

Summit Scientific

*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.*





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/07/16 06:44

### Sample Receipt Checklist

S2 Work Order: 1612054

Client: Tasman/PDC

Client Project ID: Steinwald

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |            |  |  |  |  |
|-----------|------------|--|--|--|--|
| Cooler ID |            |  |  |  |  |
| Temp (°C) | <u>5.7</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | <input checked="" type="checkbox"/> |    |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |    |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |    |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |    |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     |    | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |    |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |    |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |    |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |    |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |    | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |    | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |    | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |    | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |    |                                     |                   |
|                                                                                                                                             |                                     |    |                                     |                   |
| <sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.                                   |                                     |    |                                     |                   |

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

12/6/16 1700  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/07/16 06:44

**CS 72**  
**1612054-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/06/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612059 | 12/06/16 | 12/06/16 | 8015M  |       |

Date Sampled: **12/06/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.9 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/06/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | 0.011  | 0.010           | mg/kg | 1        | 1612058 | 12/06/16 | 12/06/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | 0.010  | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | 0.034  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | 2.8    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/06/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 136 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 109 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**CS 73**  
**1612054-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/06/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612059 | 12/06/16 | 12/06/16 | 8015M  |       |

Date Sampled: **12/06/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 97.2 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/06/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1612058 | 12/06/16 | 12/06/16 | EPA 8260B |       |
| Benzene                            | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.0094</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.015</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.0</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/06/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 130 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 108 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**CS 74**  
**1612054-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/06/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612059 | 12/06/16 | 12/06/16 | 8015M  |       |

Date Sampled: **12/06/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 98.1 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/06/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1612058 | 12/06/16 | 12/06/16 | EPA 8260B |       |
| Benzene                            | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.0061</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.018</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>1.5</b>    | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/06/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 128 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 108 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**CS 75**  
**1612054-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/06/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612059 | 12/06/16 | 12/06/16 | 8015M  |       |

Date Sampled: **12/06/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 95.1 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/06/16 00:00**

| Analyte                            | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND            | 0.010           | mg/kg | 1        | 1612058 | 12/06/16 | 12/06/16 | EPA 8260B |       |
| Benzene                            | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.0079</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.030</b>  | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.85</b>   | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/06/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 140 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**CS 76**  
**1612054-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/06/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612059 | 12/06/16 | 12/06/16 | 8015M  |       |

Date Sampled: **12/06/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 99.5 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/06/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1612058 | 12/06/16 | 12/06/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.013</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND           | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/06/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 133 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 107 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**CS 77**  
**1612054-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/06/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612059 | 12/06/16 | 12/06/16 | 8015M  |       |

Date Sampled: **12/06/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 96.3 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/06/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1612058 | 12/06/16 | 12/06/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.011</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.022</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.56</b>  | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/06/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 137 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 111 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1612059 - EPA 3550A**

**Blank (1612059-BLK1)**

Prepared & Analyzed: 12/06/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |      |        |  |  |  |
| Surrogate: o-Terphenyl | 12.2 |    | "     | 12.5 |  | 97.3 | 30-150 |  |  |  |

**LCS (1612059-BS1)**

Prepared & Analyzed: 12/06/16

|                        |      |    |       |      |  |      |        |  |  |  |
|------------------------|------|----|-------|------|--|------|--------|--|--|--|
| C10-C28 (DRO)          | 429  | 50 | mg/kg | 499  |  | 85.9 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 12.5 |    | "     | 12.5 |  | 100  | 30-150 |  |  |  |

**Matrix Spike (1612059-MS1)**

**Source: 1612055-02**

Prepared & Analyzed: 12/06/16

|                        |      |    |       |      |     |      |        |  |  |  |
|------------------------|------|----|-------|------|-----|------|--------|--|--|--|
| C10-C28 (DRO)          | 666  | 50 | mg/kg | 499  | 138 | 106  | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 11.1 |    | "     | 12.5 |     | 88.9 | 30-150 |  |  |  |

**Matrix Spike Dup (1612059-MSD1)**

**Source: 1612055-02**

Prepared & Analyzed: 12/06/16

|                        |      |    |       |      |     |     |        |      |    |       |
|------------------------|------|----|-------|------|-----|-----|--------|------|----|-------|
| C10-C28 (DRO)          | 832  | 50 | mg/kg | 499  | 138 | 139 | 50-148 | 22.2 | 20 | QR-02 |
| Surrogate: o-Terphenyl | 13.6 |    | "     | 12.5 |     | 109 | 30-150 |      |    |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612058 - EPA 5030 Soil MS**

**Blank (1612058-BLK1)**

Prepared & Analyzed: 12/06/16

|                                  |        |        |       |        |  |     |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|-----|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |     |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |     |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |     |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |     |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |     |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0483 |        | "     | 0.0400 |  | 121 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0423 |        | "     | 0.0400 |  | 106 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0402 |        | "     | 0.0400 |  | 101 | 21-167 |  |  |  |

**LCS (1612058-BS1)**

Prepared & Analyzed: 12/06/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.0761 | 0.0020 | "     | 0.100  |  | 76.1 | 58-130 |  |  |  |
| Toluene                          | 0.0866 | 0.0050 | "     | 0.100  |  | 86.6 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.107  | 0.0050 | "     | 0.0992 |  | 108  | 74-139 |  |  |  |
| m,p-Xylene                       | 0.193  | 0.010  | "     | 0.200  |  | 96.7 | 73-137 |  |  |  |
| o-Xylene                         | 0.0990 | 0.0050 | "     | 0.0980 |  | 101  | 73-141 |  |  |  |
| Xylenes (total)                  | 0.292  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 2.79   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0488 |        | "     | 0.0400 |  | 122  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0405 |        | "     | 0.0400 |  | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0409 |        | "     | 0.0400 |  | 102  | 21-167 |  |  |  |

**Matrix Spike (1612058-MS1)**

Source: 1612054-01

Prepared & Analyzed: 12/06/16

|                                  |        |        |       |        |         |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|---------|------|--------|--|--|--|
| Naphthalene                      | 0.0865 | 0.010  | mg/kg |        | 0.0114  |      | 10-158 |  |  |  |
| Benzene                          | 0.0795 | 0.0020 | "     | 0.100  | ND      | 79.5 | 30-131 |  |  |  |
| Toluene                          | 0.0974 | 0.0050 | "     | 0.100  | 0.0101  | 87.2 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.118  | 0.0050 | "     | 0.0992 | ND      | 119  | 22-153 |  |  |  |
| m,p-Xylene                       | 0.299  | 0.010  | "     | 0.200  | 0.0266  | 137  | 10-159 |  |  |  |
| o-Xylene                         | 0.136  | 0.0050 | "     | 0.0980 | 0.00723 | 131  | 31-151 |  |  |  |
| Xylenes (total)                  | 0.435  | 0.010  | "     |        | 0.0339  |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 6.55   | 0.50   | "     |        | 2.85    |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0499 |        | "     | 0.0400 |         | 125  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0396 |        | "     | 0.0400 |         | 99.1 | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0411 |        | "     | 0.0400 |         | 103  | 21-167 |  |  |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612058 - EPA 5030 Soil MS**

| Matrix Spike Dup (1612058-MSD1)  |        | Source: 1612054-01 |       |        | Prepared & Analyzed: 12/06/16 |      |        |        |    |  |
|----------------------------------|--------|--------------------|-------|--------|-------------------------------|------|--------|--------|----|--|
| Naphthalene                      | 0.101  | 0.010              | mg/kg |        | 0.0114                        |      | 10-158 | 15.3   | 42 |  |
| Benzene                          | 0.0784 | 0.0020             | "     | 0.100  | ND                            | 78.4 | 30-131 | 1.48   | 34 |  |
| Toluene                          | 0.0978 | 0.0050             | "     | 0.100  | 0.0101                        | 87.6 | 30-134 | 0.400  | 30 |  |
| Ethylbenzene                     | 0.118  | 0.0050             | "     | 0.0992 | ND                            | 119  | 22-153 | 0.0507 | 24 |  |
| m,p-Xylene                       | 0.298  | 0.010              | "     | 0.200  | 0.0266                        | 136  | 10-159 | 0.301  | 68 |  |
| o-Xylene                         | 0.139  | 0.0050             | "     | 0.0980 | 0.00723                       | 135  | 31-151 | 2.49   | 38 |  |
| Xylenes (total)                  | 0.438  | 0.010              | "     |        | 0.0339                        |      | 30-160 | 0.577  | 30 |  |
| Gasoline Range Hydrocarbons      | 8.41   | 0.50               | "     |        | 2.85                          |      | 30-160 | 24.9   | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0506 |                    | "     | 0.0400 |                               | 127  | 23-173 |        |    |  |
| Surrogate: Toluene-d8            | 0.0405 |                    | "     | 0.0400 |                               | 101  | 20-170 |        |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0425 |                    | "     | 0.0400 |                               | 106  | 21-167 |        |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/07/16 06:44

### Notes and Definitions

QR-02     The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

DET        Analyte DETECTED

ND        Analyte NOT DETECTED at or above the reporting limit

NR        Not Reported

dry        Sample results reported on a dry weight basis

RPD        Relative Percent Difference

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 09, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 12/08/16 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS 78     | 1612066-01    | Soil   | 12/08/16 00:00 | 12/08/16 17:00 |
| CS 79     | 1612066-02    | Soil   | 12/08/16 00:00 | 12/08/16 17:00 |
| CS 80     | 1612066-03    | Soil   | 12/08/16 00:00 | 12/08/16 17:00 |
| CS 81     | 1612066-04    | Soil   | 12/08/16 00:00 | 12/08/16 17:00 |
| CS 82     | 1612066-05    | Soil   | 12/08/16 00:00 | 12/08/16 17:00 |
| CS 83     | 1612066-06    | Soil   | 12/08/16 00:00 | 12/08/16 17:00 |

Summit Scientific

*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.*





PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/09/16 06:43

### Sample Receipt Checklist

S2 Work Order: 16120866

Client: Tasman/PDC

Client Project ID: Steinwald

Shipped Via: P/U

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |     |  |  |  |  |
|-----------|-----|--|--|--|--|
| Cooler ID |     |  |  |  |  |
| Temp (°C) | 0.8 |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes | No | N/A | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | ✓   |    |     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |     |    |     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | ✓   |    |     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | ✓   |    |     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |     |    | ✓   |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |     |    | ✓   |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | ✓   |    |     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | ✓   |    |     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | ✓   |    |     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | ✓   |    |     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |     |    | ✓   |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |     |    | ✓   |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |     |    | ✓   |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |     |    | ✓   |                   |
| Record the pH in Comments.                                                                                                                  |     |    | ✓   |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |     |    | ✓   |                   |
| Additional Comments (if any):                                                                                                               |     |    |     |                   |
| <sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.                                   |     |    |     |                   |

Nakita  
Custodian Printed Name

MS  
Signature or Initials of Custodian

12/8/16 1200  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

**CS 78**  
**1612066-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612091 | 12/08/16 | 12/08/16 | 8015M  |       |

Date Sampled: **12/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 106 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612090 | 12/08/16 | 12/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 130 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

**CS 79**  
**1612066-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612091 | 12/08/16 | 12/08/16 | 8015M  |       |

Date Sampled: **12/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 106 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612090 | 12/08/16 | 12/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 127 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

**CS 80**  
**1612066-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612091 | 12/08/16 | 12/08/16 | 8015M  |       |

Date Sampled: **12/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 105 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/08/16 00:00**

| Analyte                     | Result        | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|---------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND            | 0.010           | mg/kg | 1        | 1612090 | 12/08/16 | 12/08/16 | EPA 8260B |       |
| Benzene                     | ND            | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>              | <b>0.0050</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND            | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND            | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND            | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 127 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

**CS 81**  
**1612066-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612091 | 12/08/16 | 12/08/16 | 8015M  |       |

Date Sampled: **12/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 103 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612090 | 12/08/16 | 12/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 124 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 102 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

**CS 82**  
**1612066-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612091 | 12/08/16 | 12/08/16 | 8015M  |       |

Date Sampled: **12/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 104 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612090 | 12/08/16 | 12/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 123 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/09/16 06:43

**CS 83**  
**1612066-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/08/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612091 | 12/08/16 | 12/08/16 | 8015M  |       |

Date Sampled: **12/08/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 102 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/08/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612090 | 12/08/16 | 12/08/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/08/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 133 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 105 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1612091 - EPA 3550A**

**Blank (1612091-BLK1)**

Prepared & Analyzed: 12/08/16

|                        |      |    |       |      |  |     |        |  |  |  |
|------------------------|------|----|-------|------|--|-----|--------|--|--|--|
| C10-C28 (DRO)          | ND   | 50 | mg/kg |      |  |     |        |  |  |  |
| Surrogate: o-Terphenyl | 13.1 |    | "     | 12.5 |  | 105 | 30-150 |  |  |  |

**LCS (1612091-BS1)**

Prepared & Analyzed: 12/08/16

|                        |      |    |       |      |  |     |        |  |  |  |
|------------------------|------|----|-------|------|--|-----|--------|--|--|--|
| C10-C28 (DRO)          | 511  | 50 | mg/kg | 499  |  | 102 | 73-134 |  |  |  |
| Surrogate: o-Terphenyl | 13.6 |    | "     | 12.5 |  | 109 | 30-150 |  |  |  |

**Matrix Spike (1612091-MS1)**

Source: 1612066-01

Prepared & Analyzed: 12/08/16

|                        |      |    |       |      |      |      |        |  |  |  |
|------------------------|------|----|-------|------|------|------|--------|--|--|--|
| C10-C28 (DRO)          | 461  | 50 | mg/kg | 499  | 24.7 | 87.4 | 50-148 |  |  |  |
| Surrogate: o-Terphenyl | 13.5 |    | "     | 12.5 |      | 108  | 30-150 |  |  |  |

**Matrix Spike Dup (1612091-MSD1)**

Source: 1612066-01

Prepared & Analyzed: 12/08/16

|                        |      |    |       |      |      |      |        |       |    |  |
|------------------------|------|----|-------|------|------|------|--------|-------|----|--|
| C10-C28 (DRO)          | 458  | 50 | mg/kg | 499  | 24.7 | 86.8 | 50-148 | 0.680 | 20 |  |
| Surrogate: o-Terphenyl | 13.5 |    | "     | 12.5 |      | 108  | 30-150 |       |    |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/09/16 06:43

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612090 - EPA 5030 Soil MS**

**Blank (1612090-BLK1)**

Prepared & Analyzed: 12/08/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |      |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0471 |        | "     | 0.0400 |  | 118  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0408 |        | "     | 0.0400 |  | 102  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0398 |        | "     | 0.0400 |  | 99.5 | 21-167 |  |  |  |

**LCS (1612090-BS1)**

Prepared & Analyzed: 12/08/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.0863 | 0.0020 | "     | 0.100  |  | 86.3 | 58-130 |  |  |  |
| Toluene                          | 0.0962 | 0.0050 | "     | 0.100  |  | 96.2 | 61-134 |  |  |  |
| Ethylbenzene                     | 0.121  | 0.0050 | "     | 0.0992 |  | 122  | 74-139 |  |  |  |
| m,p-Xylene                       | 0.215  | 0.010  | "     | 0.200  |  | 108  | 73-137 |  |  |  |
| o-Xylene                         | 0.112  | 0.0050 | "     | 0.0980 |  | 114  | 73-141 |  |  |  |
| Xylenes (total)                  | 0.327  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 3.06   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0485 |        | "     | 0.0400 |  | 121  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0400 |        | "     | 0.0400 |  | 100  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0395 |        | "     | 0.0400 |  | 98.7 | 21-167 |  |  |  |

**Matrix Spike (1612090-MS1)**

Source: 1612066-01

Prepared & Analyzed: 12/08/16

|                                  |        |        |       |        |         |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|---------|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        | ND      |      | 10-158 |  |  |  |
| Benzene                          | 0.0840 | 0.0020 | "     | 0.100  | ND      | 84.0 | 30-131 |  |  |  |
| Toluene                          | 0.0953 | 0.0050 | "     | 0.100  | ND      | 95.3 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.119  | 0.0050 | "     | 0.0992 | ND      | 120  | 22-153 |  |  |  |
| m,p-Xylene                       | 0.213  | 0.010  | "     | 0.200  | 0.00354 | 105  | 10-159 |  |  |  |
| o-Xylene                         | 0.112  | 0.0050 | "     | 0.0980 | ND      | 114  | 31-151 |  |  |  |
| Xylenes (total)                  | 0.325  | 0.010  | "     |        | ND      |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 3.30   | 0.50   | "     |        | 0.230   |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0512 |        | "     | 0.0400 |         | 128  | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0400 |        | "     | 0.0400 |         | 100  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0406 |        | "     | 0.0400 |         | 102  | 21-167 |  |  |  |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612090 - EPA 5030 Soil MS**

| Matrix Spike Dup (1612090-MSD1)  |        | Source: 1612066-01 |       |        | Prepared & Analyzed: 12/08/16 |      |        |       |    |  |
|----------------------------------|--------|--------------------|-------|--------|-------------------------------|------|--------|-------|----|--|
| Naphthalene                      | ND     | 0.010              | mg/kg |        | ND                            |      | 10-158 |       | 42 |  |
| Benzene                          | 0.0865 | 0.0020             | "     | 0.100  | ND                            | 86.5 | 30-131 | 2.85  | 34 |  |
| Toluene                          | 0.0977 | 0.0050             | "     | 0.100  | ND                            | 97.7 | 30-134 | 2.42  | 30 |  |
| Ethylbenzene                     | 0.120  | 0.0050             | "     | 0.0992 | ND                            | 121  | 22-153 | 0.777 | 24 |  |
| m,p-Xylene                       | 0.216  | 0.010              | "     | 0.200  | 0.00354                       | 107  | 10-159 | 1.58  | 68 |  |
| o-Xylene                         | 0.112  | 0.0050             | "     | 0.0980 | ND                            | 114  | 31-151 | 0.402 | 38 |  |
| Xylenes (total)                  | 0.328  | 0.010              | "     |        | ND                            |      | 30-160 | 0.900 | 30 |  |
| Gasoline Range Hydrocarbons      | 3.28   | 0.50               | "     |        | 0.230                         |      | 30-160 | 0.455 | 30 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0515 |                    | "     | 0.0400 |                               | 129  | 23-173 |       |    |  |
| Surrogate: Toluene-d8            | 0.0407 |                    | "     | 0.0400 |                               | 102  | 20-170 |       |    |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0412 |                    | "     | 0.0400 |                               | 103  | 21-167 |       |    |  |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/09/16 06:43

### Notes and Definitions

|     |                                                      |
|-----|------------------------------------------------------|
| DET | Analyte DETECTED                                     |
| ND  | Analyte NOT DETECTED at or above the reporting limit |
| NR  | Not Reported                                         |
| dry | Sample results reported on a dry weight basis        |
| RPD | Relative Percent Difference                          |

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 11, 2016

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Steinwald #1

Enclosed are the results of analyses for samples received by Summit Scientific on 12/09/16 15:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/16 12:29

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| CS84      | 1612068-01    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |
| CS85      | 1612068-02    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |
| CS86      | 1612068-03    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |
| CS87      | 1612068-04    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |
| CS88      | 1612068-05    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |
| CS89      | 1612068-06    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |
| CS90      | 1612068-07    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |
| CS91      | 1612068-08    | Soil   | 12/09/16 00:00 | 12/09/16 15:15 |

Summit Scientific

*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.*



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

# Summit Scientific 1612068

741 Corporate Circle Suite I • Golden, Colorado 80401  
303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: TASMAN / PDC (EINVOICING)  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: OSP

Project Manager: M. LONGHURST  
E-Mail: MARK.LONGHURST@PDC.COM  
Project Name: STEINWALD  
Project Number: \_\_\_\_\_

| Sample Description                                                 | Date Sampled | Time Sampled | Number of Containers | Preservative                                                          |                  |      |                 | Matrix                                                                         |      |                         | Analyze For:    |                                                                             |   |   |   |        |   |   |   |   |   |   | Special Instructions |   |  |
|--------------------------------------------------------------------|--------------|--------------|----------------------|-----------------------------------------------------------------------|------------------|------|-----------------|--------------------------------------------------------------------------------|------|-------------------------|-----------------|-----------------------------------------------------------------------------|---|---|---|--------|---|---|---|---|---|---|----------------------|---|--|
|                                                                    |              |              |                      | HCl                                                                   | HNO <sub>3</sub> | None | Other (Specify) | Groundwater                                                                    | Soil | Air - Canister Serial # | Other (Specify) |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| CS 84                                                              | 12/9/16      |              |                      |                                                                       |                  | X    |                 |                                                                                | X    |                         |                 | X                                                                           | X | X | X | X      | X | X | X | X | X | X | X                    | X |  |
| CS 85                                                              |              |              |                      |                                                                       |                  |      |                 |                                                                                |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| CS 86                                                              |              |              |                      |                                                                       |                  |      |                 |                                                                                |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| CS 87                                                              |              |              |                      |                                                                       |                  |      |                 |                                                                                |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| CS 88                                                              |              |              |                      |                                                                       |                  |      |                 |                                                                                |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| CS 89                                                              |              |              |                      |                                                                       |                  |      |                 |                                                                                |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| CS 90                                                              |              |              |                      |                                                                       |                  |      |                 |                                                                                |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| CS 91                                                              |              |              |                      |                                                                       |                  |      |                 |                                                                                |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| Relinquished by: _____ Date/Time: _____                            |              |              |                      | Received by: <u>[Signature]</u> Date/Time: <u>12-9-16 15:25</u>       |                  |      |                 | Turn Around Time (Check)                                                       |      |                         |                 | Notes:                                                                      |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| Relinquished by: _____ Date/Time: _____                            |              |              |                      | Received by: _____ Date/Time: _____                                   |                  |      |                 | Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> |      |                         |                 |                                                                             |   |   |   |        |   |   |   |   |   |   |                      |   |  |
| Relinquished by: <u>[Signature]</u> Date/Time: <u>12/9/16 1500</u> |              |              |                      | Received in Lab by: <u>[Signature]</u> Date/Time: <u>12/9/16 1500</u> |                  |      |                 | Sample Integrity: Temperature Upon Receipt: <u>5.0°C</u>                       |      |                         |                 | Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |   |   |   | ON ICE |   |   |   |   |   |   |                      |   |  |

www.s2scientific.com

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

#### Sample Receipt Checklist

S2 Work Order: 11612068

Client: Tasman/PDC

Client Project ID: Steinwald

Shipped Via: PIU

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

Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

|           |            |  |  |  |  |
|-----------|------------|--|--|--|--|
| Cooler ID |            |  |  |  |  |
| Temp (°C) | <u>5.6</u> |  |  |  |  |

Thermometer ID: 61857155-K

|                                                                                                                                             | Yes                                 | No | N/A                                 | Comments (if any) |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----|-------------------------------------|-------------------|
| If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?                                                    | <input checked="" type="checkbox"/> |    |                                     |                   |
| NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun. |                                     |    |                                     |                   |
| Were all samples received intact <sup>(1)</sup> ?                                                                                           | <input checked="" type="checkbox"/> |    |                                     |                   |
| Was adequate sample volume provided <sup>(1)</sup> ?                                                                                        | <input checked="" type="checkbox"/> |    |                                     |                   |
| If custody seals are present, are they intact <sup>(1)</sup> ?                                                                              |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are short holding time analytes or samples with HTs due within 48 hours present?                                                            |                                     |    | <input checked="" type="checkbox"/> |                   |
| Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?                                                         | <input checked="" type="checkbox"/> |    |                                     |                   |
| Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?                                                     | <input checked="" type="checkbox"/> |    |                                     |                   |
| Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?                                                                       | <input checked="" type="checkbox"/> |    |                                     |                   |
| Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?                                                   | <input checked="" type="checkbox"/> |    |                                     |                   |
| For volatiles in water – is there headspace present? If yes, contact client and note in narrative.                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?                                                        |                                     |    | <input checked="" type="checkbox"/> |                   |
| Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect                                                          |                                     |    | <input checked="" type="checkbox"/> |                   |
| If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?                                                                    |                                     |    | <input checked="" type="checkbox"/> |                   |
| Record the pH in Comments.                                                                                                                  |                                     |    | <input checked="" type="checkbox"/> |                   |
| If dissolved metals are requested, were samples field filtered?                                                                             |                                     |    | <input checked="" type="checkbox"/> |                   |
| Additional Comments (if any):                                                                                                               |                                     |    |                                     |                   |
| <sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.                                   |                                     |    |                                     |                   |

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

12/9/16 1525  
Date/Time



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**CS84**  
**1612068-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/09/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 103 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 114 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 101 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 108 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**CS85**  
**1612068-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/09/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 103 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 117 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**CS86**  
**1612068-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/09/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 102 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 114 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 108 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**CS87**  
**1612068-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/09/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 104 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 115 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 106 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 105 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**CS88**  
**1612068-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/09/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 104 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 109 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 104 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**CS89**  
**1612068-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/09/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 103 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                            | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|------------------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                        | ND           | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/09/16 | EPA 8260B |       |
| Benzene                            | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| <b>Toluene</b>                     | <b>0.011</b> | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                       | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>             | <b>0.093</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| <b>Gasoline Range Hydrocarbons</b> | <b>0.98</b>  | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 115 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**CS90**  
**1612068-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/09/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 99.8 %          | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                     | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND     | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/09/16 | EPA 8260B |       |
| Benzene                     | ND     | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND     | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Xylenes (total)             | ND     | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND     | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 112 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 103 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 103 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/16 12:29

**CS91**  
**1612068-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/09/16 00:00**

| Analyte       | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method | Notes |
|---------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| C10-C28 (DRO) | ND     | 50              | mg/kg | 1        | 1612105 | 12/09/16 | 12/10/16 | 8015M  |       |

Date Sampled: **12/09/16 00:00**

| Analyte                | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl |        | 101 %           | 30-150 |          | "     | "        | "        | "      |       |

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/09/16 00:00**

| Analyte                     | Result       | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method    | Notes |
|-----------------------------|--------------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Naphthalene                 | ND           | 0.010           | mg/kg | 1        | 1612104 | 12/09/16 | 12/10/16 | EPA 8260B |       |
| Benzene                     | ND           | 0.0020          | "     | "        | "       | "        | "        | "         |       |
| Toluene                     | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| Ethylbenzene                | ND           | 0.0050          | "     | "        | "       | "        | "        | "         |       |
| <b>Xylenes (total)</b>      | <b>0.021</b> | 0.010           | "     | "        | "       | "        | "        | "         |       |
| Gasoline Range Hydrocarbons | ND           | 0.50            | "     | "        | "       | "        | "        | "         |       |

Date Sampled: **12/09/16 00:00**

| Analyte                          | Result | Reporting Limit | Units  | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 |        | 116 %           | 23-173 |          | "     | "        | "        | "      |       |
| Surrogate: Toluene-d8            |        | 104 %           | 20-170 |          | "     | "        | "        | "      |       |
| Surrogate: 4-Bromofluorobenzene  |        | 106 %           | 21-167 |          | "     | "        | "        | "      |       |

Summit Scientific

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.



PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/16 12:29

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1612105 - EPA 3550A**

**Blank (1612105-BLK1)**

Prepared & Analyzed: 12/09/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.0 " 12.5 104 30-150

**LCS (1612105-BS1)**

Prepared & Analyzed: 12/09/16

C10-C28 (DRO) 446 50 mg/kg 499 89.4 73-134

Surrogate: o-Terphenyl 13.1 " 12.5 105 30-150

**Matrix Spike (1612105-MS1)**

Source: 1612068-01

Prepared & Analyzed: 12/09/16

C10-C28 (DRO) 443 50 mg/kg 494 12.6 87.2 50-148

Surrogate: o-Terphenyl 13.0 " 12.4 105 30-150

**Matrix Spike Dup (1612105-MSD1)**

Source: 1612068-01

Prepared & Analyzed: 12/09/16

C10-C28 (DRO) 441 50 mg/kg 494 12.6 86.7 50-148 0.538 20

Surrogate: o-Terphenyl 12.9 " 12.4 105 30-150

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
12/11/16 12:29

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612104 - EPA 5030 Soil MS**

**Blank (1612104-BLK1)**

Prepared & Analyzed: 12/09/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      |        |  |  |  |
| Benzene                          | ND     | 0.0020 | "     |        |  |      |        |  |  |  |
| Toluene                          | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Ethylbenzene                     | ND     | 0.0050 | "     |        |  |      |        |  |  |  |
| Xylenes (total)                  | ND     | 0.010  | "     |        |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons      | ND     | 0.50   | "     |        |  |      |        |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0367 |        | "     | 0.0400 |  | 91.6 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0404 |        | "     | 0.0400 |  | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0418 |        | "     | 0.0400 |  | 105  | 21-167 |  |  |  |

**LCS (1612104-BS1)**

Prepared & Analyzed: 12/09/16

|                                  |        |        |       |        |  |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|--|------|--------|--|--|--|
| Naphthalene                      | ND     | 0.010  | mg/kg |        |  |      | 66-138 |  |  |  |
| Benzene                          | 0.110  | 0.0020 | "     | 0.100  |  | 110  | 58-130 |  |  |  |
| Toluene                          | 0.109  | 0.0050 | "     | 0.100  |  | 109  | 61-134 |  |  |  |
| Ethylbenzene                     | 0.113  | 0.0050 | "     | 0.0992 |  | 114  | 74-139 |  |  |  |
| m,p-Xylene                       | 0.220  | 0.010  | "     | 0.200  |  | 110  | 73-137 |  |  |  |
| o-Xylene                         | 0.113  | 0.0050 | "     | 0.0980 |  | 115  | 73-141 |  |  |  |
| Xylenes (total)                  | 0.332  | 0.010  | "     |        |  |      | 0-200  |  |  |  |
| Gasoline Range Hydrocarbons      | 1.95   | 0.50   | "     |        |  |      | 30-150 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0329 |        | "     | 0.0400 |  | 82.4 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0405 |        | "     | 0.0400 |  | 101  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0411 |        | "     | 0.0400 |  | 103  | 21-167 |  |  |  |

**Matrix Spike (1612104-MS1)**

Source: 1612068-01

Prepared & Analyzed: 12/09/16

|                                  |        |        |       |        |         |      |        |  |  |  |
|----------------------------------|--------|--------|-------|--------|---------|------|--------|--|--|--|
| Naphthalene                      | 0.0106 | 0.010  | mg/kg |        | 0.00735 |      | 10-158 |  |  |  |
| Benzene                          | 0.0476 | 0.0020 | "     | 0.100  | ND      | 47.6 | 30-131 |  |  |  |
| Toluene                          | 0.0397 | 0.0050 | "     | 0.100  | ND      | 39.7 | 30-134 |  |  |  |
| Ethylbenzene                     | 0.0325 | 0.0050 | "     | 0.0992 | ND      | 32.7 | 22-153 |  |  |  |
| m,p-Xylene                       | 0.0622 | 0.010  | "     | 0.200  | 0.00936 | 26.5 | 10-159 |  |  |  |
| o-Xylene                         | 0.0329 | 0.0050 | "     | 0.0980 | ND      | 33.6 | 31-151 |  |  |  |
| Xylenes (total)                  | 0.0951 | 0.010  | "     |        | 0.00936 |      | 30-160 |  |  |  |
| Gasoline Range Hydrocarbons      | 0.297  | 0.50   | "     |        | 0.373   |      | 30-160 |  |  |  |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0384 |        | "     | 0.0400 |         | 95.9 | 23-173 |  |  |  |
| Surrogate: Toluene-d8            | 0.0408 |        | "     | 0.0400 |         | 102  | 20-170 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 0.0410 |        | "     | 0.0400 |         | 102  | 21-167 |  |  |  |

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/16 12:29

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 1612104 - EPA 5030 Soil MS**

| Matrix Spike Dup (1612104-MSD1)  | Source: 1612068-01 |        |       | Prepared & Analyzed: 12/09/16 |         |      |        |      |    |       |
|----------------------------------|--------------------|--------|-------|-------------------------------|---------|------|--------|------|----|-------|
| Naphthalene                      | 0.0106             | 0.010  | mg/kg |                               | 0.00735 |      | 10-158 | 0.00 | 42 |       |
| Benzene                          | 0.0894             | 0.0020 | "     | 0.100                         | ND      | 89.4 | 30-131 | 61.0 | 34 | QM-07 |
| Toluene                          | 0.0824             | 0.0050 | "     | 0.100                         | ND      | 82.4 | 30-134 | 70.0 | 30 | QM-07 |
| Ethylbenzene                     | 0.0772             | 0.0050 | "     | 0.0992                        | ND      | 77.9 | 22-153 | 81.7 | 24 | QM-07 |
| m,p-Xylene                       | 0.147              | 0.010  | "     | 0.200                         | 0.00936 | 68.7 | 10-159 | 80.8 | 68 | QM-07 |
| o-Xylene                         | 0.0787             | 0.0050 | "     | 0.0980                        | ND      | 80.3 | 31-151 | 82.1 | 38 | QM-07 |
| Xylenes (total)                  | 0.225              | 0.010  | "     |                               | 0.00936 |      | 30-160 | 81.2 | 30 | QM-07 |
| Gasoline Range Hydrocarbons      | 1.09               | 0.50   | "     |                               | 0.373   |      | 30-160 | 114  | 30 | QM-07 |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0371             |        | "     | 0.0400                        |         | 92.8 | 23-173 |      |    |       |
| Surrogate: Toluene-d8            | 0.0405             |        | "     | 0.0400                        |         | 101  | 20-170 |      |    |       |
| Surrogate: 4-Bromofluorobenzene  | 0.0411             |        | "     | 0.0400                        |         | 103  | 21-167 |      |    |       |

Summit Scientific

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PDC Energy  
1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Steinwald #1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
12/11/16 12:29

### Notes and Definitions

QM-07    The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET       Analyte DETECTED

ND       Analyte NOT DETECTED at or above the reporting limit

NR       Not Reported

dry       Sample results reported on a dry weight basis

RPD       Relative Percent Difference