



August 30, 2019

Mr. Jacob Evans
Noble Energy, Inc.
2115 117th Avenue
Greeley, Colorado 80621

**Source Excavation Report
Agricultural Products Federal #32-17
Historical Release
40.269576 / -104.797120
SW 1/4 NE 1/4 SEC.32 T4N R66W 6PM
Weld County, Colorado
Remediation # 12471**

Dear Mr. Evans,

Eagle Environmental Consulting, Inc. (EAGLE) is pleased to present this Source Excavation Report for the above referenced site.

1.0 SITE BACKGROUND

EAGLE was requested by Noble Energy, Inc. (Noble) to perform subsurface assessment activities at the site in response to potential petroleum hydrocarbon impacts associated with the removal of the produced water vault at the Agricultural Products Federal #32-17 tank battery (site). Following removal of the water vault, EAGLE collected soil samples SS-01 through SS-05 from the excavation. Based on soil laboratory analytical results, soil samples SS-01@3', SS-02@3', SS-03@3', SS-04@3', and SS-05@6' did not contain concentrations of BTEX, naphthalene, or total petroleum hydrocarbons (TPH) exceeding applicable COGCC Table 910-1 regulatory limits.

However, following initial assessment activities, EAGLE and Noble completed additional soil assessment activities to attempt preliminary delineation of petroleum hydrocarbon staining and odor observed at the site during water vault removal activities. On February 21, 2019, potholing was completed, utilizing a backhoe, within the initial limits of the water vault excavation. One (1) pothole soil samples (PH-02@12') was submitted for laboratory analysis.

On February 21, 2019, groundwater was observed within pothole location PH-02 at approximately 12-12.5 feet bgs. EAGLE collected a grab groundwater sample (GW-01), placed the sample in an iced cooler. Based on laboratory analytical results, soil sample PH-02@12' contained concentrations of benzene (1.30 milligrams per kilogram (mg/kg)) and TPH (584 mg/kg) exceeding applicable COGCC Table 910-1 regulatory limits of 0.17 mg/kg and 500 mg/kg, respectively. Additionally, grab groundwater sample GW-01 contained concentrations of benzene (8,250 micrograms per liter (µg/L)), ethylbenzene (898 µg/L), and total xylenes (8,890 µg/L) exceeding applicable COGCC Table 910-1 regulatory limits of 5 µg/L, 700 µg/L, and 1,400 µg/L, respectively.

On April 5, 2019, six (6) soil borings (MW-01 through MW-06) were advanced around the historical produced water release area to assess dissolved benzene, toluene, ethylbenzene, and total xylenes (BTEX) impacts associated with the historical release. Following advancement activities, each soil boring was

completed as a 1-inch, groundwater monitoring well to define the extents of dissolved petroleum hydrocarbon impacts beneath the site. Soil and groundwater samples were collected from each soil boring/monitoring well. Based on laboratory analytical results, soil and groundwater remediation would be required at the site.

Following assessment activities, a source excavation was scheduled. The following narrative details source excavation activities completed at the site.

2.0 SITE DESCRIPTION

The Agricultural Products Federal #32-17 site is located within the southwest quarter of the northeast quarter of Section 32, Township 4 north, Range 66 west of the 6th Prime Meridian. The historical release was located at latitude: 40.269576 and longitude: -104.797120. A topographic site location map is presented as Figure 1. An aerial site location map is presented as Figure 2.

2.1 Site Hydrogeology

The soil lithology observed beneath the release location consists of medium-dense, clayey sand from the ground surface to approximately 8 feet below ground surface (bgs), underlain by sandy clay from approximately 8 feet bgs to 12 feet bgs, underlain by clayey sand from approximately 12 to 15 feet bgs. Groundwater during initial assessment activities was approximately 12 to 12.5 feet bgs. Groundwater was observed at approximately 8 feet bgs during well installation activities and 7.5 feet during pre-excavation potholing and source excavation activities.

3.0 SOURCE EXCAVATION

3.1 Pre-Excavation Pothole Assessment Activities

On June 20, 2019, additional potholing was completed, utilizing a backhoe, outside the limits of the initial water vault excavation and adjacent to the previously installed monitoring wells. Soil samples from potholes EXC-PH-01, EXC-PH-02, EXC-PH-03, EXC-PH-04, and EXC-PH-05 were collected at various depths at the site to aid in characterizing extents of adsorbed petroleum hydrocarbon impacts. A portion of each soil sample was placed in a sealable plastic bag for VOC headspace analysis utilizing a field calibrated PID. Another portion of the soil sample was placed in a 2-ounce glass jar and packed in an iced cooler. During potholing activities, groundwater was observed at approximately 7.5 feet bgs.

Nine (9) pothole soil samples (EXC-PH-01@5', EXC-PH-01@7', EXC-PH-02@5', EXC-PH-02@7', EXC-PH-03@5', EXC-PH-03@7', EXC-PH-04@5', EXC-PH-04@7', and EXC-PH-05@7') were submitted to Origins for laboratory analysis of BTEX, naphthalene, TPH-GRO, and TPH-DRO following modified EPA Methods 8260D and 8015D. The laboratory received the soil samples within the required holding time for each laboratory analysis.

Based on laboratory analytical results:

- Soil samples EXC-PH-01@5', EXC-PH-01@7', EXC-PH-02@5', EXC-PH-02@7', EXC-PH-03@5', EXC-PH-03@7', EXC-PH-04@5', EXC-PH-04@7', and EXC-PH-05@7' did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits.

Pothole assessment soil analytical results are presented in Figure 3 and summarized in Table 1. The laboratory analytical report for the pre-excavation pothole soil samples is included in Attachment A.

3.2 Source Excavation Activities

On June 24, 2019, EAGLE and Noble supervised excavation activities to remove adsorbed petroleum hydrocarbon impacts beneath, and adjacent to, the removed water vault associated with the Agricultural Products Federal #32017 site. 4X Industrial (4X) provided the necessary equipment and personnel to remove and transport petroleum hydrocarbon impacted soil from the site.

The soil lithology observed during source excavation activities consists of medium-dense, clayey sand from the ground surface to approximately 8 feet bgs. Groundwater was observed at approximately 7.5 feet bgs during excavation activities.

Waste characterization/confirmation soil samples (EXC-SS-01, EXC-SS-02, EXC-SS-03, EXC-SS-04, EXC-SS-05, EXC-SS-06, EXC-SS-07, and EXC-SS-08) were collected at various locations to determine the lateral extent of petroleum hydrocarbon impacts in the soil beneath and adjacent to the historical release. A portion of each soil sample was placed in a sealable plastic bag for VOC headspace analysis utilizing a field calibrated PID. Another portion of the soil sample was placed in a 2-ounce glass jar and packed in an iced cooler.

Based on location and PID analysis, selected jarred soil samples were submitted to Origins, under standard chain of custody procedures, for analysis of BTEX, naphthalene, TPH-GRO, and TPH-DRO following modified EPA Methods 8260D and 8015D. The laboratory received the soil samples within the required holding time for each laboratory analysis.

A total of eight (8) confirmation soil samples (EXC-SS-01@7', EXC-SS-02@7', EXC-SS-03@7', EXC-SS-04@7', EXC-SS-05@7', EXC-SS-06@7', EXC-SS-07@7', and EXC-SS-08@7') were submitted for laboratory analysis. Spatial location of each soil sample was recorded using a Trimble GeoXT 6000 series instrument. A site map presenting the limits of the excavation, as well as soil sample locations, is included as Figure 4.

The final limits of the Agricultural Products Federal #32-17 excavation extended approximately 50 feet north to south and 35 feet east to west. Based on groundwater infiltration and sidewall integrity at the time, the excavation was limited to a depth of approximately 7.5 to 8 feet bgs. Prior to backfill, approximately 300 pounds of granular activated carbon (GAC) and 300 pounds of gypsum were applied to the base of the excavation to aid in the remediation of dissolved petroleum hydrocarbon impacts at the site. Safety data sheets for the GAC and gypsum are included in Attachment B.

Approximately 330 cubic yards of soil were removed during excavation activities, and transported offsite for disposal at Buffalo Ridge Landfill located in Keenesburg, Colorado. During pre-excavation pothole assessment and source excavation activities, monitoring wells MW-01 through MW-06 were destroyed.

3.3 Excavation Laboratory Analytical Results

Based on soil laboratory analytical results:

- Confirmation soil samples (EXC-SS-01@7', EXC-SS-02@7', EXC-SS-03@7', EXC-SS-04@7', EXC-SS-05@7', EXC-SS-06@7', EXC-SS-07@7', and EXC-SS-08@7') collected from the Agricultural Product Federal #32-17 excavation did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits.

Excavation soil analytical results are presented in Figure 4 and summarized in Table 1. The laboratory analytical report for the soil samples collected during source removal activities is included in Attachment A.

4.0 CONCLUSIONS

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

- On February 21, 2019, EAGLE assessed potential petroleum hydrocarbon impacts associated with the produced water vault at the Agricultural Products Federal #32-17 tank battery. On April 5, 2019 EAGLE installed monitoring wells MW-01 through MW-06. Based on soil and groundwater analytical results, additional soil and groundwater assessment and remediation was required.
- On June 20, 2019, pothole locations EXC-PH-01, EXC-PH-02, EXC-PH-03, EXC-PH-04, and EXC-PH-05, were advanced to aid in determining extents of petroleum hydrocarbon impacts at the site.
- Soil samples EXC-PH-01@5', EXC-PH-01@7', EXC-PH-02@5', EXC-PH-02@7', EXC-PH-03@5', EXC-PH-03@7', EXC-PH-04@5', EXC-PH-04@7', and EXC-PH-05@7' did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits.
- On June 24, 2019, EAGLE and Noble supervised excavation activities to removed petroleum hydrocarbon impacts associated with the historical release at Agriculture Products Federal #32-17 site. Approximately 330 cubic yards of soil were removed and transported to Buffalo Ridge for disposal.
- Confirmation soil samples (EXC-SS-01@7', EXC-SS-02@7', EXC-SS-03@7', EXC-SS-04@7', EXC-SS-05@7', EXC-SS-06@7', EXC-SS-07@7', and EXC-SS-08@7') collected from the Agriculture Products Federal #32-17 excavation did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits.
- Prior to backfill, approximately 300 pounds of GAC and 300 pounds of gypsum were applied to the base of the excavation to aid in remediation of residual petroleum hydrocarbon impacts at the site.
- Monitoring wells MW-01 through MW-06 were destroyed during pre-excavation pothole assessment and excavation activities.

5.0 RECOMMENDATIONS

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

- Install replacement and point of compliance monitoring wells at the site to assess and delineate dissolved petroleum hydrocarbon impacts;
- Investigate remedial options based on groundwater delineation results at the site.

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

Sincerely,

EAGLE ENVIRONMENTAL CONSULTING, INC.



Andrew Newberry
Project Geologist



Robin Lockwood
Project Scientist

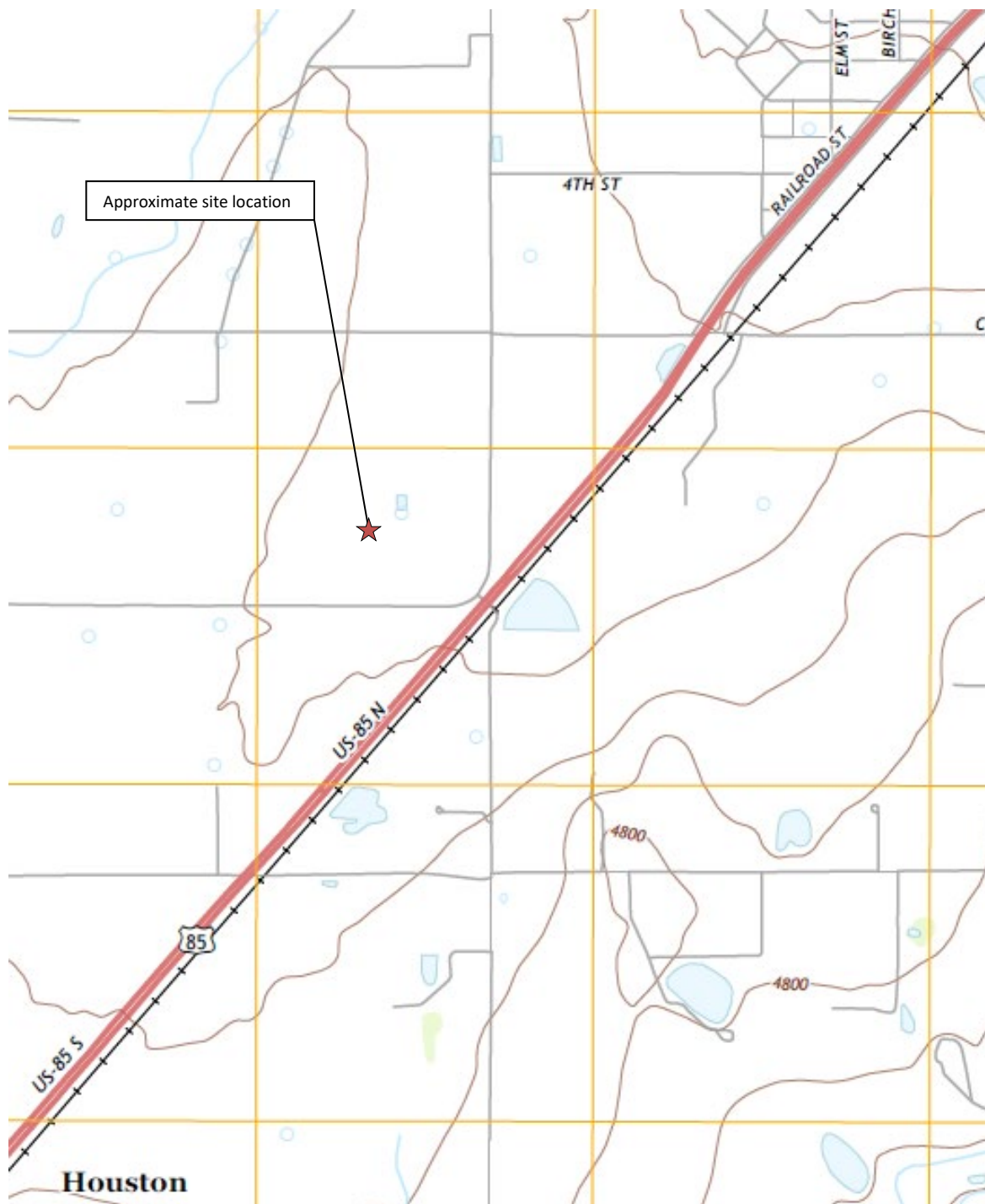
FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Pothole Assessment Map

Figure 4: Excavation Soil Analytical Map



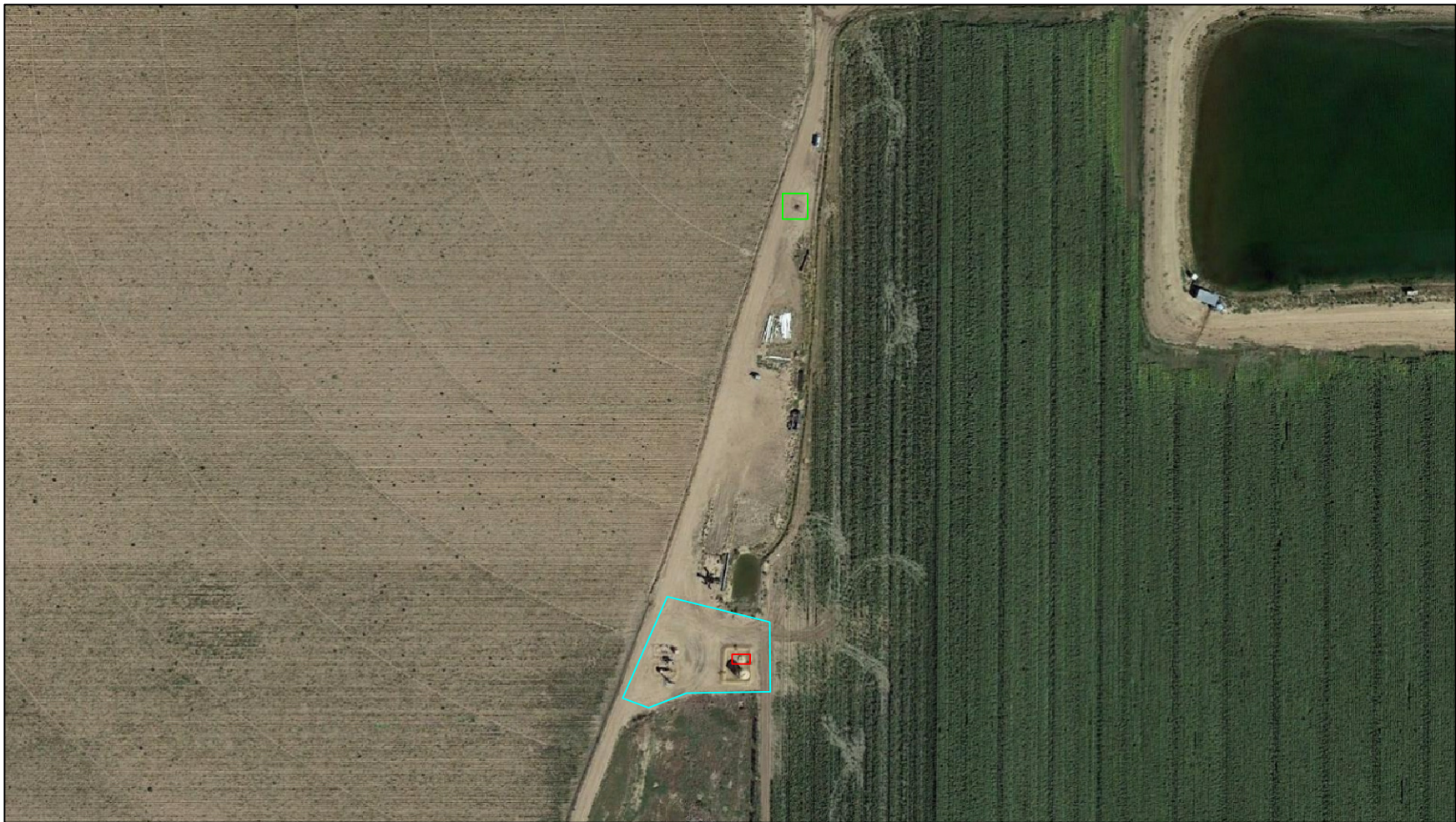
Topographic Site Location Map
 Agricultural Products Federal #32-17
 Historical Release
 40.269576 / -104.797120
 SW¼ NE¼ SEC.32 T4N R66W 6PM
 Weld County, Colorado
 Remediation # 12471



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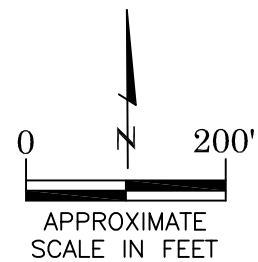
Source: USGS 7.5 Minute Topographic
 Map, Milliken, CO Quadrangle 2013

Figure 1



LEGEND

- AGRICULTURAL PRODUCTS FEDERAL #32-17 TANK BATTERY
- AGRICULTURAL PRODUCTS FEDERAL #32-17 WELL HEAD
- APPROXIMATE LOCATION OF WATER VAULT EXCAVATION/RELEASE



AERIAL SITE LOCATION MAP
 AGRICULTURAL PRODUCTS FEDERAL #32-17
 HISTORICAL RELEASE
 40.269576 / -104.797120
 SW1/4 NE1/4 SEC.32 T4N R66W 6PM
 WELD COUNTY, COLORADO
 REMEDIATION # 12471

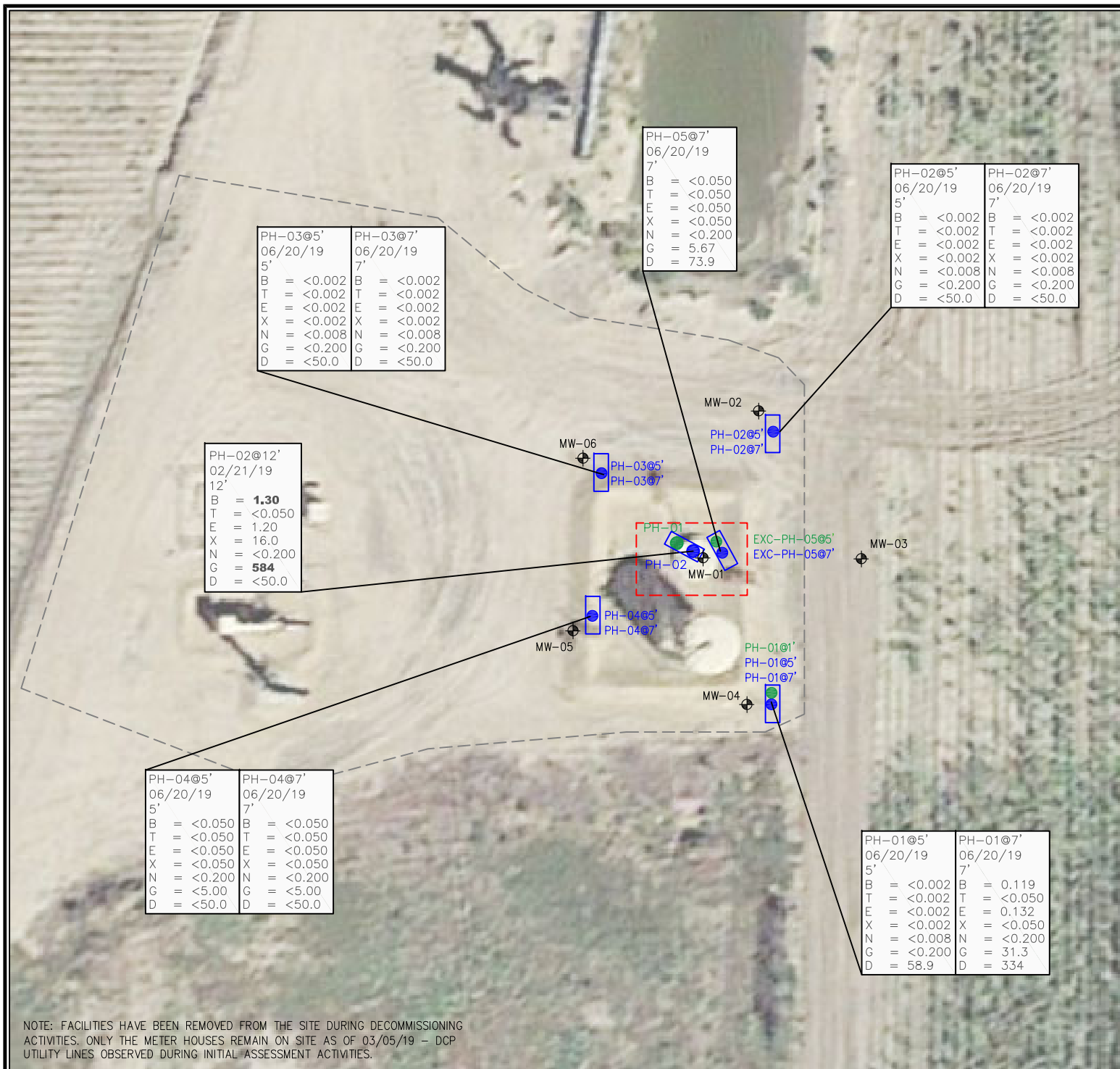
DATE:
 03/14/19

FIG. NO.
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 ar



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NOTE: FACILITIES HAVE BEEN REMOVED FROM THE SITE DURING DECOMMISSIONING ACTIVITIES. ONLY THE METER HOUSES REMAIN ON SITE AS OF 03/05/19 – DCP UTILITY LINES OBSERVED DURING INITIAL ASSESSMENT ACTIVITIES.

LEGEND

- APPROXIMATE TANK BATTERY BOUNDARY
- - - INITIAL EXCAVATION BOUNDARIES
- ⊕ APPROXIMATE MONITORING WELL LOCATIONS
- APPROXIMATE POTHOLE TEST PIT LOCATIONS
- APPROXIMATE POTHOLE SOIL SAMPLES COLLECTED FOR FIELD SCREENING WITH PHOTOIONIZATION DETECTOR (PID)
- POTHOLE SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

PARAMETERS

SOIL SAMPLE LOCATION

DATE

DEPTH (FEET)

B = BENZENE (mg/kg)
T = TOLUENE (mg/kg)
E = ETHYLBENZENE (mg/kg)
X = TOTAL XYLENES (mg/kg)
N = NAPHTHALENE (mg/kg)
G = TPH-GRO (mg/kg)
D = TPH-DRO (mg/kg)

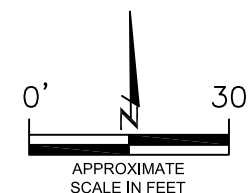
mg/kg = MILLIGRAMS PER KILOGRAM

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS – GASOLINE RANGE ORGANICS
TPH-DRO = TOTAL PETROLEUM HYDROCARBONS – DIESEL RANGE ORGANICS

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

VALUES PRESENTED IN **BOLD** TYPEFACE CONTAIN CONCENTRATIONS EXCEEDING COGCC REGULATORY LIMITS FOR THAT COMPOUND

COGCC – COLORADO OIL AND GAS CONSERVATION COMMISSION



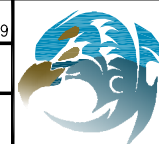
APPROXIMATE
SCALE IN FEET

POTHOLE ASSESSMENT MAP
AGRICULTURAL PRODUCTS FEDERAL #32-17
HISTORICAL RELEASE
40.269576 / -104.797120
SW1/4 NE1/4 SEC.32 T4N R66W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12471

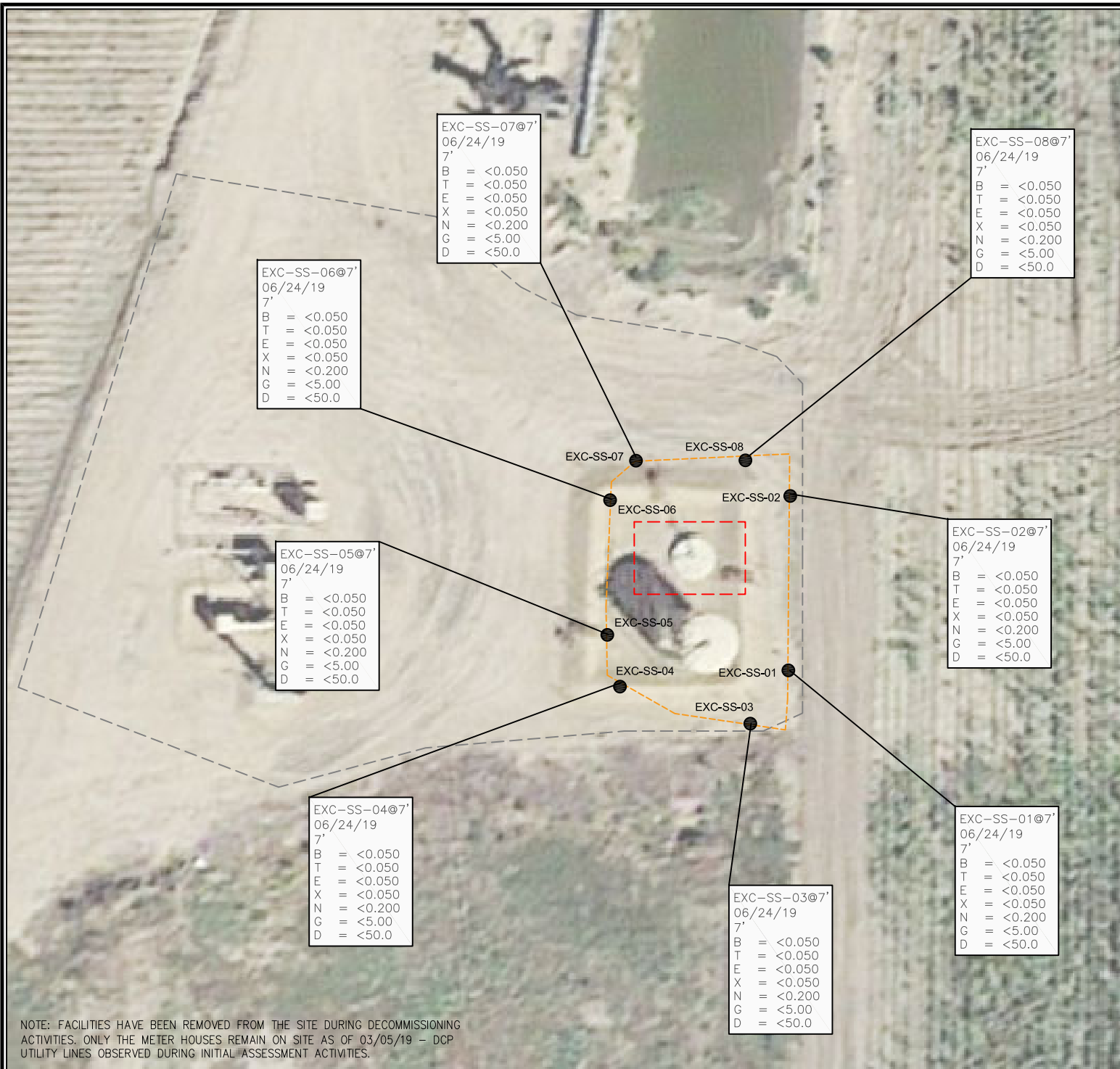
DATE:
08/30/19

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or

FIG.
NO. 3



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LEGEND

- APPROXIMATE TANK BATTERY BOUNDARY
- - - INITIAL EXCAVATION BOUNDARIES
- - - APPROXIMATE EXCAVATION BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

PARAMETERS

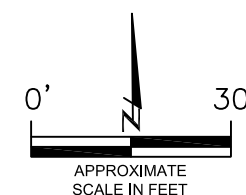
SOIL SAMPLE LOCATION
DATE
DEPTH (FEET)
B = BENZENE (mg/kg)
T = TOLUENE (mg/kg)
E = ETHYLBENZENE (mg/kg)
X = TOTAL XYLENES (mg/kg)
N = NAPHTHALENE (mg/kg)
G = TPH-GRO (mg/kg)
D = TPH-DRO (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS

TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS

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

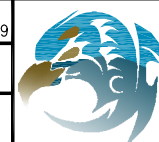


EXCAVATION SOIL ANALYTICAL MAP
AGRICULTURAL PRODUCTS FEDERAL #32-17
HISTORICAL RELEASE
40.269576 / -104.797120
SW1/4 NE1/4 SEC.32 T4N R66W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12471

DATE:
08/30/19

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or

FIG.
NO. 4



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TABLES

Table 1: Soil Analytical Results Summary

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
AGRICULTURAL PRODUCTS FEDERAL #32-17
HISTORICAL RELEASE
40.269576 / -104.797120
SW¼ NE¼ SEC.32 T4N R66W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12471

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Specific Conductance (mmhos/cm)	pH (pH units)	SAR
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500		<4	6 to 9	<12
SS-01 @ 3' (40.269606 / -104.797120)	02/21/19	3	<0.002	<0.002	<0.002	<0.002	<0.008	0.310	<50.0	NA	NA	NA
SS-02 @ 3' (40.269562 / -104.797120)	02/21/19	3	<0.002	<0.002	<0.002	<0.002	<0.008	1.59	263	0.183	8.94	9.55
SS-03 @ 3' (40.269583 / -104.797091)	02/21/19	3	<0.002	<0.002	<0.002	<0.002	<0.008	0.276	56.0	NA	NA	NA
SS-04 @ 3' (40.269583 / -104.797147)	02/21/19	3	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
SS-05 @ 6' (40.269576 / -104.797125)	02/21/19	6	<0.050	<0.050	0.098	<0.050	<0.200	133	270	NA	NA	NA
PH-02 @ 12' (40.269576 / -104.797125)	02/21/19	12	1.30	<0.050	1.20	16.0	<0.200	584	<50.0	NA	NA	NA
MW-01 @ 2.5-5' (40.269582 / -104.797111)	04/05/19	2.5-5	<0.050	<0.050	0.210	3.80	<0.200	15.0	57.6	NA	NA	NA
MW-02 @ 2.5-5' (40.269667 / -104.797065)	04/05/19	2.5-5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
MW-03 @ 5-7.5' (40.269580 / -104.796995)	04/05/19	5-7.5	<0.050	<0.050	<0.050	0.643	<0.200	74.6	114	NA	NA	NA
MW-04 @ 5-7.5' (40.269496 / -104.797073)	04/05/19	5-7.5	0.612	<0.050	0.466	<0.050	<0.200	131	497	NA	NA	NA
MW-05 @ 0-2.5' (40.269534 / -104.797222)	04/05/19	0-2.5	<0.050	<0.050	<0.050	<0.050	<0.200	25.0	<50.0	NA	NA	NA
MW-06 @ 2.5-5' (40.269640 / -104.797210)	04/05/19	2.5-5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
AGRICULTURAL PRODUCTS FEDERAL #32-17
HISTORICAL RELEASE
40.269576 / -104.797120
SW¼ NE¼ SEC.32 T4N R66W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12471

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Specific Conductance (mmhos/cm)	pH (pH units)	SAR
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500		<4	6 to 9	<12
EXC-PH-01 @ 5' (40.269494 / -104.797068)	06/20/19	5	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	58.9	NA	NA	NA
EXC-PH-01 @ 7' (40.269494 / -104.797068)	06/20/19	7	0.119	<0.050	0.132	<0.050	<0.200	31.3	334	NA	NA	NA
EXC-PH-02 @ 5' (40.269647 / -104.797066)	06/20/19	5	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
EXC-PH-02 @ 7' (40.269647 / -104.797066)	06/20/19	7	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
EXC-PH-03 @ 5' (40.269625 / -104.797188)	06/20/19	5	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
EXC-PH-03 @ 7' (40.269625 / -104.797188)	06/20/19	7	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
EXC-PH-04 @ 5' (40.269540 / -104.797201)	06/20/19	5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-PH-04 @ 7' (40.269540 / -104.797201)	06/20/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-PH-05 @ 7' (40.269581 / -104.797105)	06/20/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	5.67	73.9	NA	NA	NA
EXC-SS-01 @ 7' (40.269512 / -104.797056)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-02 @ 7' (40.269613 / -104.797060)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-03 @ 7' (40.269482 / -104.797085)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-04 @ 7' (40.269502 / -104.797181)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
AGRICULTURAL PRODUCTS FEDERAL #32-17
HISTORICAL RELEASE
40.269576 / -104.797120
SW¼ NE¼ SEC.32 T4N R66W 6PM
WELD COUNTY, COLORADO
REMEDIAL ACTION # 12471

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Specific Conductance (mmhos/cm)	pH (pH units)	SAR
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500		<4	6 to 9	<12
EXC-SS-05 @ 7" (40.269545 / -104.797205)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-06 @ 7" (40.269612 / -104.797199)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-07 @ 7" (40.269647 / -104.797156)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-08 @ 7" (40.269643 / -104.797098)	06/24/19	7	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
COGCC = Colorado Oil and Gas Conservation Commission mg/kg = milligrams per kilogram mmhos/cm = millimhos per centimeter NA = Not Analyzed TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics SAR = Sodium Adsorption Ratio Note: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit. Note: Values presented in BOLD contained concentrations exceeding COGCC Table 910-1 Regulatory Limits												

ATTACHMENT A

Laboratory Analytical Reports



June 21, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Agricultural Products
Federal #32-17**

Project Number - [none]

Attached are your analytical results for Noble - Agricultural Products Federal #32-17 received by Origins Laboratory, Inc. June 20, 2019. This project is associated with Origins project number Y906355-01.

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

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

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

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

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

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



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

Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Exc-PH-01@5'	Y906355-01	Soil	June 20, 2019 8:30	06/20/2019 12:03
Exc-PH-01@7'	Y906355-02	Soil	June 20, 2019 8:35	06/20/2019 12:03
Exc-PH-02@5'	Y906355-03	Soil	June 20, 2019 8:50	06/20/2019 12:03
Exc-PH-02@7'	Y906355-04	Soil	June 20, 2019 9:25	06/20/2019 12:03
Exc-PH-03@5'	Y906355-05	Soil	June 20, 2019 8:55	06/20/2019 12:03
Exc-PH-03@7'	Y906355-06	Soil	June 20, 2019 9:00	06/20/2019 12:03
Exc-PH-04@5'	Y906355-07	Soil	June 20, 2019 9:05	06/20/2019 12:03
Exc-PH-04@7'	Y906355-08	Soil	June 20, 2019 9:10	06/20/2019 12:03
Exc-PH-05@7'	Y906355-09	Soil	June 20, 2019 9:20	06/20/2019 12:03

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

www.originslaboratory.com

9900355

page 1 of 1

ORIGINS
LABORATORY, INC

Client: Eagle Env Consulting Inc.
Address: 8000 W. 44th Ave
Wheat Ridge, CO 80033
Telephone Number: (303) 433-0479
Email Address: MCE3@eagle-enviro.com

Project Manager: Martin Eckert III
Project Name: Agricultural Products Federal #32-17
Project Number: _____
Samples Collected By: AN/GEC

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa	Other	BTEX	Geo	DBP	
Exc-PH-01 @ 5'	6/20/19	830	2	X					X				X	X	1
Exc-PH-01 @ 7'		835											X	X	2
Exc-PH-02 @ 5'		850													3
Exc-PH-02 @ 7'		925													4
Exc-PH-03 @ 5'		855													5
Exc-PH-03 @ 7'		900													6
Exc-PH-04 @ 5'		905													7
Exc-PH-04 @ 7'		910													8
Exc-PH-05 @ 7'		920													9
															10

Relinquished By: [Signature] Date: 6/20/19 Time: 12:03
Relinquished By: [Signature] Date: 6/20/19 Time: 17:03

Received By: [Signature] Date: 6/20/19 Time: 17:03
Received By: [Signature] Date: 6/20/19 Time: 17:03

Turnaround Time: Same Day ☒ 24 Hr ☐
48 Hr ☐ 72 Hr ☐ Standard ☐

Date Results Needed 4.1

Temp Received- 4.1

Bill to Jacob

Origins Laboratory, Inc.

Jefe Pellegrini

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

Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y906355

Client: Eagle

Client Project ID: Agricultural Products

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 6/20/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.1 °C _____ / _____ °C _____ / _____ °C (Describe)

Thermometer ID: T003

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

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 6/20/19

Origins Laboratory, Inc.

Jefe Pellegrini

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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-01@5'
6/20/2019 8:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-01 (Soil)

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

Diesel (C10-C28)	58.9	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019
------------------	------	------	-------	---	---------	-----	------------	------------

Surrogate: o-Terphenyl	89.3 %	50-150			"	"	"
------------------------	--------	--------	--	--	---	---	---

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9F2003	KDK	06/20/2019	06/20/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"
Surrogate: Toluene-d8	95.7 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-01@7'
6/20/2019 8:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-02 (Soil)

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

Diesel (C10-C28)	334	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019
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Surrogate: o-Terphenyl	83.2 %	50-150			"	"	"
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	31.3	5.00	mg/kg	25	B9F2003	KDK	06/20/2019	06/20/2019
Benzene	0.119	0.050	"	"	"	KDK	"	"
Toluene	ND	0.050	"	"	"	KDK	"	" U
Ethylbenzene	0.132	0.050	"	"	"	KDK	"	"
Xylenes, total	ND	0.050	"	"	"	KDK	"	" U
Naphthalene	ND	0.200	"	"	"	KDK	"	" U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"
Surrogate: Toluene-d8	101 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-02@5'
6/20/2019 8:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-03 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019	U
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Surrogate: o-Terphenyl	74.3 %	50-150			"	"	"		
------------------------	--------	--------	--	--	---	---	---	--	--

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9F2003	KDK	06/20/2019	06/20/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	122 %	70-130			"	"	"		
Surrogate: Toluene-d8	98.3 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"		

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-02@7'
6/20/2019 9:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-04 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	80.8 %	50-150			"	"	"		
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9F2003	KDK	06/20/2019	06/20/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.2 %	70-130			"	"	"		
Surrogate: Toluene-d8	99.1 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	98.9 %	70-130			"	"	"		

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

Exc-PH-03@5'

6/20/2019 8:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-05 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	73.9 %	50-150			"	"	"		
------------------------	--------	--------	--	--	---	---	---	--	--

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9F2003	KDK	06/20/2019	06/20/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"		
Surrogate: Toluene-d8	97.2 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	98.2 %	70-130			"	"	"		

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-03@7'
6/20/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-06 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	78.6 %	50-150			"	"	"		
------------------------	--------	--------	--	--	---	---	---	--	--

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9F2003	KDK	06/20/2019	06/20/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.7 %	70-130			"	"	"		
Surrogate: Toluene-d8	98.4 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	98.8 %	70-130			"	"	"		

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-04@5'
6/20/2019 9:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-07 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	84.5 %	50-150			"	"	"		
------------------------	--------	--------	--	--	---	---	---	--	--

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2003	JTD	06/20/2019	06/20/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"		
Surrogate: Toluene-d8	102 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	97.8 %	70-130			"	"	"		

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-04@7'
6/20/2019 9:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906355-08 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	74.2 %	50-150			"	"	"		
------------------------	--------	--------	--	--	---	---	---	--	--

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2003	JTD	06/20/2019	06/20/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"		
Surrogate: Toluene-d8	99.9 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.8 %	70-130			"	"	"		

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

Exc-PH-05@7'
6/20/2019 9:20:00AM

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

Origins Laboratory, Inc.
Y906355-09 (Soil)

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

Diesel (C10-C28)	73.9	50.0	mg/kg	1	B9F2004	KDK	06/20/2019	06/20/2019
------------------	------	------	-------	---	---------	-----	------------	------------

Surrogate: o-Terphenyl	87.0 %	50-150			"	"	"
------------------------	--------	--------	--	--	---	---	---

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	5.67	5.00	mg/kg	25	B9F2003	JTD	06/20/2019	06/20/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.9 %	70-130			"	"	"
Surrogate: Toluene-d8	101 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	96.7 %	70-130			"	"	"

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9F2003 - EPA 5030 (soil)										
Blank (B9F2003-BLK1)					Prepared: 06/20/2019 Analyzed: 06/20/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		115	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.4	70-130			

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Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9F2003 - EPA 5030 (soil)										
Blank (B9F2003-BLK2)					Prepared: 06/20/2019 Analyzed: 06/20/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	70-130			

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Martin C Eckert III

Project Number: [none]

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2003 - EPA 5030 (soil)

LCS (B9F2003-BS1)

Prepared: 06/20/2019 Analyzed: 06/20/2019

Benzene	0.096	0.002	mg/kg	0.100		96.2	70-130			
Toluene	0.097	0.002	"	0.100		97.4	70-130			
Ethylbenzene	0.101	0.002	"	0.100		101	70-130			
m,p-Xylene	0.203	0.004	"	0.200		102	70-130			
o-Xylene	0.099	0.002	"	0.100		99.4	70-130			
Naphthalene	0.084	0.008	"	0.100		83.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.4	70-130			

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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2003 - EPA 5030 (soil)

LCS (B9F2003-BS2)

Prepared: 06/20/2019 Analyzed: 06/20/2019

Benzene	0.104	0.002	mg/kg	0.100		104	70-130			
Toluene	0.111	0.002	"	0.100		111	70-130			
Ethylbenzene	0.111	0.002	"	0.100		111	70-130			
m,p-Xylene	0.218	0.004	"	0.200		109	70-130			
o-Xylene	0.105	0.002	"	0.100		105	70-130			
Naphthalene	0.119	0.008	"	0.100		119	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2003 - EPA 5030 (soil)

Matrix Spike (B9F2003-MS1)		Source: Y906337-01			Prepared: 06/20/2019 Analyzed: 06/20/2019					
Benzene	0.075	0.002	mg/kg	0.100	ND	75.1	70-130			
Toluene	0.077	0.002	"	0.100	ND	77.5	70-130			
Ethylbenzene	0.074	0.002	"	0.100	ND	74.5	70-130			
m,p-Xylene	0.150	0.004	"	0.200	ND	75.1	70-130			
o-Xylene	0.076	0.002	"	0.100	ND	76.2	70-130			
Naphthalene	0.052	0.008	"	0.100	0.001	50.6	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		108	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2003 - EPA 5030 (soil)

Matrix Spike (B9F2003-MS2)		Source: Y906355-03			Prepared: 06/20/2019 Analyzed: 06/20/2019					
Benzene	0.073	0.002	mg/kg	0.100	ND	73.2	70-130			
Toluene	0.085	0.002	"	0.100	ND	84.7	70-130			
Ethylbenzene	0.105	0.002	"	0.100	ND	105	70-130			
m,p-Xylene	0.209	0.004	"	0.200	ND	104	70-130			
o-Xylene	0.096	0.002	"	0.100	ND	96.3	70-130			
Naphthalene	0.042	0.008	"	0.100	0.004	37.7	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.091		"	0.125		73.0	70-130			
Surrogate: Toluene-d8	0.14		"	0.125		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		107	70-130			

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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2003 - EPA 5030 (soil)

Matrix Spike Dup (B9F2003-MSD1)		Source: Y906337-01			Prepared: 06/20/2019 Analyzed: 06/20/2019					
Benzene	0.074	0.002	mg/kg	0.100	ND	74.2	70-130	1.21	20	
Toluene	0.069	0.002	"	0.100	ND	69.3	70-130	11.2	20	QM-07
Ethylbenzene	0.064	0.002	"	0.100	ND	63.8	70-130	15.5	20	QM-07
m,p-Xylene	0.128	0.004	"	0.200	ND	63.9	70-130	16.1	20	QM-07
o-Xylene	0.067	0.002	"	0.100	ND	66.6	70-130	13.4	20	QM-07
Naphthalene	0.057	0.008	"	0.100	0.001	55.8	70-130	9.58	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		123	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

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

Batch B9F2003 - EPA 5030 (soil)

Matrix Spike Dup (B9F2003-MSD2)		Source: Y906355-03			Prepared: 06/20/2019 Analyzed: 06/20/2019					
Benzene	0.084	0.002	mg/kg	0.100	ND	83.7	70-130	13.4	20	
Toluene	0.084	0.002	"	0.100	ND	84.4	70-130	0.307	20	
Ethylbenzene	0.085	0.002	"	0.100	ND	85.5	70-130	20.3	20	QR-03
m,p-Xylene	0.174	0.004	"	0.200	ND	86.9	70-130	18.4	20	
o-Xylene	0.088	0.002	"	0.100	ND	87.6	70-130	9.47	20	
Naphthalene	0.101	0.008	"	0.100	0.004	97.1	70-130	83.3	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		115	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2004 - EPA 3580

Blank (B9F2004-BLK1)

Prepared: 06/20/2019 Analyzed: 06/20/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	37		"	50.0		74.7	50-150			

Origins Laboratory, Inc.



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8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2004 - EPA 3580

Blank (B9F2004-BLK2)

Prepared: 06/20/2019 Analyzed: 06/21/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	47		"	50.0		93.1	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2004 - EPA 3580

LCS (B9F2004-BS1)

Prepared: 06/20/2019 Analyzed: 06/20/2019

Diesel (C10-C28)	943	50.0	mg/kg	1000		94.3	70-130			
Surrogate: o-Terphenyl	40		"	50.0		79.2	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2004 - EPA 3580

LCS (B9F2004-BS2)

Prepared: 06/20/2019 Analyzed: 06/21/2019

Diesel (C10-C28)	964	50.0	mg/kg	1000		96.4	70-130			
Surrogate: o-Terphenyl	47		"	50.0		95.0	50-150			

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Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2004 - EPA 3580

Matrix Spike (B9F2004-MS1)		Source: Y906337-01			Prepared: 06/20/2019 Analyzed: 06/20/2019					
Diesel (C10-C28)	1030	50.0	mg/kg	1000	34.3	99.8	70-130			
Surrogate: o-Terphenyl	50		"	50.0		99.1	50-150			

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8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2004 - EPA 3580

Matrix Spike (B9F2004-MS2)		Source: Y906355-03			Prepared: 06/20/2019 Analyzed: 06/21/2019					
Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	70-130			
Surrogate: o-Terphenyl	50		"	50.0		99.1	50-150			

Origins Laboratory, Inc.



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8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

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

Batch B9F2004 - EPA 3580

Matrix Spike Dup (B9F2004-MSD1)		Source: Y906337-01			Prepared: 06/20/2019 Analyzed: 06/20/2019					
Diesel (C10-C28)	929	50.0	mg/kg	1000	34.3	89.5	70-130	10.5	35	
Surrogate: o-Terphenyl	43		"	50.0		85.5	50-150			

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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2004 - EPA 3580

Matrix Spike Dup (B9F2004-MSD2)		Source: Y906355-03			Prepared: 06/20/2019 Analyzed: 06/21/2019					
Diesel (C10-C28)	1010	50.0	mg/kg	1000	ND	101	70-130	3.18	35	
Surrogate: o-Terphenyl	49		"	50.0		97.8	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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June 25, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

4101 Inca Street

Denver

CO 80211

**Project Name - Noble - Agricultural Products
Federal #32-17**

Project Number - [none]

Attached are your analytical results for Noble - Agricultural Products Federal #32-17 received by Origins Laboratory, Inc. June 24, 2019. This project is associated with Origins project number Y906410-01.

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

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

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

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

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

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



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

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EXC-SS-01@7'	Y906410-01	Soil	June 24, 2019 8:15	06/24/2019 15:10
EXC-SS-02@7'	Y906410-02	Soil	June 24, 2019 10:15	06/24/2019 15:10
EXC-SS-03@7'	Y906410-03	Soil	June 24, 2019 10:30	06/24/2019 15:10
EXC-SS-04@7'	Y906410-04	Soil	June 24, 2019 12:45	06/24/2019 15:10
EXC-SS-05@7'	Y906410-05	Soil	June 24, 2019 12:55	06/24/2019 15:10
EXC-SS-06@7'	Y906410-06	Soil	June 24, 2019 13:30	06/24/2019 15:10
EXC-SS-07@7'	Y906410-07	Soil	June 24, 2019 13:35	06/24/2019 15:10
EXC-SS-08@7'	Y906410-08	Soil	June 24, 2019 13:45	06/24/2019 15:10

Origins Laboratory, Inc.



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Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal
#32-17

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LABORATORY, INC

www.originslaboratory.com

1906410

page | of |

Client: EAGLE

Project Manager: MARTIN EGGERT III

Address: 8000 W. 44th AVE.

Project Name: MOBILE-AGRICULTURAL PRODUCTS FEDERAL #32-17

WHEAT RIDGE, CO 80033

Project Number: -

Telephone Number: 303-433-0479

Samples Collected By: SV

Email Address: HERB.EAGLE-ENVIRO.COM

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other	BTEX	CrO	PbO	
Exc-SS-01C7'	6/24/19	08:15	2	X					X			X	X	X	1
Exc-SS-02C7'		10:15	1												2
Exc-SS-03C7'		10:30	1												3
Exc-SS-04C7'		12:45	1												4
Exc-SS-05C7'		12:55	1												5
Exc-SS-06C7'		13:30	1												6
Exc-SS-07C7'		13:35	1												7
Exc-SS-08C7'		13:45	1												8
															9
															10
Relinquished By: <u>[Signature]</u>	Date: <u>6/24/19</u>	Time: <u>15:10</u>	Received By: <u>[Signature]</u>	Date: <u>6/24/19</u>	Time: <u>15:10</u>	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>									
Relinquished By: <u>[Signature]</u>	Date: <u>6/24/19</u>	Time: <u>15:10</u>	Received By: <u>[Signature]</u>	Date: <u>6/24/19</u>	Time: <u>15:10</u>										

BILL TO JACOB

Temp Received: 10.7

Date Results Needed

BILL TO NOBLE

Origins Laboratory, Inc.

Jeff Pellipini

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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver

CO

80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y906410

Client: Eagle

Client Project ID: Agricultural Products

Checklist Completed by: JG

Shipped Via: HD

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

Date/Time completed: 6/24/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 10.7 °C _____ / _____ °C _____ / _____ °C (Describe)

Thermometer ID: T003

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

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

Reviewed by (Project Manager)

6/24/19
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Agricultural Products Federal #32-17

EXC-SS-01@7'
6/24/2019 8:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906410-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
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Surrogate: o-Terphenyl	80.0 %	50-150			"	"	"		
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.0 %	70-130			"	"	"		
Surrogate: Toluene-d8	100 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.5 %	70-130			"	"	"		

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

EXC-SS-02@7'

6/24/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906410-02 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
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Surrogate: o-Terphenyl	84.7 %	50-150			"	"	"		
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.0 %	70-130			"	"	"		
Surrogate: Toluene-d8	99.5 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.3 %	70-130			"	"	"		

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

EXC-SS-03@7'

6/24/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906410-03 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	75.7 %	50-150			"	"	"		
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.8 %	70-130			"	"	"		
Surrogate: Toluene-d8	102 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.8 %	70-130			"	"	"		

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

EXC-SS-04@7'

6/24/2019 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y906410-04 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
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Surrogate: o-Terphenyl	79.1 %	50-150			"	"	"		
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.1 %	70-130			"	"	"		
Surrogate: Toluene-d8	99.6 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.0 %	70-130			"	"	"		

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

EXC-SS-05@7'

6/24/2019 12:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906410-05 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	76.3 %	50-150			"	"	"		
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.2 %	70-130			"	"	"		
Surrogate: Toluene-d8	98.9 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.7 %	70-130			"	"	"		

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4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

EXC-SS-06@7'

6/24/2019 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y906410-06 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
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Surrogate: o-Terphenyl	88.4 %	50-150			"	"	"		
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.6 %	70-130			"	"	"		
Surrogate: Toluene-d8	101 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	95.7 %	70-130			"	"	"		

Origins Laboratory, Inc.



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4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

EXC-SS-07@7'

6/24/2019 1:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906410-07 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
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Surrogate: o-Terphenyl	86.4 %	50-150			"	"	"		
------------------------	--------	--------	--	--	---	---	---	--	--

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.1 %	70-130			"	"	"		
Surrogate: Toluene-d8	101 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	95.7 %	70-130			"	"	"		

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

EXC-SS-08@7'

6/24/2019 1:45:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y906410-08 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9F2405	KDK	06/24/2019	06/24/2019	U
------------------	----	------	-------	---	---------	-----	------------	------------	---

Surrogate: o-Terphenyl	84.5 %	50-150			"	"	"		
------------------------	--------	--------	--	--	---	---	---	--	--

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9F2408	JTD	06/24/2019	06/24/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.0 %	70-130			"	"	"		
Surrogate: Toluene-d8	98.6 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	96.7 %	70-130			"	"	"		

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2405 - EPA 3580

Blank (B9F2405-BLK1)

Prepared: 06/24/2019 Analyzed: 06/24/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	43		"	50.0		85.9	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9F2405 - EPA 3580

LCS (B9F2405-BS1)

Prepared: 06/24/2019 Analyzed: 06/24/2019

Diesel (C10-C28)	919	50.0	mg/kg	1000		91.9	70-130			
Surrogate: o-Terphenyl	47		"	50.0		93.7	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

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

Batch B9F2405 - EPA 3580

Matrix Spike (B9F2405-MS1)		Source: Y906374-01			Prepared: 06/24/2019 Analyzed: 06/24/2019					
Diesel (C10-C28)	1040	50.0	mg/kg	1000	116	92.5	70-130			
Surrogate: o-Terphenyl	53		"	50.0		106	50-150			

Origins Laboratory, Inc.



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accordance with the chain of custody document. This
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Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

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

Batch B9F2405 - EPA 3580

Matrix Spike Dup (B9F2405-MSD1)		Source: Y906374-01			Prepared: 06/24/2019 Analyzed: 06/24/2019					
Diesel (C10-C28)	1080	50.0	mg/kg	1000	116	96.7	70-130	3.93	35	
Surrogate: o-Terphenyl	52		"	50.0		104	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9F2408 - EPA 5030 (soil)										
Blank (B9F2408-BLK1)					Prepared: 06/24/2019 Analyzed: 06/24/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.6	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

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

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

Batch B9F2408 - EPA 5030 (soil)

LCS (B9F2408-BS1)

Prepared: 06/24/2019 Analyzed: 06/24/2019

Benzene	0.104	0.002	mg/kg	0.100		104	70-130			
Toluene	0.107	0.002	"	0.100		107	70-130			
Ethylbenzene	0.106	0.002	"	0.100		106	70-130			
m,p-Xylene	0.212	0.004	"	0.200		106	70-130			
o-Xylene	0.103	0.002	"	0.100		103	70-130			
Naphthalene	0.082	0.008	"	0.100		81.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.6	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.1	70-130			

Origins Laboratory, Inc.



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accordance with the chain of custody document. This
analytical report must be reproduced in its entirety.*

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.

4101 Inca Street

Denver CO 80211

Martin C Eckert III

Project Number: [none]

Project: Noble - Agricultural Products Federal #32-17

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

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

Batch B9F2408 - EPA 5030 (soil)

Matrix Spike (B9F2408-MS1)		Source: Y906410-01			Prepared: 06/24/2019 Analyzed: 06/24/2019					
Benzene	2.69	0.050	mg/kg	2.50	ND	108	70-130			
Toluene	2.76	0.050	"	2.50	ND	110	70-130			
Ethylbenzene	2.78	0.050	"	2.50	ND	111	70-130			
m,p-Xylene	5.46	0.100	"	5.00	ND	109	70-130			
o-Xylene	2.62	0.050	"	2.50	ND	105	70-130			
Naphthalene	1.66	0.200	"	2.50	0.014	65.9	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	2.8		"	3.12		90.1	70-130			
Surrogate: Toluene-d8	3.2		"	3.12		102	70-130			
Surrogate: 4-Bromofluorobenzene	3.1		"	3.12		97.9	70-130			

Origins Laboratory, Inc.



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---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B9F2408 - EPA 5030 (soil)

Matrix Spike Dup (B9F2408-MSD1)		Source: Y906410-01			Prepared: 06/24/2019 Analyzed: 06/24/2019					
Benzene	2.63	0.050	mg/kg	2.50	ND	105	70-130	2.38	20	
Toluene	2.63	0.050	"	2.50	ND	105	70-130	4.86	20	
Ethylbenzene	2.68	0.050	"	2.50	ND	107	70-130	3.58	20	
m,p-Xylene	5.28	0.100	"	5.00	ND	106	70-130	3.20	20	
o-Xylene	2.59	0.050	"	2.50	ND	104	70-130	1.19	20	
Naphthalene	2.02	0.200	"	2.50	0.014	80.2	70-130	19.4	20	
Surrogate: 1,2-Dichloroethane-d4	2.9		"	3.12		94.2	70-130			
Surrogate: Toluene-d8	3.1		"	3.12		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	3.1		"	3.12		98.1	70-130			

Origins Laboratory, Inc.



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Project Number: [none]

Project: Noble - Agricultural Products Federal
#32-17

Notes and Definitions

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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ATTACHMENT B

Safety Data Sheets

WPX®

Powdered Reactivated Carbon

Applications



Industrial Wastewater



Ground Water



Surface Water



Remediation Water Treatment



Environmental Water

WPX has many applications in many varied industries and markets.

- Municipal Wastewater
- Industrial Wastewater
- Sludge Stabilization
- Soil Remediation
- Agricultural and Industrial Spill Sites

Description

WPX is a powdered activated carbon produced from reactivated granular carbons. WPX powdered reactivated carbon is ideally suited for the removal of toxic compounds, dyes, and/or refractory organic chemicals from wastewaters. The high iodine number of WPX allows for adsorption of a wide range of organic chemicals present in industrial wastewater. WPX has also proved to be effective in stabilizing soil and sludge, and is used in remediation stabilization/solidification processes. WPX powdered reactivated carbon is not to be used for Food Grade or Potable Water applications.

Features / Benefits

- Manufactured from reactivated carbon
- High activity
- Broad range of adsorbed organics
- Good settling characteristics
- Economical alternative to virgin powdered activated carbon

Specifications

WPC

Iodine Number, mg/g	800 min
Moisture (As packaged), wt%	4 max
< 325 US Mesh [0.045 mm], wt%	60–80

Safety Message

Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

1.800.4CARBON calgoncarbon.com

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DS-WPX15-EIN-E1

GYPSUM

SECTION 1. IDENTIFICATION

Product Identifier GYPSUM
Other Means of Identification Calcium Sulfate Dihydrate
Product Family Calcium Source
Recommended Use Drilling Fluid Additive.
Supplier Identifier Bri-Chem Supply Corp, 9351 Grant Street, Ste 380, Thornton, CO, 80229, 720-236-1012, www.brichemsupplycorp.com
Emergency Phone No. ChemTrec, (800) 424-9300, 24/7

SECTION 2. HAZARD IDENTIFICATION

Classification

Eye irritation - Category 2B

Label Elements

Inhalation: Exposure to dust generated during the handling or use of the product may cause temporary irritation to eyes, skin, nose, throat, and upper respiratory tract. Persons subjected to large amounts of this dust will be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation. Labored breathing may occur after excessive inhalation. If respiratory symptoms persist, consult physician.

Eyes: Dust can cause temporary mechanical irritation of eyes. If burning, redness, itching, pain or other symptoms persist or develop, consult physician.

Chronic:

Inhalation: Exposures to respirable crystalline silica rare not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing. Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of developing silicosis is dependent upon the exposure intensity and duration.

Target Organs:

Eyes, skin and respiratory system.

Primary Routes of Entry:

Inhalation, eyes and skin contact.

Carcinogenicity Classification of Ingredients:

All substances listed are associated with the nature of the raw materials used in the manufacture of this product and are not independent components of the product formulation. All substances, if present, are at levels well below regulatory limits. See Section 11: Toxicology Information for detailed information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Gypsum	13397-24-5	>95	
Crystalline Silica	14808-60-7	<1	

Notes

All ingredients of this product are included in the U.S Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory and the Canadian Domestic Substances List (DSL). * The weight percent for silica represents total quartz and not the respirable fraction.

Product Identifier: GYPSUM

Date of Preparation: October 30, 2015

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SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove to fresh air as soon as possible. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen and get medical attention.

Skin Contact

Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes. If skin irritation occurs, get medical advice or attention.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If adverse symptoms persist, seek medical attention.

Ingestion

If conscious give 2 to 4 glasses of water to drink but DO NOT induce vomiting. If swallowed, give patient large quantities of water then induce vomiting. NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing.

Most Important Symptoms and Effects, Acute and Delayed

If in eyes:

May cause mild irritation.

Immediate Medical Attention and Special Treatment

Target Organs

Lungs, eyes.

Medical Conditions Aggravated by Exposure

Bronchitis, Emphysema and Asthma.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Dry chemical, CO₂, foam, water.

Specific Hazards Arising from the Product

None known.

Decomposes to sulfur dioxide at 2642°F.

Special Protective Equipment and Precautions for Fire-fighters

Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

It is good practice to prevent releases into the environment. Do not wash down drains since it could plug drains.

Methods and Materials for Containment and Cleaning Up

Remove by dry-sweeping or vacuum. Avoid creating excessive dust. Wear approved respirators if necessary.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid generating dust. Wear approved respirator if necessary. Keep product dry.

Handle in accordance with good industrial hygiene and safety practice. It is good practice to: avoid breathing product; avoid skin and eye contact and wash hands after handling.

Conditions for Safe Storage

Store in a dry area to minimize potential for clumping due to moisture absorption. The presence of moisture will harden gypsum during storage.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

(gypsum) and (calcium carbonate)

ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. 10 mg/m³

OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. 15 mg/m³ (total dust); 5 mg/m³ (respirable dust)

(silica, quartz)

ACGIH® = American Conference of Governmental Industrial Hygienists. TWA = Time-Weighted Average. 0.025 mg/m³ (respirable fraction)

OSHA = US Occupational Safety and Health Administration. TWA = Time-Weighted Average. 30 mg/m³ divided by the value of "%SiO₂ + 2" (total quartz) 10 mg/m³ divided by the value of "%SiO₂ + 2" (respirable)

OSHA Z3 TWA: 250 mppcf divided by the value of "%SiO₂+5" (respirable)

OSHA Z-1-A and OSHA Z3 TWA: 0.1 mg/m³ (respirable fraction)

Immediately dangerous to life or health concentration value: 50 mg/m³.

Appropriate Engineering Controls

Use adequate general or local exhaust ventilation to keep dust levels as low as possible. None required where adequate ventilation conditions exist.

Individual Protection Measures

Eye/Face Protection

Use safety glasses or goggles.

Skin Protection

Gloves are not required but may be desirable under certain working conditions or to protect against drying of hands.

Respiratory Protection

None required where adequate ventilation conditions exist. A dust mask for nuisance dust can be used. If airborne concentrations of any hazardous ingredients exceed the TLV or PEL, use a NIOSH-approved respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	White - Off-white powder. Particle Size: Varies
Odour	Slight
Odour Threshold	Not available
pH	~ 7
Melting Point/Freezing Point	1559.85 °F (melting); Not available (freezing)
Initial Boiling Point/Range	Not available
Evaporation Rate	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not available
Solubility	~ 21 g/100 mL (Slightly soluble) in water
Auto-ignition Temperature	Not available
Decomposition Temperature	2642 °F (1450 °C)
Viscosity	Not available (kinematic)
Other Information	
Physical State	Solid
Molecular Formula	(CaSO ₄ -2H ₂ O)
Molecular Weight	~172g/mole
Bulk Density	721 - 2403 kg/m ³ (45 - 150 lb/ft ³)

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SECTION 10. STABILITY AND REACTIVITY

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Conditions to Avoid

None known.

Incompatible Materials

Aluminum, strong acids.

Hazardous Decomposition Products

Above 1450 C - calcium oxide (CaO) and sulfur dioxide (SO₂).

SECTION 11. TOXICOLOGICAL INFORMATION

Treat as a nuisance dust.

Likely Routes of Exposure

Inhalation.

Acute Toxicity

The acute oral toxicity study [OECD TG 420] of calcium sulfate dihydrate showed that this chemical did not cause any changes even at 2,000 mg/kg b.w. Therefore, the oral LD₅₀ value was more than 2,000 mg/kg b.w. for female rats. Gypsum paste applied experimentally to the eyes of rabbits was not an irritant. Gypsum dust particulate has shown an irritant action on mucous membranes of the respiratory tract and eyes. The sulfate ion has caused gastrointestinal disturbance in humans following large oral doses. Limited studies involving the repeated inhalation of an (unspecified) calcium sulfate failed to identify any particular target organs in monkeys, rats and hamsters. No evidence of mutagenicity was found in Ames bacterial tests.

Skin Corrosion/Irritation

May temporarily cause drying of the skin.

May cause temporary drying of the skin.

Serious Eye Damage/Irritation

May cause mild irritation.

May cause eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Mild irritant at high concentrations.

Persons exposed to large amounts of dust may experience nuisance conditions, including coughing, sneezing and nasal irritation.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

None known for gypsum. Prolonged and repeated exposure to crystalline silica by inhalation may cause silicosis and lung cancer.

None known for gypsum. Prolonged or repeated exposure to crystalline silica by inhalation may cause silicosis and lung cancer.

Carcinogenicity

(silica quartz):

IARC: Group 1 – Carcinogenic to humans.

NTP: Reasonably anticipated human carcinogen.

Crystalline Silica: Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing. The weight percent of respirable crystalline silica may not have been measured in this product. Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e. silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. Smoking in combination with silica exposures increases the risk of cancer. The risk of developing silicosis is dependent upon the exposure intensity and duration.

In June, 1997 IARC classified crystalline silica (quartz and cristobalite) as a human carcinogen. In making the overall

Product Identifier: GYPSUM

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evaluation, the IARC Working Group noted that carcinogenicity in humans was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. IARC states that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to human (Group 1). No information was located for: Respiratory and/or Skin Sensitization, Development of Offspring, Sexual Function and Fertility, Germ Cell Mutagenicity, Interactive Effects

SECTION 12. ECOLOGICAL INFORMATION

This product has shown no known adverse effect on ecology. Toxicity studies of gypsum performed with fish, aquatic vertebrates and aquatic plants showed no toxic effect.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of in accordance with federal, state and local government regulations.

SECTION 14. TRANSPORT INFORMATION

Not regulated under US DOT Regulations.

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

- CERCLA, SARA Section 302, 304, 313, CAA Section 112 and RCRA Code: Not Listed.

SECTION 16. OTHER INFORMATION

NFPA Rating	Health - 1	Flammability - 0	Instability - 0
SDS Prepared By	Bri-Chem Supply Corp		
Date of Preparation	October 30, 2015		
Disclaimer	This Health and Safety information is correct to the best of our knowledge and belief at the date of its publication, but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as guidance for safe handling, storage, and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet.		