



October 25, 2019

Mr. Jacob Evans
Noble Energy, Inc.
2115 117th Avenue
Greeley, Colorado 80631

**Source Excavation Report
Gemini B #31-11, 12, 13, 14, 25
Flow Line Release
40.348614 / -104.597099
SE1/4 SW1/4 SEC.31 T5N R64W 6PM
Weld County, Colorado
Remediation # 12355**

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 soil and groundwater impacts associated with an unintentional release from a produced water line associated with the Gemini B #31-11, 12, 13, 14, 25 facility. On October 17, 2018, EAGLE advanced seven (7) soil borings to determine if petroleum hydrocarbon impacts existed above Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 regulatory limits beneath and around the unintentional release location.

2.0 SITE DESCRIPTION

The Gemini B #31-11, 12, 13, 14, 25 site is located within the southeast quarter of the southwest quarter of Section 31, Township 5 north, Range 64 west of the 6th Prime Meridian. The unintentional release location along the produced water line was located at latitude: 40.348614 and longitude: -104.597099. 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-stiff, sandy silt from the surface to approximately 5 feet below ground surface (bgs), underlain by stiff, clay/silty clay from approximately 5 feet bgs to 25 feet bgs. Groundwater during soil boring advancement/monitoring well installation activities ranged from approximately 9.5 to 13 feet bgs during assessment activities. Groundwater during sampling activities ranged from approximately 8 to 13 feet bgs. Static groundwater was not observed during source excavation activities to a depth of approximately 15 feet bgs, though groundwater was observed between 5.5 and 8 feet bgs prior to excavation activities.

2.2 Previously Completed Activities

On October 17, 2018, October 25, 2018, and December 17, 2018, EAGLE advanced 11 soil borings (SS-01, SB-01, SB-02, and MW-01 through MW-08) to assess whether adsorbed petroleum hydrocarbon impacts existed above Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 regulatory limits beneath and around the unintentional release location. Following advancement activities, eight (8) soil borings (MW-01 through MW-08) were completed as a 1-inch, groundwater monitoring wells to assess dissolved petroleum hydrocarbon impacts beneath the site.

Based on PID reading and field observations, select soil samples from each boring (MW-01 through MW-08, SS-01, SB-01, and SB-02) were submitted to Origins Laboratory, Inc. (Origins) located in Denver, Colorado for laboratory analysis. Each soil sample was analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, total petroleum hydrocarbons – gasoline range organics (TPH-GRO), and total petroleum hydrocarbons – diesel range organics (TPH-DRO), following modified Environmental Protection Agency (EPA) Methods 8260c and 8015. The samples were transported in an iced cooler under standard chain-of-custody (COC) procedures to Origins, and were received within Quality Assurance/Quality Control (QA/QC) parameters.

Groundwater samples were collected from monitoring wells MW-01 through MW-06 on October 19, 2018, and MW-01 through MW-08 on January 3, 2019. Prior to sample collection, each monitoring well (MW-01 through MW-08) was developed through purging each location a minimum of six well volumes using a disposable PVC bailer. Following recharge, groundwater samples were collected from each monitoring well in 40 milliliter (mL) amber vials. The groundwater samples were submitted for laboratory analysis for BTEX following EPA Method 8260C. The samples were transported in an iced cooler under standard COC procedures to Origins, and were received within the required holding time and QA/QC parameters.

Based on laboratory analytical results, soil and groundwater remediation would be required at the site. Soil and groundwater laboratory analytical results are summarized in Table 1 and Table 2, respectively.

On December 17, 2018, EAGLE installed air sparge (AS) and soil vapor extraction (SVE) pilot test remedial wells (AS-01 and SVE-01) adjacent to monitoring wells MW-03 and MW-08. EAGLE completed AS/SVE pilot test activities at the site on January 3, 2019. Based on data collected from monitoring wells MW-02, MW-03, MW-04, MW-05, MW-07, and MW-08, as well as analytical results from the effluent stack vapor sample, AS/SVE technology does not appear to be an effective remedial approach for the site. A full assessment report was submitted, along with a Form 27, to COGCC on January 17, 2019.

On January 21, 2019, Fremont Environmental (Fremont) collected soil samples following the removal of the onsite water vault. Based on analytical results, the floor soil sample at 6 feet bgs contained concentrations of benzene and TPH exceeding applicable COGCC Table 910-1 regulatory limits.

In February 2019, EAGLE and 4X Industrial (4X) completed soil assessment activities to delineate adsorbed petroleum hydrocarbon impacts observed during soil boring assessment activities completed by EAGLE and water vault assessment activities completed by Fremont. Following soil assessment activities, additional groundwater monitoring activities and remedial technology evaluations, a source excavation was scheduled. The following narrative details source excavation activities completed at the site.

3.0 EXCAVATION ACTIVITIES

From September 25, 2019 through October 7, 2019, Noble and EAGLE supervised excavation activities to remove source material beneath, and adjacent to, the produced water line and produced water vault associated with the Gemini B #31-11, 12, 13, 14, 25 facility. 4X provided the necessary equipment and personnel to remove and transport petroleum hydrocarbon impacted soil from the site.

The soil lithology observed beneath the release location consists of medium-stiff, sandy silt from the surface to approximately 5 feet bgs, underlain by stiff, clay/silty clay from approximately 5 feet bgs to 15 feet bgs. Static groundwater was not observed during source excavation activities to a depth of approximately 15 feet bgs, though groundwater was observed between 5.5 and 8 feet bgs prior to excavation activities.

Waste characterization/confirmation soil samples (EXC-SS-01 through EXC-SS-18, EXC-FS-01 through EXC-FS-11) were collected at various locations to determine the lateral and vertical extent of petroleum hydrocarbon impacts in the soil beneath and adjacent to the release locations. 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 field observations and PID analysis, select jarred soil samples were submitted to Origins, under standard COC 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 28 confirmation soil samples were submitted for laboratory analysis. Spatial location of each soil sample was recorded using a Trimble GeoXT 6000 series instrument. Site maps presenting the limits of the excavations, as well as soil sample locations, is included as Figure 3a and Figure 3b.

The final limits of the Gemini B #31-11, 12, 13, 14, 25 produced water line excavation extended approximately 91 feet north to south and 63 feet east to west. The excavation was advanced to a depth of approximately 13 to 14 feet bgs. Prior to backfill, approximately 700 pounds of granular activated carbon (GAC) and 700 pounds of gypsum were applied to the base of the excavation to aid in the remediation of impacted groundwater. Safety data sheets associated with the applied GAC and gypsum are included in Attachment A.

The final limits of the produced water vault over-excavation extended approximately 26 feet north to south and 19 feet east to west. The excavation was advanced to a depth of approximately 15 feet bgs.

Approximately 1,050 cubic yards of soil were removed during source excavation activities, and transported offsite for disposal at Buffalo Ridge Landfill located in Keenesburg, Colorado.

Approximately 800 cubic yards of overburden soil were stockpiled onsite and utilized as backfill for the excavation. EAGLE collected one, 20-pt composite sample per 500 cubic yards of overburden material. Additionally, per Noble's request, one (1) composite sample was collected from the backfill brought to the site. The overburden composite samples (OB-Composite-01 and OB-Composite-02) and the backfill soil sample (Backfill-01) were submitted to Origins, under standard COC 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 analysis.

3.1 Laboratory Analytical Results

Based on soil laboratory analytical results:

- Soil samples EXC-SS-01@11.5', EXC-SS-08@11.5', and EXC-SS-09@11.5' contained concentrations of benzene (0.256 milligrams per kilogram (mg/kg), 0.785 mg/kg, and 1.38 mg/kg, respectively) exceeding the COGCC Table 910-1 regulatory limit of 0.17 mg/kg.
- Soil samples EXC-SS-01@11.5', EXC-SS-08@11.5', EXC-SS-09@11.5', and EXC-FS-06@13' contained concentrations of total petroleum hydrocarbons (TPH) (943 mg/kg, 1,269 mg/kg, 1,917 mg/kg, and 1,842 mg/kg, respectively) exceeding the COGCC Table 910-1 regulatory limit of 500 mg/kg.
- The excavation was extended vertically adjacent to soil sample EXC-FS-06@13', and confirmation soil sample EXC-FS-10@14' was collected to confirm petroleum hydrocarbon impacts at site were removed.
- Confirmation soil samples (EXC-SS-02@11.5', EXC-SS-03@11.5', EXC-SS-04@11.5', EXC-SS-05@11.5', EXC-SS-06@11.5', EXC-SS-07@11.5', EXC-SS-11@11.5', EXC-SS-12@11.5', EXC-SS-13@11.5', EXC-SS-14@11.5', EXC-SS-15@14', EXC-SS-16@14', EXC-SS-17@14', EXC-SS-18@14', EXC-FS-01@13', EXC-FS-02@13', EXC-FS-03@13', EXC-FS-04@13', EXC-FS-05@13', EXC-FS-07@13', EXC-FS-08@13', EXC-FS-09@13', EXC-FS-10@14', and EXC-FS-11@15') did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits and/or laboratory reporting limits.
- Overburden and backfill composite samples (OB-Composite-01, OB-Composite-02, and Backfill-01) did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits and/or laboratory reporting limits
- Due to the cottonwood tree located west adjacent to the produced water line excavation, the excavation could not extend further, and soil samples EXC-SS-01, EXC-SS-08, and EXC-SS-09 were left in place.

Excavation soil analytical results are summarized in Table 1. Excavation soil samples collected adjacent to the produced water line release are presented in Figure 3a, and samples associated with the produced water vault over-excavation are presented in Figure 3b. The laboratory analytical reports for the soil samples collected during source removal activities at the Gemini B #31-11, 12, 13, 14, 25 site are included in Attachment B.

4.0 CONCLUSIONS

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

- Approximately 1,050 cubic yards of soil were removed from the Gemini B #31-11, 12, 13, 14, 25 produced water line excavation and produced water vault over-excavation from September 25, 2019 through October 7, 2019.
- Soil samples EXC-SS-01@11.5', EXC-SS-08@11.5', and EXC-SS-09@11.5' contained concentrations of benzene exceeding the COGCC Table 910-1 regulatory limit.

- Soil samples EXC-SS-01@11.5', EXC-SS-08@11.5', EXC-SS-09@11.5', and EXC-FS-06@13' contained concentrations of TPH exceeding the COGCC Table 910-1 regulatory limit.
- The excavation was extended vertically adjacent to soil sample EXC-FS-06@13', and confirmation soil sample EXC-FS-10@14' was collected to confirm petroleum hydrocarbon impacts at site were removed.
- Confirmation soil samples (EXC-SS-02@11.5', EXC-SS-03@11.5', EXC-SS-04@11.5', EXC-SS-05@11.5', EXC-SS-06@11.5', EXC-SS-07@11.5', EXC-SS-11@11.5', EXC-SS-12@11.5', EXC-SS-13@11.5', EXC-SS-14@11.5', EXC-SS-15@14', EXC-SS-16@14', EXC-SS-17@14', EXC-SS-18@14', EXC-FS-01@13', EXC-FS-02@13', EXC-FS-03@13', EXC-FS-04@13', EXC-FS-05@13', EXC-FS-07@13', EXC-FS-08@13', EXC-FS-09@13', EXC-FS-10@14', and EXC-FS-11@15') did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits and/or laboratory reporting limits.
- Overburden and backfill composite samples (OB-Composite-01, OB-Composite-02, and Backfill-01) did not contain concentrations of BTEX, naphthalene, or TPH exceeding applicable COGCC Table 910-1 regulatory limits and/or laboratory reporting limits
- Due to the cottonwood tree adjacent west to the produced water line excavation, the excavation could not extend laterally adjacent to soil sample location EXC-SS-01, EXC-SS-08, and EXC-SS-09.
- Prior to backfill, approximately 700 pounds of GAC, and 700 pounds of gypsum were applied to the base of the produced water line excavation.

5.0 RECOMMENDATIONS

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

- Install replacement and additional monitoring wells to define and monitor dissolved phase hydrocarbon impacts beneath the site following Noble approval;
- Continue quarterly groundwater sampling at the site to monitor dissolved BTEX concentrations;
- Investigate remedial options to address residual adsorbed petroleum hydrocarbon impacts 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

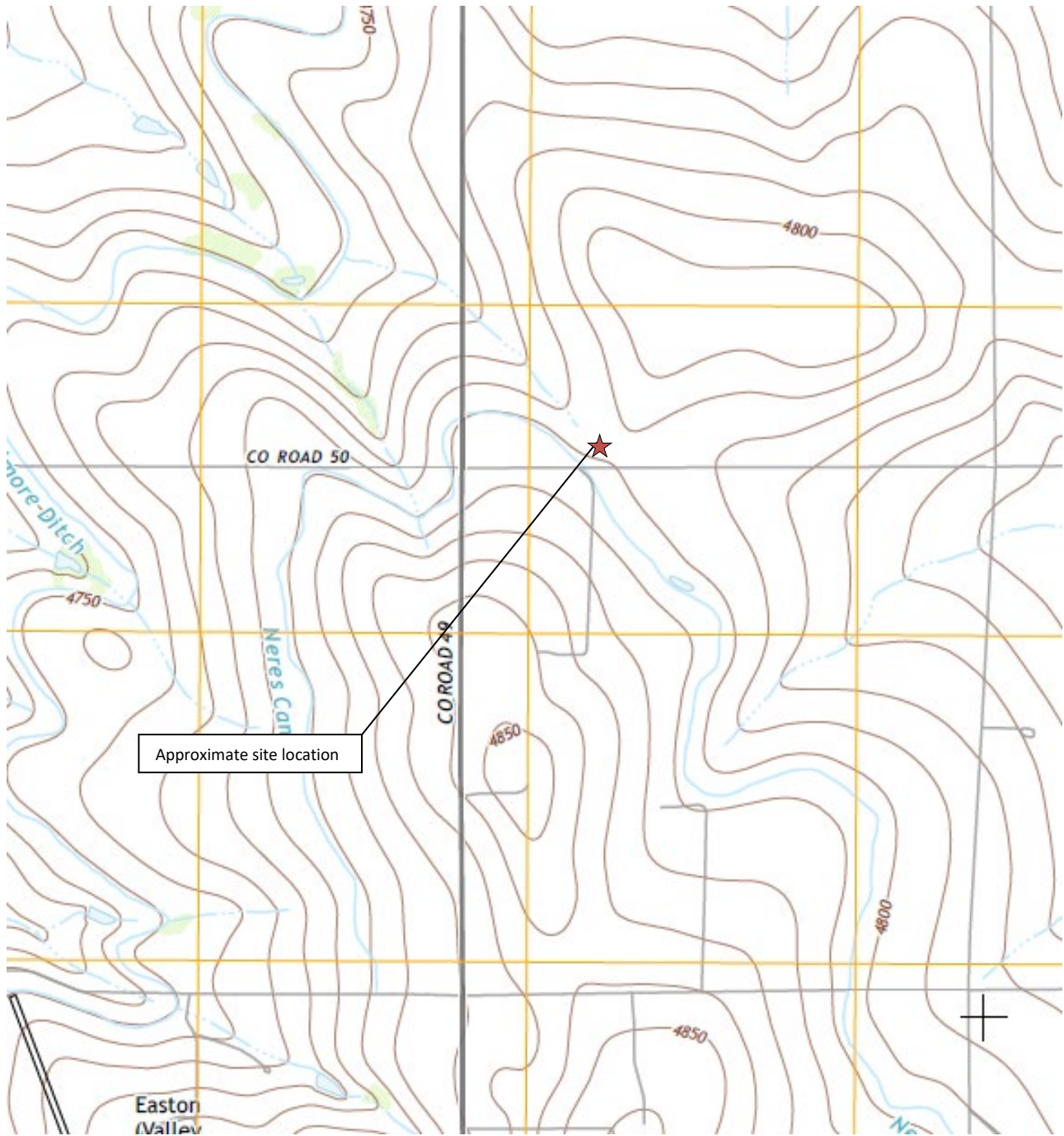
FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3a: Excavation Soil Analytical Map – Produced Water Line

Figure 3b: Excavation Soil Analytical Map – Produced Water Vault



Approximate site location



Topographic Site Location Map

Gemini B #31-11, 12, 13, 14, 25
 Flow Line Release
 40.348611 / -104.597026
 SE¼ SW¼ SEC.31 T5N R64W 6PM
 Weld County, Colorado
 Remediation # 12355



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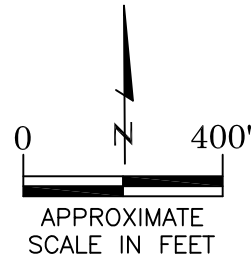
Source: USGS 7.5 Minute Topographic Map, Valley View School, CO Quadrangle 2013

Figure 1



LEGEND

- GEMINI B #31-11, 12, 13, 14, 25 TANK BATTERY
- GEMINI B #31-11 WELL HEAD
- GEMINI B #31-12 WELL HEAD
- GEMINI B #31-13 WELL HEAD
- GEMINI B #31-14 WELL HEAD
- GEMINI B #31-25 WELL HEAD



AERIAL SITE LOCATION MAP
 GEMINI B #31-11, 12, 13, 14, 25
 FLOW LINE RELEASE
 40.348611 / -104.597026
 SE1/4 SW1/4 SEC.31 T5N R64W 6PM
 WELD COUNTY, COLORADO
 REMEDIATION # 12355

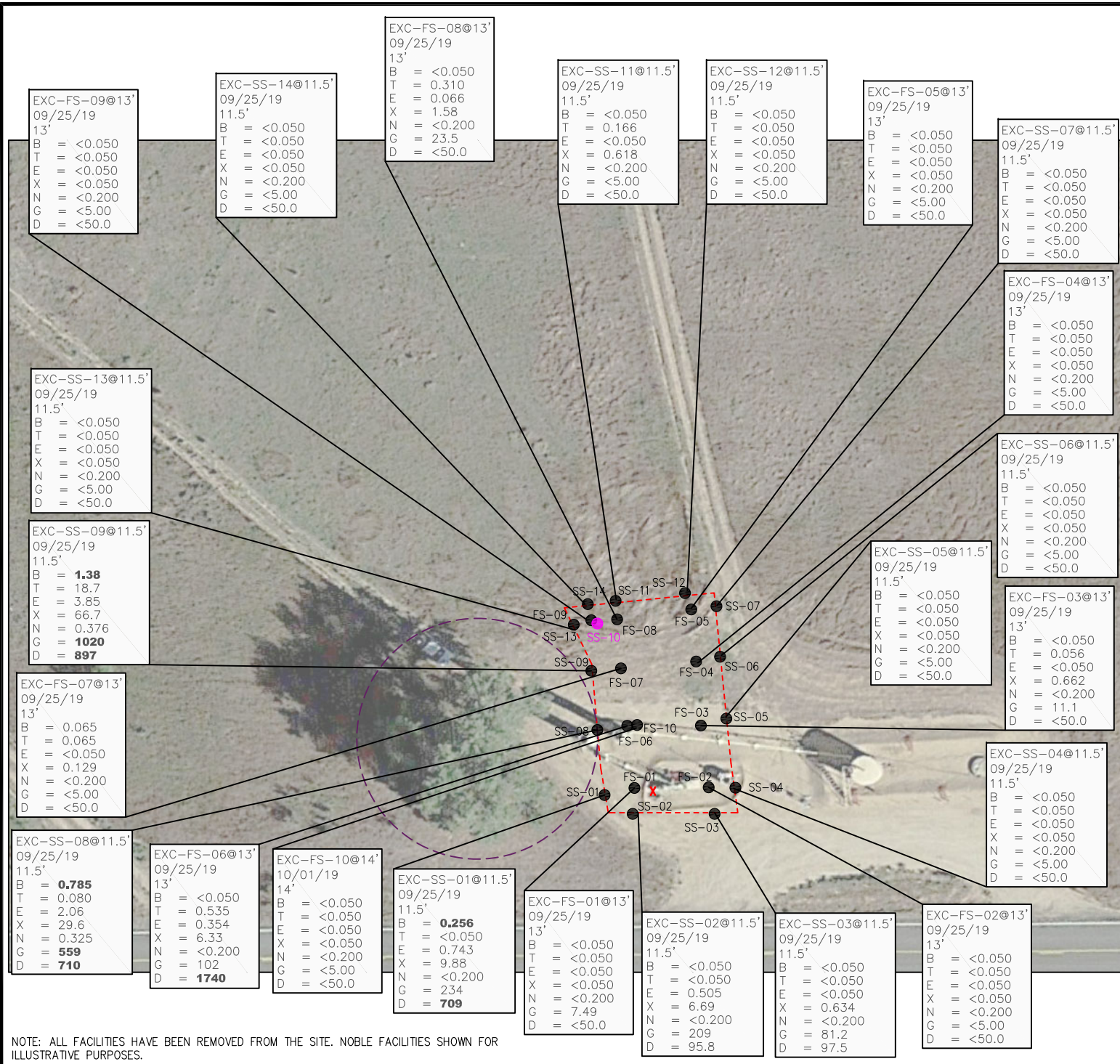
DATE:
02/13/19

FIG. NO.
2

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



- LEGEND**
- X APPROXIMATE RELEASE LOCATIONS
 - - - APPROXIMATE 50-FOOT TREE SETBACK
 - - - APPROXIMATE EXCAVATION EXTENTS
 - APPROXIMATE SOIL SAMPLE LOCATIONS FIELD SCREENED WITH PHOTOIONIZATION DETECTOR (PID)
 - APPROXIMATE EXCAVATION SOIL SAMPLE LOCATIONS SUBMITTED FOR LABORATORY ANALYSIS

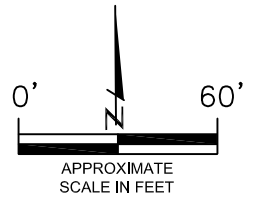
PARAMETERS

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

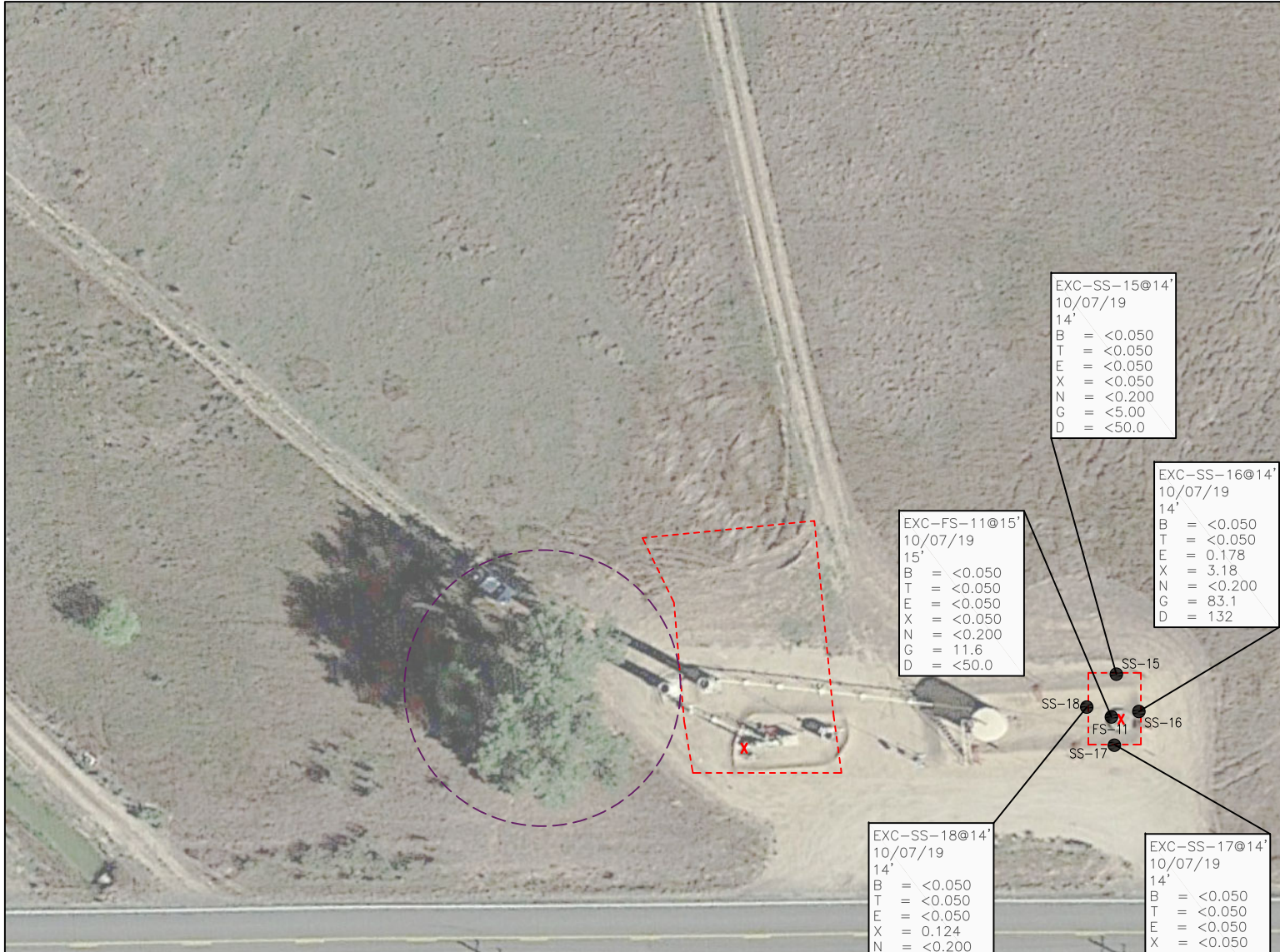


EXCAVATION SOIL ANALYTICAL MAP - PRODUCED WATER LINE
GEMINI B #31-11, 12, 13, 14, 25
FLOW LINE RELEASE
40.348611 / -104.597026
SE1/4 SW1/4 SEC.31 T5N R64W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12355

DATE: 10/22/19
DRAWN BY: AMN
FIG. NO. 3a

EAGLE ENVIRONMENTAL CONSULTING, INC.
8000 N 44th Ave, Wheat Ridge, CO 80033
Ph: 303-433-0479 • F: 303-325-5449

NOTE: ALL FACILITIES HAVE BEEN REMOVED FROM THE SITE. NOBLE FACILITIES SHOWN FOR ILLUSTRATIVE PURPOSES.



- LEGEND**
- X APPROXIMATE RELEASE LOCATIONS
 - - - APPROXIMATE 50-FOOT TREE SETBACK
 - - - APPROXIMATE EXCAVATION EXTENTS
 - APPROXIMATE EXCAVATION SOIL SAMPLE LOCATIONS 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

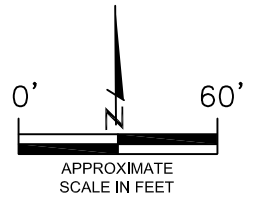
EXC-SS-15@14'
10/07/19
14'
B = <0.050
T = <0.050
E = <0.050
X = <0.050
N = <0.200
G = <5.00
D = <50.0

EXC-SS-16@14'
10/07/19
14'
B = <0.050
T = <0.050
E = 0.178
X = 3.18
N = <0.200
G = 83.1
D = 132

EXC-FS-11@15'
10/07/19
15'
B = <0.050
T = <0.050
E = <0.050
X = <0.050
N = <0.200
G = 11.6
D = <50.0

EXC-SS-18@14'
10/07/19
14'
B = <0.050
T = <0.050
E = <0.050
X = 0.124
N = <0.200
G = 16.0
D = 53.3

EXC-SS-17@14'
10/07/19
14'
B = <0.050
T = <0.050
E = <0.050
X = <0.050
N = <0.200
G = 43.5
D = 201



EXCAVATION SOIL ANALYTICAL MAP - PRODUCED WATER VAULT
 GEMINI B #31-11, 12, 13, 14, 25
 FLOW LINE RELEASE
 40.348611 / -104.597026
 SE1/4 SW1/4 SEC.31 T5N R64W 6PM
 WELD COUNTY, COLORADO
 REMEDIATION # 12355

DATE:
10/22/19
DRAWN BY:
AMN
FIG.
NO. 3b

EAGLE
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8000 W 44th Ave, Wheat Ridge, CO 80033
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NOTE: ALL FACILITIES HAVE BEEN REMOVED FROM THE SITE. NOBLE FACILITIES SHOWN FOR ILLUSTRATIVE PURPOSES.

TABLES

Table 1: Soil Analytical Results Summary

Table 2: Groundwater Analytical Results Summary

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
GEMINI B #31-11, 12, 13, 14, 25
FLOW LINE RELEASE
40.348611 / -104.597026
SE¼ SW¼ SEC.31 T5N R64W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12355

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
MW-01 @ 7.5-10' (40.348598/-104.596953)	10/17/18	7.5-10	<0.050	<0.050	0.116	1.64	<0.200	165	<50.0	NA	NA	NA
MW-01 @ 12.5-15' (40.348598/-104.596953)	10/17/18	12.5-15	0.012	0.011	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
MW-02 @ 7.5-10' (40.348562/-104.597124)	10/17/18	7.5-10	0.008	0.008	0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
MW-02 @ 17.5-20' (40.348562/-104.597124)	10/17/18	17.5-20	0.025	0.023	<0.002	0.007	<0.008	<0.200	<50.0	NA	NA	NA
MW-03 @ 7.5-10' (40.348624/-104.597153)	10/17/18	7.5-20	87.2	533	48.6	749	<0.200	13500	1390	NA	NA	NA
MW-03 @ 15-17.5' (40.348624/-104.597153)	10/17/18	15-17.5	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
MW-04 @ 5-7.5' (40.348710/-104.597192)	10/17/18	5-7.5	0.114	0.377	0.356	5.82	<0.200	186	<50.0	NA	NA	NA
MW-04 @ 10-12.5' (40.348710/-104.597192)	10/17/18	10-12.5	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
MW-05 @ 10-12.5' (40.348709/-104.597051)	10/17/18	10-12.5	<0.002	<0.002	0.008	0.041	<0.008	14.4	<50.0	NA	NA	NA
MW-05 @ 12.5-15' (40.348709/-104.597051)	10/17/18	12.5-15	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
MW-06 @ 10-12.5' (40.348710/-104.596927)	10/17/18	10-12.5	<0.050	<0.050	<0.050	0.272	<0.200	839	151	NA	NA	NA
MW-06 @ 12.5-15' (40.348710/-104.596927)	10/17/18	12.5-15	<0.002	<0.002	<0.002	<0.002	<0.008	0.588	<50.0	NA	NA	NA
SS-01 @ 4-5' (40.348617/-104.597021)	10/17/18	4-5	<0.002	<0.002	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
SB-01 @ 7.5-10' (40.348624/-104.597237)	10/25/18	7.5-10	39.6	244	21.8	342	<2.00	8110	1590	NA	NA	NA
MW-07 @ 10-12' (40.348557/-104.597285)	12/17/18	10-12	0.014	0.004	<0.002	<0.002	<0.008	<0.200	<50.0	NA	NA	NA
MW-08 @ 5-7.5' (40.348649/-104.597266)	12/17/18	5-7.5	1.92	7.35	3.84	57.0	0.398	1220	420	NA	NA	NA
AS-01 @ 10-12.5' (40.348589/-104.597179)	12/17/18	10-12.5	<0.050	0.075	0.134	0.920	<0.200	79.7	<50.0	NA	NA	NA

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
GEMINI B #31-11, 12, 13, 14, 25
FLOW LINE RELEASE
40.348611 / -104.597026
SE¼ SW¼ SEC.31 T5N R64W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12355

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
SVE-01 @ 5-7.5' (40.348607/-104.597219)	12/17/18	5-7.5	0.264	1.18	1.04	12.7	<0.200	269	236	NA	NA	NA
SB-02 @ 7.5-10' (40.348643/-104.597406)	12/17/18	7.5-10	0.002	0.002	<0.002	0.005	<0.008	0.480	<50.0	NA	NA	NA
*N.Wall @ 3'	01/21/19	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50	0.475	8.50	0.459
*E. Wall @ 3'	01/21/19	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50	NA	NA	NA
*S. Wall @ 3'	01/21/19	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50	NA	NA	NA
*W. Wall @ 3'	01/21/19	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50	NA	NA	NA
*Floor @ 6'	01/21/19	6	1.7	6.8	7.4	130	4.7	<50	4200	NA	NA	NA
*Floor @ 14'	01/21/19	14	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50	NA	NA	NA
PH-01 @ 12' (40.345582 / -104.596848)	02/15/19	12	<0.050	<0.050	<0.050	<0.050	<0.200	24.7	<50.0	NA	NA	NA
PH-01 @ 15' (40.345582 / -104.596848)	02/15/19	15	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
PH-02 @ 12' (40.348588 / -104.596697)	02/15/19	12	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
PH-02 @ 15' (40.348588 / -104.596697)	02/15/19	15	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
PH-04 @ 16' (40.348698 / -104.596548)	02/15/19	16	<0.050	<0.050	0.172	1.49	<0.200	164	75.6	NA	NA	NA
PH-05 @ 12' (40.348691 / -104.596748)	02/15/19	12	<0.050	<0.050	<0.050	<0.050	<0.200	116	255	NA	NA	NA
PH-05 @ 16' (40.348691 / -104.596748)	02/15/19	16	<0.050	<0.050	<0.050	0.298	<0.200	97.2	106	NA	NA	NA
PH-06 @ 12' (40.348700 / -104.596932)	02/15/19	12	<0.050	<0.050	<0.050	<0.050	<0.200	9.93	<50.0	NA	NA	NA
PH-06 @ 15' (40.348700 / -104.596932)	02/15/19	15	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
GEMINI B #31-11, 12, 13, 14, 25
FLOW LINE RELEASE
40.348611 / -104.597026
SE¼ SW¼ SEC.31 T5N R64W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12355

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
PH-07 @ 12' (40.348645 / -104.596554)	02/15/19	12	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
PH-07 @ 15' (40.348645 / -104.596554)	02/15/19	15	<0.050	<0.050	<0.050	0.374	<0.200	57.9	<50.0	NA	NA	NA
PH-08 @ 15' (40.348636 / -104.596655)	02/19/19	15	<0.050	<0.050	0.212	3.60	0.310	177	102	NA	NA	NA
PH-09 @ 12' (40.348622 / -104.596832)	02/19/19	12	<0.050	<0.050	<0.050	0.187	<0.200	75.5	126	NA	NA	NA
PH-09 @ 15' (40.348622 / -104.596832)	02/19/19	15	<0.002	<0.002	<0.002	<0.002	<0.008	0.564	<50.0	NA	NA	NA
PH-10 @ 9' (40.348706 / -104.597034)	02/19/19	9	0.357	2.27	0.823	12.8	<0.200	588	228	NA	NA	NA
PH-10 @ 12' (40.348706 / -104.597034)	02/19/19	12	<0.050	<0.050	<0.050	0.150	<0.200	33.9	<50.0	NA	NA	NA
PH-11 @ 6' (40.348709 / -104.597147)	02/19/19	6	0.920	<0.498	5.20	104	<2.00	7840	1970	NA	NA	NA
PH-11 @ 9' (40.348709 / -104.597147)	02/19/19	9	<0.050	<0.050	0.898	10.4	<0.200	627	454	NA	NA	NA
PH-11 @ 12' (40.348709 / -104.597147)	02/19/19	12	1.08	7.33	1.44	31.1	<2.00	1350	535	NA	NA	NA
PH-12 @ 9' (40.348628 / -104.597160)	02/19/19	9	<0.050	<0.050	0.635	7.63	<2.00	619	278	NA	NA	NA
PH-13 @ 12' (40.348549 / -104.597093)	02/19/19	12	<0.002	<0.002	<0.002	<0.002	<0.008	4.63	<50.0	NA	NA	NA
PH-16 @ 12' (40.349041 / -104.597344)	02/20/19	12	<0.050	<0.050	<0.050	<0.050	<0.200	178	142	NA	NA	NA
PH-24 @ 9' (40.348796 / -104.597209)	02/20/19	9	24.8	174	17.8	282	1.14	10500	1250	NA	NA	NA
PH-25 @ 9' (40.348791 / -104.597137)	02/20/19	9	26.1	196	21.9	329	1.41	14200	2380	NA	NA	NA
PH-26 @ 12' (40.348797 / -104.597033)	02/20/19	12	<0.050	<0.050	0.185	0.768	<0.200	366	115	NA	NA	NA

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
GEMINI B #31-11, 12, 13, 14, 25
FLOW LINE RELEASE
40.348611 / -104.597026
SE¼ SW¼ SEC.31 T5N R64W 6PM
WELD COUNTY, COLORADO
REMIEDIATION # 12355

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-01 @ 11.5' (40.3486215194 / -104.597139237)	09/25/19	11.5	0.256	<0.050	0.743	9.88	<0.200	234	709	NA	NA	NA
EXC-SS-02 @ 11.5' (40.3485942121 / -104.597070343)	09/25/19	11.5	<0.050	<0.050	0.505	6.69	<0.200	209	95.8	NA	NA	NA
EXC-SS-03 @ 11.5' (40.3485997832 / -104.597013759)	09/25/19	11.5	<0.050	<0.050	<0.050	0.634	<0.200	81.2	97.5	NA	NA	NA
EXC-SS-04 @ 11.5' (40.3486347053 / -104.596970218)	09/25/19	11.5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-FS-01 @ 13' (40.348614 / -104.597085)	09/25/19	13	<0.050	<0.050	<0.050	<0.050	<0.200	7.49	<50.0	NA	NA	NA
EXC-FS-02 @ 13' (40.348617 / -104.597017)	09/25/19	13	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-05 @ 11.5' (40.348697246 / -104.596982064)	09/30/19	11.5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-06 @ 11.5' (40.348760195 / -104.596995134)	09/30/19	11.5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-07 @ 11.5' (40.34882388 / -104.597005546)	09/30/19	11.5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-08 @ 11.5' (40.348674693 / -104.597149443)	09/30/19	11.5	0.785	0.080	2.06	29.6	0.325	559	710	NA	NA	NA
EXC-SS-09 @ 11.5' (40.348733627 / -104.597162698)	09/30/19	11.5	1.38	18.7	3.85	66.7	0.376	1020	897	NA	NA	NA
EXC-SS-11 @ 11.5' (40.348845704 / -104.597132648)	09/30/19	11.5	<0.050	0.166	<0.050	0.618	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-12 @ 11.5' (40.348853311 / -104.597070372)	09/30/19	11.5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-13 @ 11.5' (40.348826318 / -104.597213838)	09/30/19	11.5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-14 @ 11.5' (40.348863356 / -104.597199521)	09/30/19	11.5	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-FS-03 @ 13' (40.348683 / -104.597022)	09/30/19	13	<0.050	0.056	<0.050	0.662	<0.200	11.1	<50.0	NA	NA	NA
EXC-FS-04 @ 13' (40.348749 / -104.597039)	09/30/19	13	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
GEMINI B #31-11, 12, 13, 14, 25
FLOW LINE RELEASE
40.348611 / -104.597026
SE¼ SW¼ SEC.31 T5N R64W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12355

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-FS-05 @ 13' (40.348810 / -104.597050)	09/30/19	13	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-FS-06 @ 13' (40.348671 / -104.597107)	09/30/19	13	<0.050	0.535	0.354	6.33	<0.200	102	1740	NA	NA	NA
EXC-FS-07 @ 13' (40.348733 / -104.597118)	09/30/19	13	0.065	0.065	<0.050	0.129	<0.200	<5.00	<50.0	NA	NA	NA
EXC-FS-08 @ 13' (40.348809 / -104.597125)	09/30/19	13	<0.050	0.310	0.066	1.58	<0.200	23.5	<50.0	NA	NA	NA
EXC-FS-09 @ 13' (40.348808 / -104.597185)	09/30/19	13	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-FS-10 @ 14' (40.348671 / -104.597107)	10/01/01	14	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-15 @ 14' (40.348705951 / -104.596645238)	10/07/19	14	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
EXC-SS-16 @ 14' (40.348661878 / -104.596607022)	10/07/19	14	<0.050	<0.050	0.178	3.18	<0.200	83.1	132	NA	NA	NA
EXC-SS-17 @ 14' (40.348622581 / -104.596642016)	10/07/19	14	<0.050	<0.050	<0.050	<0.050	<0.200	43.5	201	NA	NA	NA
EXC-SS-18 @ 14' (40.348648714 / -104.596678221)	10/07/19	14	<0.050	<0.050	<0.050	0.124	<0.200	16.0	53.3	NA	NA	NA
EXC-FS-11 @ 15' (-104.596640 / -104.596640)	10/07/19	15	<0.050	<0.050	<0.050	<0.050	<0.200	11.6	<50.0	NA	NA	NA
OB-Composite-01	09/30/19	--	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	57.1	NA	NA	NA
OB-Composite-02	09/30/19	--	<0.050	<0.050	<0.050	<0.050	<0.200	<5.00	<50.0	NA	NA	NA
Backfill-01	10/02/19	--	<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



TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY
GEMINI B #31-11, 12, 13, 14, 25
FLOW LINE RELEASE
40.348611 / -104.597026
SE¼ SW¼ SEC.31 T5N R64W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12355

Sample Location (Latitude/Longitude)	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Table 910-1 Regulatory Limits (µg/L)		5	560	700	1400
MW-01 (40.348598 / -104.596953)	10/19/18	<4.00	<4.00	32.2	563
	01/03/19	1.75	<1.00	<1.00	<1.00
	04/09/19	<1.00	<1.00	<1.00	<1.00
	07/09/19	1.60	<1.00	39.4	373
MW-02 (40.348562 / -104.597124)	10/19/18	<1.00	<1.00	<1.00	<1.00
	01/03/19	<1.00	<1.00	<1.00	<1.00
	04/09/19	<1.00	<1.00	<1.00	<1.00
	07/09/19	<1.00	<1.00	<1.00	<1.00
MW-03 (40.348624 / -104.597153)	10/19/18	11100	8470	<1.00	7610
	01/03/19	8880	668	70.2	1930
	04/09/19	577	<100	<100	<100
	07/09/19	14300	2860	396	5460
MW-04 (40.348710 / -104.597192)	10/19/18	3290	6640	<1.00	5360
	01/03/19	3250	2540	178	3930
	04/09/19	1530	508	<50.0	512
	07/09/19	225	26.7	6.56	66.4
MW-05 (40.348709 / -104.597051)	10/19/18	1.50	5.48	1.80	15.0
	01/03/19	11.2	<1.00	17.8	73.6
	04/09/19	1.62	<1.00	1.50	7.61
	07/09/19	8.36	<1.00	6.60	22.5
MW-06 (40.348710 / -104.596927)	10/19/18	5.26	<1.00	<1.00	4.53
	01/03/19	<1.00	<1.00	<1.00	<1.00
	04/09/19	DES			
	07/09/19	DES			
MW-07 (40.348557 / -104.597285)	01/03/19	<1.00	<1.00	<1.00	<1.00
	04/09/19	<1.00	<1.00	<1.00	<1.00
	07/09/19	<1.00	<1.00	<1.00	<1.00
MW-08 (40.348649 / -104.597266)	01/03/19	720	891	45.6	648
	04/09/19	23.1	20.5	<10.0	<10.0
	07/09/19	783	542	14.9	202
COGCC = Colorado Oil and Gas Conservation Commission µg/L - micrograms per liter Note: Values presented with a less than symbol (<) indicate concentrations were not observed at or above the laboratory reporting limit. Values presented in bold typeface exceed their respective COGCC - Regulatory Limits (Table 910-1).					

ATTACHMENT A

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.

Product Identifier: GYPSUM

Date of Preparation: October 30, 2015

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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)

Product Identifier: GYPSUM

Date of Preparation: October 30, 2015

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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

Date of Preparation: October 30, 2015

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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.

Product Identifier: GYPSUM

Date of Preparation: October 30, 2015

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ATTACHMENT B

Laboratory Analytical Reports

September 26, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Gemini B
#31-11,12,13,14,25**

Project Number - [none]

Attached are your analytical results for Noble - Gemini B #31-11,12,13,14,25 received by Origins Laboratory, Inc. September 25, 2019. This project is associated with Origins project number Y909414-01.

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



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Gemini B #31-11,12,13,14,25

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EXC-SS-01@11.5'	Y909414-01	Soil	September 25, 2019 12:50	09/25/2019 15:40
EXC-SS-02@11.5'	Y909414-02	Soil	September 25, 2019 12:55	09/25/2019 15:40
EXC-SS-03@11.5'	Y909414-03	Soil	September 25, 2019 12:38	09/25/2019 15:40
EXC-SS-04@11.5'	Y909414-04	Soil	September 25, 2019 12:45	09/25/2019 15:40
EXC-FS-01@13'	Y909414-05	Soil	September 25, 2019 12:40	09/25/2019 15:40
EXC-FS-02@13'	Y909414-06	Soil	September 25, 2019 12:35	09/25/2019 15:40

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 - Gemini B #31-11,12,13,14,25

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y909414

Client: Eagle

Client Project ID: Gemini B

Checklist Completed by: JG

Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 9/25/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 12.2 °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"/>		Same Day
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 (> ¼ 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 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 CO ₃ +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 be taken in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

9/25/19
 Date/Time Reviewed

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 - Gemini B #31-11,12,13,14,25

EXC-SS-01@11.5'
9/25/2019 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909414-01 (Soil)

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

Diesel (C10-C28)	709	50.0	mg/kg	1	B912514	KDK	09/25/2019	09/25/2019	
Surrogate: o-Terphenyl	84.8 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	234	5.00	mg/kg	25	B912506	KDK	09/25/2019	09/26/2019	
Benzene	0.256	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.743	0.050	"	"	"	KDK	"	"	
Xylenes, total	9.88	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	110 %	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 - Gemini B #31-11,12,13,14,25

EXC-SS-02@11.5'
9/25/2019 12:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909414-02 (Soil)

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

Diesel (C10-C28)	95.8	50.0	mg/kg	1	B912514	KDK	09/25/2019	09/25/2019	
Surrogate: o-Terphenyl	79.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	209	5.00	mg/kg	25	B912506	KDK	09/25/2019	09/25/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.505	0.050	"	"	"	KDK	"	"	
Xylenes, total	6.69	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	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 - Gemini B #31-11,12,13,14,25

EXC-SS-03@11.5'
9/25/2019 12:38:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909414-03 (Soil)

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

Diesel (C10-C28)	97.5	50.0	mg/kg	1	B912514	KDK	09/25/2019	09/25/2019	
Surrogate: o-Terphenyl	75.9 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	81.2	5.00	mg/kg	25	B912506	KDK	09/25/2019	09/25/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.634	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.5 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	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 - Gemini B #31-11,12,13,14,25

EXC-SS-04@11.5'
9/25/2019 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909414-04 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B912514	KDK	09/25/2019	09/25/2019	U
<i>Surrogate: o-Terphenyl</i>	76.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B912506	KDK	09/25/2019	09/25/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	95.3 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	99.7 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.2 %	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 - Gemini B #31-11,12,13,14,25

EXC-FS-01@13'

9/25/2019 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909414-05 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B912514	KDK	09/25/2019	09/25/2019	U
<i>Surrogate: o-Terphenyl</i>	80.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	7.49	5.00	mg/kg	25	B912506	KDK	09/25/2019	09/25/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

<i>Surrogate: 1,2-Dichloroethane-d4</i>	97.7 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	99.0 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.6 %	70-130			"	"	"	"	

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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

EXC-FS-02@13'

9/25/2019 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909414-06 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B912514	KDK	09/25/2019	09/25/2019	U
<i>Surrogate: o-Terphenyl</i>	81.4 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B912506	KDK	09/25/2019	09/25/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	97.2 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	99.3 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.4 %	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 - Gemini B #31-11,12,13,14,25

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 B9I2506 - EPA 5030 (soil)

Blank (B9I2506-BLK1)

Prepared: 09/25/2019 Analyzed: 09/25/2019

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	106		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	100		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	101		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 - Gemini B #31-11,12,13,14,25

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 B9I2506 - EPA 5030 (soil)

LCS (B9I2506-BS1)

Prepared: 09/25/2019 Analyzed: 09/25/2019

Benzene	0.102	0.002	mg/kg	0.100		102	70-130			
Toluene	0.097	0.002	"	0.100		97.4	70-130			
Ethylbenzene	0.097	0.002	"	0.100		97.4	70-130			
m,p-Xylene	0.181	0.004	"	0.200		90.5	70-130			
o-Xylene	0.096	0.002	"	0.100		95.7	70-130			
Naphthalene	0.090	0.008	"	0.100		90.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		114	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	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 - Gemini B #31-11,12,13,14,25

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 B9I2506 - EPA 5030 (soil)

Matrix Spike (B9I2506-MS1)	Source: Y909395-01			Prepared: 09/25/2019 Analyzed: 09/25/2019						
Benzene	0.100	0.002	mg/kg	0.100	ND	100	70-130			
Toluene	0.094	0.002	"	0.100	0.006	88.1	70-130			
Ethylbenzene	0.096	0.002	"	0.100	ND	96.1	70-130			
m,p-Xylene	0.175	0.004	"	0.200	0.006	84.6	70-130			
o-Xylene	0.094	0.002	"	0.100	0.002	91.8	70-130			
Naphthalene	0.091	0.008	"	0.100	0.020	70.2	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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 - Gemini B #31-11,12,13,14,25

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 B9I2506 - EPA 5030 (soil)

Matrix Spike Dup (B9I2506-MSD1)	Source: Y909395-01			Prepared: 09/25/2019 Analyzed: 09/25/2019						
Benzene	0.099	0.002	mg/kg	0.100	ND	99.4	70-130	0.921	20	
Toluene	0.093	0.002	"	0.100	0.006	87.8	70-130	0.321	20	
Ethylbenzene	0.098	0.002	"	0.100	ND	97.8	70-130	1.73	20	
m,p-Xylene	0.177	0.004	"	0.200	0.006	85.8	70-130	1.43	20	
o-Xylene	0.096	0.002	"	0.100	0.002	93.1	70-130	1.33	20	
Naphthalene	0.099	0.008	"	0.100	0.020	78.9	70-130	9.13	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	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 - Gemini B #31-11,12,13,14,25

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 B9I2514 - EPA 3580										
Blank (B9I2514-BLK1)										
					Prepared: 09/25/2019 Analyzed: 09/25/2019					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Surrogate: o-Terphenyl	24		"	25.0		94.9	50-150			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9I2514 - EPA 3580

LCS (B9I2514-BS1)

Prepared: 09/25/2019 Analyzed: 09/25/2019

Diesel (C10-C28)	994	50.0	mg/kg	1000		99.4	70-130			
Surrogate: o-Terphenyl	55		"	50.0		109	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 - Gemini B #31-11,12,13,14,25

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 B9I2514 - EPA 3580

Matrix Spike (B9I2514-MS1)	Source: Y909414-04			Prepared: 09/25/2019 Analyzed: 09/25/2019						
Diesel (C10-C28)	998	50.0	mg/kg	1000	ND	99.8	70-130			
Surrogate: o-Terphenyl	48		"	50.0		96.8	50-150			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9I2514 - EPA 3580

Matrix Spike Dup (B9I2514-MSD1)	Source: Y909414-04		Prepared: 09/25/2019 Analyzed: 09/25/2019							
Diesel (C10-C28)	975	50.0	mg/kg	1000	ND	97.5	70-130	2.38	35	
Surrogate: o-Terphenyl	47		"	50.0		93.1	50-150			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Gemini B #31-11,12,13,14,25

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.



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

Jen Pellegrini For Noelle Doyle Mathis, President

October 01, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Gemini B
#31-11,12,13,14,15**

Project Number - [none]

Attached are your analytical results for Noble - Gemini B #31-11,12,13,14,15 received by Origins Laboratory, Inc. September 30, 2019. This project is associated with Origins project number Y909514-01.

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



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Gemini B #31-11,12,13,14,15

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EXC-SS-05@11.5'	Y909514-01	Soil	September 30, 2019 9:39	09/30/2019 16:23
EXC-SS-06@11.5'	Y909514-02	Soil	September 30, 2019 9:41	09/30/2019 16:23
EXC-SS-07@11.5'	Y909514-03	Soil	September 30, 2019 9:43	09/30/2019 16:23
EXC-SS-08@11.5'	Y909514-04	Soil	September 30, 2019 9:45	09/30/2019 16:23
EXC-SS-09@11.5'	Y909514-05	Soil	September 30, 2019 9:47	09/30/2019 16:23
EXC-SS-11@11.5'	Y909514-06	Soil	September 30, 2019 9:58	09/30/2019 16:23
EXC-SS-12@11.5'	Y909514-07	Soil	September 30, 2019 10:00	09/30/2019 16:23
EXC-SS-13@11.5'	Y909514-08	Soil	September 30, 2019 13:26	09/30/2019 16:23
EXC-SS-14@11.5'	Y909514-09	Soil	September 30, 2019 13:28	09/30/2019 16:23
EXC-FS-03@13'	Y909514-10	Soil	September 30, 2019 9:03	09/30/2019 16:23
EXC-FS-04@13'	Y909514-11	Soil	September 30, 2019 9:05	09/30/2019 16:23
EXC-FS-05@13'	Y909514-12	Soil	September 30, 2019 9:07	09/30/2019 16:23
EXC-FS-06@13'	Y909514-13	Soil	September 30, 2019 9:09	09/30/2019 16:23
EXC-FS-07@13'	Y909514-14	Soil	September 30, 2019 9:11	09/30/2019 16:23

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 - Gemini B #31-11,12,13,14,15

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EXC-FS-08@13'	Y909514-15	Soil	September 30, 2019 9:13	09/30/2019 16:23
EXC-FS-09@13'	Y909514-16	Soil	September 30, 2019 13:30	09/30/2019 16:23
OB-Composite-01	Y909514-17	Soil	September 30, 2019 14:19	09/30/2019 16:23
OB-Composite-02	Y909514-18	Soil	September 30, 2019 14:25	09/30/2019 16:23

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 - Gemini B #31-11,12,13,14,15

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1909514

page 1 of 2

ORIGINS
 LABORATORY, INC

Client: CALLLE ENV. CONSULTING Project Manager: MARTIN ECKERT III
 Address: 8000 W 44TH AVE Project Name: GEMINI B 31-11,12,13,14,15
WHEAT RIDGE, CO Project Number: 100
 Telephone Number: 303-433-0479 Samples Collected By: 100
 Email Address: MCE3@EAGLE-ENV.COM

Fax: 303.265.9645 | Phone: 303.433.1322 | Denver, CO 80211

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis			Sample Instructions	
				Unpreserved	HCl	HNO ₃	Groundwater	Soil	Air Sample #	Other	Other	6700	6700		6700
EXC-SS-05 E11.5	9-30-19	0939	2	✓				X				X	X	X	
EXC-SS-06 E11.5		0941													
EXC-SS-07 E11.5		0947													
EXC-SS-08 E11.5		0945													
EXC-SS-09 E11.5		0947													
EXC-SS-11 E11.5		0958													
EXC-SS-12 E11.5		1000													
EXC-SS-13 E11.5		1326													
EXC-SS-14 E11.5		1328													
EXC-SS-03 E13		0903													
Relinquished By:	Date:	Time:	Date:	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:	24 Hr <input type="checkbox"/>	48 Hr <input type="checkbox"/>	72 Hr <input type="checkbox"/>	Standard <input type="checkbox"/>
	9-30-19	1623	9-30-19	1623		9-31-19	1623								

ABILL TO JALD 4.1 Temp Received: 4.1 Date Results Needed: NOBLE

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 - Gemini B #31-11,12,13,14,15

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y909514

Client: Eagle

Client Project ID: Gemini B 31-11,12,13,14,15

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 9/30/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.1 °C _____ °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 ≤ 8°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
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 (> ¼ 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 subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+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: (Signature) (Project Manager)

Date/Time Reviewed

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 - Gemini B #31-11,12,13,14,15

EXC-SS-05@11.5'
9/30/2019 9:39:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
<i>Surrogate: o-Terphenyl</i>	76.5 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	93.5 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.1 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-SS-06@11.5'
9/30/2019 9:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-02 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
<i>Surrogate: o-Terphenyl</i>	77.9 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	93.3 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	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 - Gemini B #31-11,12,13,14,15

EXC-SS-07@11.5'
9/30/2019 9:43:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-03 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
<i>Surrogate: o-Terphenyl</i>	76.2 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	94.0 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.4 %	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 - Gemini B #31-11,12,13,14,15

EXC-SS-08@11.5'
9/30/2019 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-04 (Soil)

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

Diesel (C10-C28)	710	50.0	mg/kg	1	B9I3012	JMS	09/30/2019	09/30/2019	
Surrogate: o-Terphenyl	93.0 %	50-150			"	"		"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	559	50.0	mg/kg	250	B9I3009	KDK	09/30/2019	09/30/2019	
Benzene	0.785	0.498	"	"	"	KDK	"	"	
Toluene	0.080	0.050	"	25	"	KDK	"	10/01/2019	
Ethylbenzene	2.06	0.498	"	250	"	KDK	"	09/30/2019	
Xylenes, total	29.6	0.498	"	"	"	KDK	"	"	
Naphthalene	0.325	0.200	"	25	"	KDK	"	10/01/2019	

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"		09/30/2019	
Surrogate: Toluene-d8	96.1 %	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 - Gemini B #31-11,12,13,14,15

EXC-SS-09@11.5'
9/30/2019 9:47:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-05 (Soil)

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

Diesel (C10-C28)	897	50.0	mg/kg	1	B9I3012	JMS	09/30/2019	09/30/2019	
Surrogate: o-Terphenyl	103 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	1020	50.0	mg/kg	250	B9I3009	KDK	09/30/2019	09/30/2019	
Benzene	1.38	0.498	"	"	"	KDK	"	"	
Toluene	18.7	0.498	"	"	"	KDK	"	"	
Ethylbenzene	3.85	0.498	"	"	"	KDK	"	"	
Xylenes, total	66.7	0.498	"	"	"	KDK	"	"	
Naphthalene	0.376	0.200	"	25	"	KDK	"	10/01/2019	
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	09/30/2019	
Surrogate: Toluene-d8	98.0 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.4 %	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 - Gemini B #31-11,12,13,14,15

EXC-SS-11@11.5'
9/30/2019 9:58:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-06 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
<i>Surrogate: o-Terphenyl</i>	84.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	0.166	0.050	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.618	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	93.8 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	96.8 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-SS-12@11.5'
9/30/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-07 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
Surrogate: <i>o</i> -Terphenyl	78.4 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.0 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-SS-13@11.5'
9/30/2019 1:26:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-08 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
Surrogate: <i>o</i> -Terphenyl	81.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-SS-14@11.5'
9/30/2019 1:28:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-09 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
Surrogate: <i>o</i> -Terphenyl	79.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.5 %	70-130			"	"	"	"	

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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-FS-03@13'

9/30/2019 9:03:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-10 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
Surrogate: o-Terphenyl	75.8 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	11.1	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	0.056	0.050	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.662	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.2 %	70-130			"	"	"	"	

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-FS-04@13'

9/30/2019 9:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-11 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
Surrogate: <i>o</i> -Terphenyl	90.4 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	70-130			"	"	"	"	

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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-FS-05@13'

9/30/2019 9:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-12 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
<i>Surrogate: o-Terphenyl</i>	78.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	93.2 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.1 %	70-130			"	"	"	"	

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 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-FS-06@13'

9/30/2019 9:09:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-13 (Soil)

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

Diesel (C10-C28)	1740	50.0	mg/kg	1	B9I3012	JMS	09/30/2019	09/30/2019	
Surrogate: <i>o</i> -Terphenyl	91.4 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	102	5.00	mg/kg	25	B9I3009	KDK	09/30/2019	09/30/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	0.535	0.050	"	"	"	KDK	"	"	
Ethylbenzene	0.354	0.050	"	"	"	KDK	"	"	
Xylenes, total	6.33	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-FS-07@13'

9/30/2019 9:11:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-14 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
Surrogate: <i>o</i> -Terphenyl	80.4 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	0.065	0.050	"	"	"	KDK	"	"	
Toluene	0.065	0.050	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.129	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-FS-08@13'

9/30/2019 9:13:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-15 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
Surrogate: <i>o</i> -Terphenyl	79.7 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	23.5	5.00	mg/kg	25	B913009	KDK	09/30/2019	10/01/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	0.310	0.050	"	"	"	KDK	"	"	
Ethylbenzene	0.066	0.050	"	"	"	KDK	"	"	
Xylenes, total	1.58	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"		09/30/2019	
Surrogate: Toluene-d8	95.1 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	100 %	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 - Gemini B #31-11,12,13,14,15

EXC-FS-09@13'

9/30/2019 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-16 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	09/30/2019	U
<i>Surrogate: o-Terphenyl</i>	79.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	93.9 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.2 %	70-130			"	"	"	"	

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 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

OB-Composite-01
9/30/2019 2:19:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-17 (Soil)

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

Diesel (C10-C28)	57.1	50.0	mg/kg	1	B9I3012	JMS	09/30/2019	10/01/2019	
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Surrogate: <i>o</i> -Terphenyl	79.9 %	50-150			"	"	"	"	
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9I3009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %	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 - Gemini B #31-11,12,13,14,15

OB-Composite-02
9/30/2019 2:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y909514-18 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B913012	JMS	09/30/2019	10/01/2019	U
<i>Surrogate: o-Terphenyl</i>	78.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B913009	KDK	09/30/2019	09/30/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	94.9 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	96.6 %	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 - Gemini B #31-11,12,13,14,15

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 B9I3009 - EPA 5030 (soil)

Blank (B9I3009-BLK1)

Prepared: 09/30/2019 Analyzed: 09/30/2019

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		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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 - Gemini B #31-11,12,13,14,15

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 B9I3009 - EPA 5030 (soil)

LCS (B9I3009-BS1)

Prepared: 09/30/2019 Analyzed: 09/30/2019

Benzene	0.110	0.002	mg/kg	0.100		110	70-130			
Toluene	0.099	0.002	"	0.100		99.2	70-130			
Ethylbenzene	0.096	0.002	"	0.100		95.7	70-130			
m,p-Xylene	0.189	0.004	"	0.200		94.3	70-130			
o-Xylene	0.097	0.002	"	0.100		96.9	70-130			
Naphthalene	0.080	0.008	"	0.100		79.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.9	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 - Gemini B #31-11,12,13,14,15

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 B9I3009 - EPA 5030 (soil)

Matrix Spike (B9I3009-MS1)	Source: Y909488-07			Prepared: 09/30/2019 Analyzed: 09/30/2019						
Benzene	0.108	0.002	mg/kg	0.100	ND	108	70-130			
Toluene	0.093	0.002	"	0.100	ND	92.7	70-130			
Ethylbenzene	0.091	0.002	"	0.100	ND	90.8	70-130			
m,p-Xylene	0.180	0.004	"	0.200	0.021	79.3	70-130			
o-Xylene	0.094	0.002	"	0.100	ND	93.5	70-130			
Naphthalene	0.082	0.008	"	0.100	1.43	NR	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.7	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 - Gemini B #31-11,12,13,14,15

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 B913009 - EPA 5030 (soil)

Matrix Spike Dup (B913009-MSD1)	Source: Y909488-07			Prepared: 09/30/2019 Analyzed: 09/30/2019						
Benzene	0.112	0.002	mg/kg	0.100	ND	112	70-130	3.83	20	
Toluene	0.099	0.002	"	0.100	ND	99.0	70-130	6.57	20	
Ethylbenzene	0.096	0.002	"	0.100	ND	95.7	70-130	5.19	20	
m,p-Xylene	0.189	0.004	"	0.200	0.021	84.2	70-130	5.32	20	
o-Xylene	0.099	0.002	"	0.100	ND	99.0	70-130	5.63	20	
Naphthalene	0.117	0.008	"	0.100	1.43	NR	70-130	35.2	20	QM-07, QR-03
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.2	70-130			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9I3012 - EPA 3580										
Blank (B9I3012-BLK1)										
					Prepared: 09/30/2019 Analyzed: 09/30/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	42		"	50.0		83.5	50-150			

Origins Laboratory, Inc.



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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9I3012 - EPA 3580

LCS (B9I3012-BS1)

Prepared: 09/30/2019 Analyzed: 09/30/2019

Diesel (C10-C28)	1070	50.0	mg/kg	1000		107	70-130			
Surrogate: o-Terphenyl	59		"	50.0		119	50-150			

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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9I3012 - EPA 3580

Matrix Spike (B9I3012-MS1)	Source: Y909514-01			Prepared: 09/30/2019 Analyzed: 09/30/2019						
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	70-130			
Surrogate: o-Terphenyl	50		"	50.0		99.4	50-150			

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B913012 - EPA 3580

Matrix Spike Dup (B913012-MSD1)	Source: Y909514-01			Prepared: 09/30/2019 Analyzed: 09/30/2019						
Diesel (C10-C28)	953	50.0	mg/kg	1000	ND	95.3	70-130	7.21	35	
Surrogate: o-Terphenyl	45		"	50.0		90.2	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 - Gemini B #31-11,12,13,14,15

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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October 02, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Gemini B
#31-11,12,13,14,25**

Project Number - [none]

Attached are your analytical results for Noble - Gemini B #31-11,12,13,14,25 received by Origins Laboratory, Inc. October 01, 2019. This project is associated with Origins project number Y910008-01.

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 - Gemini B #31-11,12,13,14,25

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EXC-FS-10@14'	Y910008-01	Soil	October 1, 2019 9:10	10/01/2019 10:55

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 - Gemini B #31-11,12,13,14,25

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y910008

Client: Eagle

Client Project ID: Gemini B 31-11,12,13,14,25

Checklist Completed by: JG

Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 10 / 01 / 2019

Airbill #: N/A

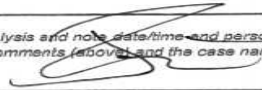
Matrix(s) Received: (Check all that apply): X Soil/Solid Water Other:

Cooler Number/Temperature: 1 / 2.4 °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"/>			
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 (> ¼ 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 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 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) 10/1/19
 Date/Time Reviewed

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 - Gemini B #31-11,12,13,14,25

EXC-FS-10@14'

10/1/2019 9:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y910008-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9J0107	JMS	10/01/2019	10/01/2019	U
Surrogate: <i>o</i> -Terphenyl	78.9 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9J0110	KDK	10/01/2019	10/01/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.0 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0107 - EPA 3580										
Blank (B9J0107-BLK1)										
					Prepared: 10/01/2019 Analyzed: 10/01/2019					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Surrogate: o-Terphenyl	20		"	25.0		78.8	50-150			

Origins Laboratory, Inc.



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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0107 - EPA 3580										
LCS (B9J0107-BS1)										
					Prepared: 10/01/2019 Analyzed: 10/01/2019					
Diesel (C10-C28)	957	50.0	mg/kg	1000		95.7	70-130			
Surrogate: o-Terphenyl	50		"	50.0		99.8	50-150			

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0107 - EPA 3580

Matrix Spike (B9J0107-MS1)	Source: Y910008-01			Prepared: 10/01/2019 Analyzed: 10/01/2019						
Diesel (C10-C28)	958	50.0	mg/kg	1000	ND	95.8	70-130			
Surrogate: o-Terphenyl	37		"	50.0		74.0	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 - Gemini B #31-11,12,13,14,25

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 B9J0107 - EPA 3580

Matrix Spike Dup (B9J0107-MSD1)	Source: Y910008-01		Prepared: 10/01/2019 Analyzed: 10/01/2019							
Diesel (C10-C28)	964	50.0	mg/kg	1000	ND	96.4	70-130	0.649	35	
Surrogate: o-Terphenyl	38		"	50.0		76.5	50-150			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0110 - EPA 5030 (soil)

Blank (B9J0110-BLK1)

Prepared: 10/01/2019 Analyzed: 10/01/2019

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	0.12		"	0.125		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0110 - EPA 5030 (soil)

LCS (B9J0110-BS1)

Prepared: 10/01/2019 Analyzed: 10/01/2019

Benzene	0.097	0.002	mg/kg	0.100		97.2	70-130			
Toluene	0.089	0.002	"	0.100		88.9	70-130			
Ethylbenzene	0.087	0.002	"	0.100		87.0	70-130			
m,p-Xylene	0.172	0.004	"	0.200		86.0	70-130			
o-Xylene	0.086	0.002	"	0.100		85.7	70-130			
Naphthalene	0.101	0.008	"	0.100		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0110 - EPA 5030 (soil)

Matrix Spike (B9J0110-MS1)	Source: Y910008-01			Prepared: 10/01/2019 Analyzed: 10/01/2019						
Benzene	0.119	0.002	mg/kg	0.100	ND	119	70-130			
Toluene	0.106	0.002	"	0.100	ND	106	70-130			
Ethylbenzene	0.104	0.002	"	0.100	ND	104	70-130			
m,p-Xylene	0.205	0.004	"	0.200	ND	102	70-130			
o-Xylene	0.101	0.002	"	0.100	ND	101	70-130			
Naphthalene	0.077	0.008	"	0.100	ND	77.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.3	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 - Gemini B #31-11,12,13,14,25

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 B9J0110 - EPA 5030 (soil)

Matrix Spike Dup (B9J0110-MSD1)	Source: Y910008-01			Prepared: 10/01/2019 Analyzed: 10/01/2019						
Benzene	0.119	0.002	mg/kg	0.100	ND	119	70-130	0.219	20	
Toluene	0.107	0.002	"	0.100	ND	107	70-130	1.31	20	
Ethylbenzene	0.106	0.002	"	0.100	ND	106	70-130	1.68	20	
m,p-Xylene	0.207	0.004	"	0.200	ND	104	70-130	1.18	20	
o-Xylene	0.101	0.002	"	0.100	ND	101	70-130	0.138	20	
Naphthalene	0.106	0.008	"	0.100	ND	106	70-130	30.9	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.7	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 - Gemini B #31-11,12,13,14,25

Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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



October 07, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Gemini B
#31-11,12,13,14,25**

Project Number - [none]

Attached are your analytical results for Noble - Gemini B #31-11,12,13,14,25 received by Origins Laboratory, Inc. October 02, 2019. This project is associated with Origins project number Y910030-01.

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 - Gemini B #31-11,12,13,14,25

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Backfill-01	Y910030-01	Soil	October 2, 2019 10:40	10/02/2019 12:05

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 - Gemini B #31-11,12,13,14,25

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y910030 Client: Eagle
 Checklist Completed by: JG KDK Client Project ID: N/A
 Date/time completed: 10/02/2019 Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 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"/>			
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 (> ¼ 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 subcontracted analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO3, HCl, H2SO4) / (pH >10 for samples preserved with NaAsO2+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.

[Signature]
 Reviewed by (Project Manager)

10/3/19
 Date/Time Reviewed

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 - Gemini B #31-11,12,13,14,25

Backfill-01

10/2/2019 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y910030-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9J0208	JMS	10/02/2019	10/02/2019	U
Surrogate: <i>o</i> -Terphenyl	82.4 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9J0207	KDK	10/02/2019	10/02/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.0 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.3 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0207 - EPA 5030 (soil)

Blank (B9J0207-BLK1)

Prepared: 10/02/2019 Analyzed: 10/02/2019

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		99.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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 - Gemini B #31-11,12,13,14,25

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 B9J0207 - EPA 5030 (soil)

LCS (B9J0207-BS1)

Prepared: 10/02/2019 Analyzed: 10/02/2019

Benzene	0.095	0.002	mg/kg	0.100		95.2	70-130			
Toluene	0.087	0.002	"	0.100		86.8	70-130			
Ethylbenzene	0.081	0.002	"	0.100		81.0	70-130			
m,p-Xylene	0.162	0.004	"	0.200		81.0	70-130			
o-Xylene	0.086	0.002	"	0.100		86.2	70-130			
Naphthalene	0.115	0.008	"	0.100		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	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 - Gemini B #31-11,12,13,14,25

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 B9J0207 - EPA 5030 (soil)

Matrix Spike (B9J0207-MS1)	Source: Y910030-01			Prepared: 10/02/2019 Analyzed: 10/02/2019						
Benzene	0.114	0.002	mg/kg	0.100	ND	114	70-130			
Toluene	0.110	0.002	"	0.100	ND	110	70-130			
Ethylbenzene	0.106	0.002	"	0.100	ND	106	70-130			
m,p-Xylene	0.208	0.004	"	0.200	0.014	97.4	70-130			
o-Xylene	0.104	0.002	"	0.100	ND	104	70-130			
Naphthalene	0.089	0.008	"	0.100	0.136	NR	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.6	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 - Gemini B #31-11,12,13,14,25

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 B9J0207 - EPA 5030 (soil)

Matrix Spike Dup (B9J0207-MSD1)	Source: Y910030-01			Prepared: 10/02/2019 Analyzed: 10/02/2019						
Benzene	0.097	0.002	mg/kg	0.100	ND	97.3	70-130	16.0	20	
Toluene	0.094	0.002	"	0.100	ND	93.9	70-130	16.1	20	
Ethylbenzene	0.092	0.002	"	0.100	ND	92.3	70-130	13.7	20	
m,p-Xylene	0.184	0.004	"	0.200	0.014	85.1	70-130	12.6	20	
o-Xylene	0.089	0.002	"	0.100	ND	88.8	70-130	16.1	20	
Naphthalene	0.104	0.008	"	0.100	0.136	NR	70-130	15.4	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.0	70-130			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0208 - EPA 3580										
Blank (B9J0208-BLK1)										
					Prepared: 10/02/2019 Analyzed: 10/02/2019					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Surrogate: o-Terphenyl	20		"	25.0		79.7	50-150			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0208 - EPA 3580

LCS (B9J0208-BS1)

Prepared: 10/02/2019 Analyzed: 10/02/2019

Diesel (C10-C28)	943	50.0	mg/kg	1000		94.3	70-130			
Surrogate: o-Terphenyl	42		"	50.0		83.4	50-150			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0208 - EPA 3580

Matrix Spike (B9J0208-MS1)	Source: Y910030-01			Prepared: 10/02/2019 Analyzed: 10/02/2019						
Diesel (C10-C28)	937	50.0	mg/kg	1000	ND	93.7	70-130			
Surrogate: o-Terphenyl	45		"	50.0		90.0	50-150			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,25

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 B9J0208 - EPA 3580

Matrix Spike Dup (B9J0208-MSD1)	Source: Y910030-01			Prepared: 10/02/2019 Analyzed: 10/02/2019						
Diesel (C10-C28)	951	50.0	mg/kg	1000	ND	95.1	70-130	1.41	35	
Surrogate: o-Terphenyl	46		"	50.0		92.2	50-150			

Origins Laboratory, Inc.



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

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Gemini B #31-11,12,13,14,25

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.



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.



October 08, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Gemini B
#31-11,12,13,14,15**

Project Number - [none]

Attached are your analytical results for Noble - Gemini B #31-11,12,13,14,15 received by Origins Laboratory, Inc. October 07, 2019. This project is associated with Origins project number Y910118-01.

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 - Gemini B #31-11,12,13,14,15

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EXC-SS-15@14'	Y910118-01	Soil	October 7, 2019 10:51	10/07/2019 13:03
EXC-SS-16@14'	Y910118-02	Soil	October 7, 2019 10:53	10/07/2019 13:03
EXC-SS-17@14'	Y910118-03	Soil	October 7, 2019 10:55	10/07/2019 13:03
EXC-SS-18@14'	Y910118-04	Soil	October 7, 2019 10:43	10/07/2019 13:03
EXC-FS-11@15'	Y910118-05	Soil	October 7, 2019 10:45	10/07/2019 13:03

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 - Gemini B #31-11,12,13,14,15

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y910118

Client: Eagle
 Client Project ID: Gemini B 31,11,12,13,14,15

Checklist Completed by: JG

Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A

Date/time completed: 10/7/2019

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

Cooler Number/Temperature: 1 / 4.5 °C _____ °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"/>			
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 (> ¼ 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 subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with Na2CO3+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) [Signature] Date/Time Reviewed 10/7/19

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 - Gemini B #31-11,12,13,14,15

EXC-SS-15@14'

10/7/2019 10:51:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y910118-01 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9J0705	KDK	10/07/2019	10/07/2019	U
Surrogate: <i>o</i> -Terphenyl	68.5 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9J0711	ZZZ	10/07/2019	10/07/2019	U
Benzene	ND	0.050	"	"	"	ZZZ	"	"	U
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.050	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.050	"	"	"	ZZZ	"	"	U
Naphthalene	ND	0.200	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	97.8 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	94.7 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-SS-16@14'

10/7/2019 10:53:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y910118-02 (Soil)

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

Diesel (C10-C28)	132	50.0	mg/kg	1	B9J0705	KDK	10/07/2019	10/07/2019	
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Surrogate: <i>o</i> -Terphenyl	71.6 %	50-150			"	"	"	"	
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	83.1	5.00	mg/kg	25	B9J0711	ZZZ	10/07/2019	10/07/2019	
Benzene	ND	0.050	"	"	"	ZZZ	"	"	U
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	0.178	0.050	"	"	"	ZZZ	"	"	
Xylenes, total	3.18	0.050	"	"	"	ZZZ	"	"	
Naphthalene	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.3 %	70-130			"	"	"	"	

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-SS-17@14'

10/7/2019 10:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y910118-03 (Soil)

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

Diesel (C10-C28)	201	50.0	mg/kg	1	B9J0705	KDK	10/07/2019	10/07/2019	
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Surrogate: <i>o</i> -Terphenyl	68.1 %	50-150			"	"	"	"	
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	43.5	5.00	mg/kg	25	B9J0711	ZZZ	10/07/2019	10/07/2019	
Benzene	ND	0.050	"	"	"	ZZZ	"	"	U
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.050	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.050	"	"	"	ZZZ	"	"	U
Naphthalene	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.4 %	70-130			"	"	"	"	

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Martin C Eckert III
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 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-SS-18@14'

10/7/2019 10:43:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y910118-04 (Soil)

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

Diesel (C10-C28)	53.3	50.0	mg/kg	1	B9J0705	KDK	10/07/2019	10/07/2019	
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Surrogate: o-Terphenyl	74.3 %	50-150			"	"	"	"	
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	16.0	5.00	mg/kg	25	B9J0711	ZZZ	10/07/2019	10/07/2019	
Benzene	ND	0.050	"	"	"	ZZZ	"	"	U
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.050	"	"	"	ZZZ	"	"	U
Xylenes, total	0.124	0.050	"	"	"	ZZZ	"	"	
Naphthalene	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.1 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.7 %	70-130			"	"	"	"	

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

EXC-FS-11@15'

10/7/2019 10:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y910118-05 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9J0712	KDK	10/07/2019	10/07/2019	U
Surrogate: o-Terphenyl	73.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	11.6	5.00	mg/kg	25	B9J0711	ZZZ	10/07/2019	10/07/2019	
Benzene	ND	0.050	"	"	"	ZZZ	"	"	U
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.050	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.050	"	"	"	ZZZ	"	"	U
Naphthalene	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	70-130			"	"	"	"	

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0711 - EPA 5030 (soil)

Blank (B9J0711-BLK1)

Prepared: 10/07/2019 Analyzed: 10/07/2019

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		95.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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Martin C Eckert III
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 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0711 - EPA 5030 (soil)

LCS (B9J0711-BS1)

Prepared: 10/07/2019 Analyzed: 10/07/2019

Benzene	0.102	0.002	mg/kg	0.100		102	70-130			
Toluene	0.097	0.002	"	0.100		97.1	70-130			
Ethylbenzene	0.093	0.002	"	0.100		93.4	70-130			
m,p-Xylene	0.186	0.004	"	0.200		93.0	70-130			
o-Xylene	0.097	0.002	"	0.100		97.5	70-130			
Naphthalene	0.094	0.008	"	0.100		94.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.4	70-130			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0711 - EPA 5030 (soil)

Matrix Spike (B9J0711-MS1)	Source: Y910118-01			Prepared: 10/07/2019 Analyzed: 10/07/2019						
Benzene	0.085	0.002	mg/kg	0.100	ND	84.7	70-130			
Toluene	0.082	0.002	"	0.100	ND	81.6	70-130			
Ethylbenzene	0.082	0.002	"	0.100	ND	81.7	70-130			
m,p-Xylene	0.162	0.004	"	0.200	0.014	74.1	70-130			
o-Xylene	0.081	0.002	"	0.100	ND	81.4	70-130			
Naphthalene	0.069	0.008	"	0.100	ND	69.0	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.6	70-130			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0711 - EPA 5030 (soil)

Matrix Spike Dup (B9J0711-MSD1)	Source: Y910118-01			Prepared: 10/07/2019 Analyzed: 10/07/2019						
Benzene	0.064	0.002	mg/kg	0.100	ND	64.2	70-130	27.5	20	QM-07, QR-03
Toluene	0.063	0.002	"	0.100	ND	63.4	70-130	25.1	20	QM-07, QR-03
Ethylbenzene	0.064	0.002	"	0.100	ND	64.5	70-130	23.6	20	QM-07, QR-03
m,p-Xylene	0.129	0.004	"	0.200	0.014	57.3	70-130	23.1	20	QM-07, QR-03
o-Xylene	0.062	0.002	"	0.100	ND	62.0	70-130	27.1	20	QM-07, QR-03
Naphthalene	0.074	0.008	"	0.100	ND	74.0	70-130	7.02	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.3	70-130			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0712 - EPA 3580										
Blank (B9J0712-BLK1)										
					Prepared: 10/07/2019 Analyzed: 10/07/2019					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Surrogate: o-Terphenyl	23		"	25.0		91.5	50-150			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0712 - EPA 3580

LCS (B9J0712-BS1)

Prepared: 10/07/2019 Analyzed: 10/07/2019

Diesel (C10-C28)	823	50.0	mg/kg	1000		82.3	70-130			
Surrogate: o-Terphenyl	37		"	50.0		74.1	50-150			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0712 - EPA 3580

Matrix Spike (B9J0712-MS1)	Source: Y910122-01			Prepared: 10/07/2019 Analyzed: 10/07/2019						
Diesel (C10-C28)	808	50.0	mg/kg	1000	ND	80.8	70-130			
Surrogate: o-Terphenyl	41		"	50.0		82.4	50-150			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Gemini B #31-11,12,13,14,15

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 B9J0712 - EPA 3580

Matrix Spike Dup (B9J0712-MSD1)	Source: Y910122-01			Prepared: 10/07/2019 Analyzed: 10/07/2019						
Diesel (C10-C28)	800	50.0	mg/kg	1000	ND	80.0	70-130	0.974	35	
Surrogate: o-Terphenyl	39		"	50.0		78.8	50-150			

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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Gemini B #31-11,12,13,14,15

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.

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