June 17, 2024
Kleinfelder Project No. 20231969.001A

Mr. Chris Patterson
Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

SUBJECT: **Site Investigation Report**
Scout Energy Management, LLC
Orphan Location Closure
Remediation Project Number: 24238
Equity AC McLaughlin Orphan 200 Pad
Rio Blanco County, Colorado

Dear Mr. Patterson:

Kleinfelder Inc. (Kleinfelder) performed soil sampling activities at the Equity AC McLaughlin Orphan 200 location in Rio Blanco County, Colorado under contract by Scout Energy Management LLC (Scout). Enclosed is the site investigation report for this effort.

Please do not hesitate to contact me at (970) 309-6553 or by email at JVeith@Kleinfelder.com should you have questions or concerns.

Respectfully submitted,
KLEINFELDER, INC.

Jordan Veith

Jordan Veith
Project Manager I

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

SITE INVESTIGATION REPORT
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURE
REMEDIATION PROJECT NUMBER: 24238
EQUITY AC McLAUGHLIN ORPHAN 200 PAD
RIO BLANCO COUNTY, COLORADO

KLEINFELDER PROJECT NO. 20231969.001A

June 17, 2024

A Report Prepared for:

Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

SITE INVESTIGATION REPORT
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURE
REMEDIATION PROJECT NUMBER: 24238
EQUITY AC McLAUGHLIN ORPHAN 200 PAD
RIO BLANCO COUNTY, COLORADO

Prepared by:

Trevor Lakin
Environmental Scientist

Reviewed by:

Jordan Veith
Project Manager I

KLEINFELDER
707 17th Street, Suite 3000
Denver, Colorado 80202
P|303.237.6601
F|303.237.6602

June 17, 2024
Kleinfelder Project No. 20231969.001A

Contents **Page**

FIGURES

TABLES

APPENDICES

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

SITE INVESTIGATION REPORT
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURE
REMEDIATION PROJECT NUMBER: 24238
EQUITY AC McLAUGHLIN ORPHAN 200 PAD
RIO BLANCO COUNTY, COLORADO

1 INTRODUCTION

This document was prepared by Kleinfelder Inc. (Kleinfelder) on behalf of Scout Energy Management, LLC (Scout) to provide documentation of recent sampling support services conducted at the Equity AC McLaughlin Orphan 200 Pad in Rio Blanco County, Colorado (**Figure 1**).

Kleinfelder has been contracted by Scout to perform soil sampling support services to provide necessary information to complete the Colorado Energy and Carbon Management Commission (ECMC) Form 27 for their orphan locations within the Piceance Basin. Scout proposed to collect soil samples from four (4) different locations at the Equity AC McLaughlin Orphan 200 Pad and to compare them to ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) to determine the extent of the potential impacts prior to abandonment and final reclamation.

In June 2022, Scout acquired the Whiting assets in this area and took ownership of the orphan locations formerly owned and maintained by Whiting. Prior to Scout's acquisition of Whiting, Whiting submitted approved ECMC Form 27 (Site Investigation and Remediation Workplans – Document #403046027, 403533124, 403533149) as a notification to abandon the Equity AC McLaughlin Orphan 200 (API #103-12563) orphan wellhead and associated flowlines (refer to **Appendix A**). Scout proposed the field screening and collection of soil samples at the area of concern (AOC), the wellhead, and the tailings pile. Soil samples were analyzed by Pace Analytical National Laboratory (Pace) and the results are reported herein.

2 SITE LOCATION AND GEOLOGIC SETTING

The Equity AC McLaughlin Orphan 200 Pad is located within the Piceance Basin in Rio Blanco County, Colorado (NWNW, Section 5, Township 1 North, Range 102 West) (**Figure 1**). The Piceance Basin is a geologic structural basin consisting of sandstones and siltstones, containing reserves of coal, natural gas, and oil shale.

No surface water or groundwater were encountered during Kleinfelder's soil sampling activities. Adjacent land was observed to be rangeland. The general soil type within the project area was classified based on Kleinfelder's field observations using the Unified Soil Classification System (USCS) and were observed to be silty gravels, gravel-sand-silt mixtures. Topographical information is provided on **Figure 1**.

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

3 FIELD ACTIVITIES

As prescribed within the approved ECMC Form 27 Site Investigation and Remediation Workplan, Kleinfelder performed the following field activities at the Equity AC McLaughlin Orphan 200 Pad on August 8, 2022, November 1, 2022, June 29, 2023, August 1, 2023, and November 15, 2023**:**

August 8, 2022

- Field screened all soil sample locations using olfactory and visual observations and photoionization detector (PID);
- Collected one (1) grab soil sample from the excavated AOC footprint at 3 feet below ground surface (bgs);
- Collected one (1) grab soil sample from the tailings pile associated with the AOC;
- Collected one (1) 5-point composite soil sample from the tailings pile associated with the AOC; and
- Shipped site soil samples to Pace to analyze for the contaminants of concern listed within ECMC Table 915-1.

November 1, 2022

- Field screened all soil sample locations using olfactory and visual observations and PID;
- Collected one (1) grab soil sample from the excavated AOC footprint at 5 feet below bgs;
- Collected one (1) grab soil sample from the tailings pile associated with the AOC; and
- Shipped soil samples to Pace to analyze for sodium adsorption ratio (SAR) only.

June 29, 2023

- Field screened all soil sample locations using olfactory and visual observations and PID;
- Collected one (1) grab soil sample adjacent to the Equity AC McLauglin Orphan 200 wellhead at 4 feet bgs;
- Shipped site soil samples to Pace to analyze for the contaminants of concern listed within ECMC Table 915-1, minus polyaromatic hydrocarbons (PAHs).

August 1, 2023

- Field screened all soil sample locations using olfactory and visual observations and PID;
- Collected one (1) grab soil sample from the excavated AOC footprint at 5 feet below bgs;
- Collected one (1) grab soil sample from the tailings pile associated with the AOC; and
- Shipped soil samples to Pace to analyze for SAR only.

November 15, 2023

- Field screened all soil sample locations using olfactory and visual observations and PID;
- Collected one (1) grab soil sample from the excavated AOC footprint at 5 feet below bgs;
- Collected one (1) grab soil sample adjacent to the Equity AC McLauglin Orphan 200 wellhead at 4 feet bgs;
- Shipped AOC soil sample to Pace to analyze for SAR only; and
- Shipped wellhead soil sample to Pace to analyze for SAR, Total Petroleum Hydrocarbons (TPH), Electrical Conductivity (EC).

Prior to Kleinfelder's soil screening and sampling activities, Scout identified all soil sample locations. Soil samples were collected from a stainless-steel hand trowel and placed into laboratory-supplied, 9-ounce jars with Teflon lids per sample. Each sample was collected directly from the hand trowel from the appropriate depth and placed into the glass jars. The samples were immediately placed on ice in a cooler. Standard chain-of-custody (COC) procedures were used during sampling and transportation to Pace in Mount Juliet, Tennessee (via FEDEX). Site soil samples were analyzed for contaminants of concern listed in ECMC Table 915-1. Kleinfelder used an EOS Arrow 100 Submeter Global Navigation Satellite System (GNSS) receiver to record latitude and longitude at the sample location. Sample locations are shown on **Figure 2.**

Sampling equipment (i.e., stainless-steel hand trowel, soil sampler, etc.) was washed with a solution of Liquinox® detergent, rinsed with tap water, and then distilled water between samples. During soil sampling activities, Kleinfelder documented staining and/or odor observations, if any, and screened the soil with a PID. Kleinfelder placed the soil into a Ziploc® plastic bag directly from the hand trowel for screening with the PID. The PID is owned and maintained by Kleinfelder. Prior to use, Kleinfelder calibrated the PID, which passed calibration. Soil sample conditions and locations are provided in **Table 1**.

4 RESULTS

Kleinfelder observed soil conditions within the orphan location areas during the soil sampling activities. Hydrocarbon odors and soil staining were not observed at any of the sample locations, excluding the wellhead sample collected on June 29, 2023. PID readings from all sample locations were 0 parts per million (ppm), excluding the wellhead sample (313 ppm) collected on June 29, 2023. **Table 1** summarizes the samples and associated field observations.

Excluding SAR and TPH, the sample analytical results did not exceed the ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) and background levels.

- SAR was detected at concentrations above both the ECMC Table 915-1 cleanup concentrations and background levels at the AOC, tailings pile, and wellhead.
- TPH was detected at concentrations above both the ECMC Table 915-1 cleanup concentrations at the wellhead.

Additional discrete soil samples were collected from the AOC, tailings pile, and wellhead on August 1, 2023 and November 15, 2023 and analyzed for SAR and TPH only.

- Both SAR and TPH were detected at concentrations below the ECMC Table 915-1 cleanup concentrations at the AOC, tailings pile, and wellhead during these subsequent sampling events.

Analytical results are summarized in **Table 2** and were compared to ECMC Table 915-1 RSSLs as requested by Scout. Site assessment and background laboratory reports are provided in **Appendix B** and **C**. Sample locations are shown on **Figure 2.**

5 CONCLUSIONS AND RECOMMENDATIONS

Results from the discrete soil samples collected from the AOC, tailings pile, and wellhead on August 22, 2022, November 1, 2022, June 29, 2023, and August 1, 2023, exhibited either SAR or TPH exceedances greater than ECMC Table 915-1 and background levels.

To address these exceedances, Scout processed the tailings piles though a soil shredder with a combination of soil and or/amendments at a ratio necessary to achieve ECMC Table 915-1 Cleanup Concentrations. Kleinfelder collected additional discrete soil samples from the AOC, tailings pile, and wellhead on August 1, 2023, and November 15, 2023. Both SAR and TPH were detected at concentrations below the ECMC Table 915-1 cleanup concentrations in these subsequent samples.

Site soil conditions and soil sample laboratory analytical results are provided in **Table 1** and **Table 2.** Based on the results of the assessment of the soil conditions at the AOC, wellhead, and tailings pile, the location does not demonstrate any exceedances for ECMC Table 915-1. Therefore, Kleinfelder recommends Scout request a No Further Action (NFA) approval associated with the site investigation or remediation activities at the Equity AC McLaughlin Orphan 200 Pad.

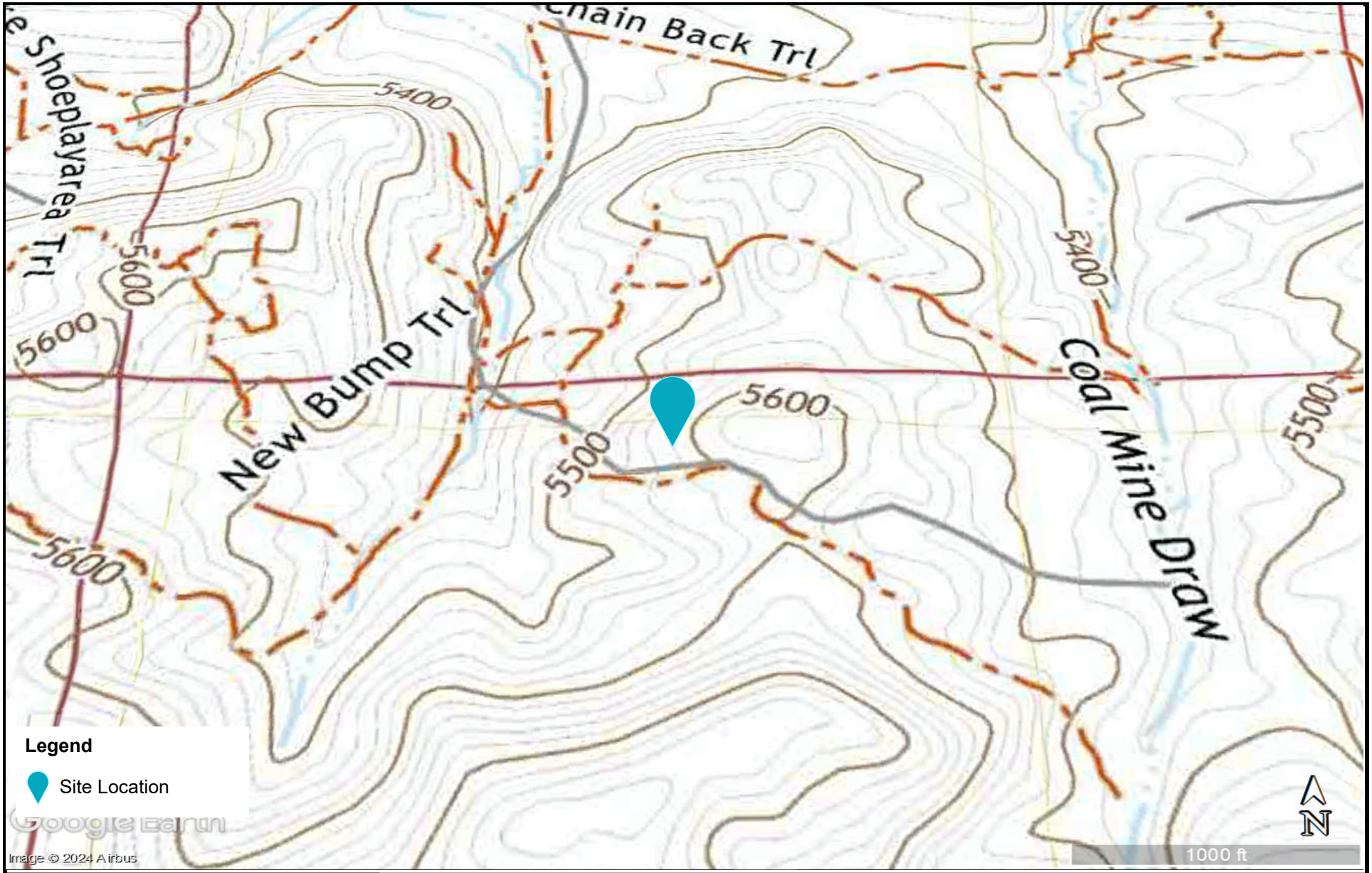
6 LIMITATIONS

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies, including subsurface studies or field tests, should be performed to reduce uncertainties. Acceptance of this report will indicate that Scout has reviewed the document and determined that it does not need or want a greater level of service than provided.

During the course of the performance of Kleinfelder's services, hazardous materials may have been discovered. Kleinfelder assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials. Nothing contained in this report should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, or generator, or person who arranges for disposal, transport, storage, or treatment of hazardous materials within the meaning of any governmental statute, regulation, or order. Scout is solely responsible for directing notification of all governmental agencies, and the public at large, of the existence, release, treatment, or disposal of any hazardous materials observed at the project site, either before or during performance of Kleinfelder's services. Scout is responsible for directing all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder’s services.

FIGURES

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602



KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT NO.	20231969.001A
DRAWN:	3/14/2024
DRAWN BY:	T. Lakin
CHECKED BY:	J. Veith
FILE NAME:	Topographical Map.pub

Topographical Map

Scout Energy Management LLC
Remediation Project Number: 24238
Equity AC McLaughlin Orphan 200 Pad
NWNW Sec. 5 T1N R102W
Rio Blanco County, Colorado

FIGURE

1

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT NO.	20231969.001A
DRAWN:	3/14/2024
DRAWN BY:	T. Lakin
CHECKED BY:	J. Veith
FILE NAME:	Sample Map.pub

Sample Location Map

Scout Energy Management, LLC
Remediation Project Number: 24238
Equity AC McLaughlin Orphan 200 Pad
NWNW Sec. 5 T1N R102W
Rio Blanco County, Colorado

FIGURE

2

TABLES

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

TABLE 1 - SOIL SAMPLE SUMMARY
SCOUT ENERGY MANAGEMENT, LLC
EQUITY AC MCLAUGHLIN ORPHAN 200 PAD
NWNW Sec. 5 T1N R102W
RIO BLANCO COUNTY, COLORADO

Sample ID	Sample Matrix	Latitude	Longitude	PID Reading (PPM)	Hydrocarbon Odor Detected (Y/N)	Soil Staining Observed (Y/N)	Comments
20220822_AC McLaughlin 200_TP_COMP	Soil	40.089109	-108.873843	< 1	N	N	None
20220822_AC McLaughlin 200_TP_DIS	Soil	40.089109	-108.873843	< 1	N	N	None
20220822_AC McLaughlin 200_AOC@3	Soil	40.089214	-108.873628	< 1	N	N	None
20221101_AC McLaughlin 200_AOC@5	Soil	40.089214	-108.873628	< 1	N	N	None
20221101_AC McLaughlin 200_TP_DIS	Soil	40.089109	-108.873843	< 1	N	N	None
20230629_AC McLaughlin 200_WH@4	Soil	40.08918235	-108.873883	313	Y	Y	None
20230801_AC McLaughlin 200_AOC@5	Soil	40.08919781	-108.8736135	< 1	N	N	PID not measured
20230801_AC McLaughlin 200_TP_DIS	Soil	40.08907786	-108.873795	< 1	N	N	PID not measured
20231115_AC McLaughlin 200_AOC@5	Soil	40.08919781	-108.873614	< 1	N	N	None
20231115_AC McLaughlin 200_WH@4	Soil	40.08918235	-108.873883	< 1	N	N	None

Notes:
PID = Photo-ionization Detector
PPM = Parts per million

TABLE 2- SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
REMEDIATION PROJECT #24238
EQUITY AC MCLAUGHLIN ORPHAN 200 PAD
RIO BLANCO COUNTY, COLORADO

Location		AC McLauglin 200									
Sample Date		8/22/2022			11/1/2022		6/29/2023	8/1/2023		11/15/2023	
Contaminant of Concern	**ECMC Table 915-1 RSSLs Cleanup Concentration (mg/kg unless otherwise noted)**	**20220822_AC McLaughlin 200_TP_COMP**	**20220822_AC McLaughlin 200_TP_DIS**	**20220822_AC McLaughlin 200_AOC@3ft**	**20221101_AC McLaughlin 200_AOC@5ft**	**20221101_AC McLaughlin 200_TP_DIS**	**20230629-MCLAUGHLIN 200-WH@4FT**	**20230801-AC MCLAUGHLIN200-AOC@5**	**20230801-AC MCLAUGHLIN200-TP-DIS**	**20231115-AC MCLAUGHLIN 200-AOC@5**	**20231115-AC MCLAUGHLIN 200-WH@4**
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	1.7243	21.5323	36.4595	NM	NM	1150.95	NM	NM	NM	2.545
GRO (C6-C10)		0.0843 J	0.0723 J	0.0595 J	NM	NM	1.95	NM	NM	NM	0.111
DRO (C10-C28)		U	6.96	15.4	NM	NM	769	NM	NM	NM	1.74 J
MRO (C28-36)		1.64 B J	14.5	21.0	NM	NM	380	NM	NM	NM	0.694 J
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	3.390	4.540	7.450	NM	NM	5.830	NM	NM	NM	3.210
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	4.08	10.3	15.3	14.1	13.1	8.79	17.6	5.77	5.84	0.922
pH (by saturated paste method)	6–8.3 pH units	7.78 T8	7.99 T8	7.80 T8	NM	NM	8.29 T8	NM	NM	NM	NM
Boron (hot water soluble soil extract)	2 mg/L	1.01	1.40	0.825	NM	NM	0.722	NM	NM	NM	NM
Organic Compounds in Soils											
benzene	1.2	U	U	U	NM	NM	<0.000467 U	NM	NM	NM	NM
toluene	490	U	U	0.00225 J	NM	NM	0.00178 B J	NM	NM	NM	NM
ethylbenzene	5.8	U	U	U	NM	NM	0.000775 J	NM	NM	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	U	U	U	NM	NM	<0.000880 U	NM	NM	NM	NM
1,2,4-trimethylbenzene	30	U	U	U	NM	NM	0.00188 J	NM	NM	NM	NM
1,3,5-trimethylbenzene	27	U	U	U	NM	NM	0.0793	NM	NM	NM	NM
acenaphthene	360	U	U	U	NM	NM	NM	NM	NM	NM	NM
anthracene	1800	U	U	U	NM	NM	NM	NM	NM	NM	NM
benz(a)anthracene	1.1	U	U	U	NM	NM	NM	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	U	U	0.00237 J	NM	NM	NM	NM	NM	NM	NM
benzo(k)fluoranthene	11	U	U	U	NM	NM	NM	NM	NM	NM	NM
benzo(a)pyrene	0.11	U	U	U	NM	NM	NM	NM	NM	NM	NM
chrysene	110	U	U	U	NM	NM	NM	NM	NM	NM	NM
dibenz(a,h)anthracene	0.11	U	U	U	NM	NM	NM	NM	NM	NM	NM
fluoranthene	240	0.00242 J	U	0.00327 J	NM	NM	NM	NM	NM	NM	NM
fluorene	240	U	U	U	NM	NM	NM	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	U	U	U	NM	NM	NM	NM	NM	NM	NM
pyrene	180	0.00223 J	U	0.00473 J	NM	NM	NM	NM	NM	NM	NM
1-methylnaphthalene	18	U	U	0.0118 J	NM	NM	NM	NM	NM	NM	NM
2-methylnaphthalene	24	U	U	0.0110 J	NM	NM	NM	NM	NM	NM	NM
naphthalene	2	U	U	0.00629 J	NM	NM	NM	NM	NM	NM	NM
Metals in Soils											
arsenic	0.68	4.81	8.00	7.37	NM	NM	7.50	NM	NM	NM	NM
barium	15000	93.2	126	162	NM	NM	112	NM	NM	NM	NM
cadmium	71	0.221 J	0.347 J	0.765	NM	NM	0.215 J	NM	NM	NM	NM
chromium (VI)	0.3	U	0.272 J	U	NM	NM	0.260 J	NM	NM	NM	NM
copper	3100	8.92	13.9	15.2	NM	NM	9.57	NM	NM	NM	NM
lead	400	8.77	15.2	14.8	NM	NM	13.2	NM	NM	NM	NM
nickel	1500	11.7	18.8	20.2	NM	NM	13.8	NM	NM	NM	NM
selenium	390	U	0.965 J	0.799 J	NM	NM	1.36 J	NM	NM	NM	NM
silver	390	U	U	U	NM	NM	0.0887 J	NM	NM	NM	NM
zinc	23000	43.5	70.3	71.4	NM	NM	63.5	NM	NM	NM	NM

See next page for additional details on table footnotes

Greater than Table 915-1 Standards
Greater than Table 915-1 Standards, but less than adjusted standards (Highest background level is the adjusted standard for inorganics; 1.25X highest background level for metals).

AOC = Area of Concern
B = The same analyte is found in the associated blank
COMP = Composite Sample
DIS = Discrete Sample
ft = feet
FWP = Fresh Water Pond
GS = Ground Surface
J = The identification of the analyte is acceptable; the reported value is an estimate
J3 = The associated batch QC was outside the established quality control range for precision
ND = Not Detected
NM = Not Measured
O1 = The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference
P1 = RPD value not applicable for sample concentrations less than 5 times the reporting limit
U = Not detected at the Reporting Limit (or MDL where applicable)
T8 = Sample(s) received past/too close to holding time expiration
TP = Tailings Pile
WH = Wellhead

APPENDIX A
ECMC FORM 27 SITE INVESTIGATION AND REMEDIATION WORKPLANS

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

FORM
27
Rev 4/21

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number: 403046027
Receive Date: 05/11/2022
Report taken by: John Heil

Site Investigation and Remediation Workplan (Initial Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.
This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.
This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.
Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATON

Name of Operator: WHITING OIL & GAS CORPORATION Operator No: 96155
Address: 1700 LINCOLN STREET SUITE 4700
City: DENVER State: CO Zip: 80290
Contact Person: Kyle Waggoner Email: kyle.waggoner@whiting.com

Phone Numbers
Phone: (432) 6616647
Mobile: (432) 6616647

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24238 Initial Form 27 Document #: 403046027

PURPOSE INFORMATION

- [ ] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [ ] Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- [ ] Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- [ ] Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- [ ] Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- [ ] Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- [ ] Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- [ ] Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- [x] Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- [ ] Rule 913.g: Changes of Operator.
- [ ] Rule 915.b: Request to leave elevated inorganics in situ.
- [ ] Other:

SITE INFORMATION

No Multiple Facilities

Facility Type: WELL Facility ID: API #: 103-12563 County Name: RIO BLANCO
Facility Name: Equity AC McLaughlin Orphan 200 Latitude: 40.089180 Longitude: -108.873864
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NWNW Sec: 5 Twp: 1N Range: 102W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Livestock Grazing
Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No
Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
- [ ] Produced Water
- [ ] Oil
- [ ] Condensate
- [ ] Drilling Fluids
- [X] Drill Cuttings
- [ ] **Other E&P Waste**
- [ ] Workover Fluids
- [ ] Tank Bottoms
- [ ] Pigging Waste
- [ ] Rig Wash
- [ ] Spent Filters
- [ ] Pit Bottoms
- [ ] Other (as described by EPA)
- [ ] **Non-E&P Waste**

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	Unknown	Field Screening via PID and visual

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

In accordance with Rule 911.a we are submitting this Form 27 to close the orphan well pad. Historically in this area we have occasionally encountered what appears to be historical drill cuttings remaining adjacent to the wells. This Form 27 workplan is being submitted to address the cuttings if encountered.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Whiting has collected >70 discrete confirmation samples and analyzed them for the full Table 915-1 Cleanup Concentrations during the assessment and remediation at multiple indistinguishable orphan well sites in the same field. Upon review of this data the PAH by EPA Method 8270D results consistently (in over 70+ samples) found impacts from non-detect to significantly lower than Table 915-1 cleanup concentration levels (see attached cumulative Confirmation Sample Result Table). Based upon these results Whiting is proposing a Modified Table 915-1 analysis suite that does not include the PAH analytes as it is not a constituent of concern at these sites. All other Table 915-1 analytes will be included in the Modified Table 915-1 Cleanup Concentrations. (see continued sampling plan under comments…)

Proposed Groundwater Sampling

[ ] Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Proposed Surface Water Sampling

[ ] Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

[ ] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0

Number of soil samples exceeeding 915-1 _____

Was the areal and vertical extent of soil contamination delineated? _____

Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____

_____ Highest concentration of SAR _____

BTEX > 915-1 _____

Vertical Extent > 915-1 (in feet) _____

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) _____

Number of groundwater monitoring wells installed _____

Number of groundwater samples exceeding 915-1 _____

_____ Highest concentration of Benzene (µg/l) _____

_____ Highest concentration of Toluene (µg/l) _____

_____ Highest concentration of Ethylbenzene (µg/l) _____

_____ Highest concentration of Xylene (µg/l) _____

_____ Highest concentration of Methane (mg/l) _____

Surface Water

0 Number of surface water samples collected

_____ Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) _____ Volume of liquid waste (barrels) _____

☐ Is further site investigation required?

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

If encountered the cuttings will be removed via a combination of mechanical and hand excavation in an effort to minimize disturbing the surrounding vegetation. The removed cuttings will be staged onsite.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

If encountered the cuttings (or any impacted material) will be staged and shredded onsite adjacent to the wells. The cuttings will then be processed through a soil shredder with a combination of soil and/or amendments at a ratio necessary to achieve Modified Table 915-1 Cleanup Concentrations.

Soil Remediation Summary

☐ **In Situ**

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

☐ **Ex Situ**

_____ Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Excavate and onsite remediation

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other

☐ **Request Alternative Reporting Schedule:**

☐ Semi-Annually ☐ Annually ☐ Other

Rule 913.e:
After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report

☐ Other _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards _____

E&P waste (solid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility:

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

The location will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Seeding of the disturbed area will be performed in accordance with its intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance.

Is the described reclamation complete? _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim ☐ Final

Did the Surface Owner provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/11/2022

Proposed site investigation commencement. _____

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

Proposed date of completion of Remediation. _____

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

(Sampling plan continued) … If cuttings or other impacts are discovered via field screening are encountered a minimum of 1 grab sample from below the cuttings after removal will be collected and submitted for laboratory analysis of Modified Table 915-1 to confirm that the extents of the cuttings have been removed to <Table 915-1 Cleanup Concentrations levels. In addition, a minimum of one (1) discrete sample will be collected from the treated cuttings and submitted for laboratory analysis of Modified Table 915-1 to document that any potential residual impacts are <Table 915-1 Cleanup Concentrations. In addition, one sample will be collected at the wellhead and analyzed for Modified Table 915-1.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Kyle Waggoner Title: Reclamation Coordinator

Submit Date: 05/11/2022 Email: kyle.waggoner@whiting.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: John Heil Date: 07/27/2022

Remediation Project Number: 24238

Condition of Approval

COA Type	Description
0 COA	

Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num	Name
403046027	FORM 27-INITIAL-SUBMITTED
403046037	ANALYTICAL RESULTS
403046038	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)

FORM
27
Rev 5/22

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number: 403533124
Receive Date: 09/18/2023
Report taken by: John Heil

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.
This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.
This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.
Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATON

Name of Operator: SCOUT ENERGY MANAGEMENT LLC Operator No: 10779
Address: 13800 MONTFORT DRIVE SUITE 100
City: DALLAS State: TX Zip: 75240
Contact Person: Chris Patterson Email: Chris.Patterson@scoutep.com

Phone Numbers
Phone: (970) 501-5157
Mobile: (970) 620-3456

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24238 Initial Form 27 Document #: 403046027

PURPOSE INFORMATION

- [ ] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [ ] Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- [ ] Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- [ ] Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- [ ] Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- [ ] Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- [ ] Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- [ ] Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- [x] Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- [ ] Rule 913.g: Changes of Operator.
- [ ] Rule 915.b: Request to leave elevated inorganics in situ.
- [ ] Other:

SITE INFORMATION

No Multiple Facilities

Facility Type: WELL Facility ID: API #: 103-12563 County Name: RIO BLANCO
Facility Name: Equity AC McLaughlin Orphan 200 Latitude: 40.089180 Longitude: -108.873864
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NWNW Sec: 5 Twp: 1N Range: 102W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications: GM
Most Sensitive Adjacent Land Use: Livestock Grazing
Is domestic water well within 1/4 mile? No
Is surface water within 1/4 mile? No
Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
- [ ] Produced Water
- [ ] Oil
- [ ] Condensate
- [ ] Drilling Fluids
- [X] Drill Cuttings
- [ ] **Other E&P Waste**
- [ ] Workover Fluids
- [ ] Tank Bottoms
- [ ] Pigging Waste
- [ ] Rig Wash
- [ ] Spent Filters
- [ ] Pit Bottoms
- [ ] Other (as described by EPA)
- [ ] **Non-E&P Waste**

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	Unknown	Field Screening via PID and visual

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

In accordance with Rule 911.a we are submitting this Form 27 to close the orphan well pad. Historically in this area we have occasionally encountered what appears to be historical drill cuttings remaining adjacent to the wells. This Form 27 workplan is being submitted to address the cuttings if encountered.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Whiting has collected >70 discrete confirmation samples and analyzed them for the full Table 915-1 Cleanup Concentrations during the assessment and remediation at multiple indistinguishable orphan well sites in the same field. Upon review of this data the PAH by EPA Method 8270D results consistently (in over 70+ samples) found impacts from non-detect to significantly lower than Table 915-1 cleanup concentration levels (see attached cumulative Confirmation Sample Result Table). Based upon these results Whiting is proposing a Modified Table 915-1 analysis suite that does not include the PAH analytes as it is not a constituent of concern at these sites. All other Table 915-1 analytes will be included in the Modified Table 915-1 Cleanup Concentrations. (see continued sampling plan under comments…)

Proposed Groundwater Sampling

[ ] Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Proposed Surface Water Sampling

[ ] Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

[ ] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0

Number of soil samples exceeeding 915-1 _____

Was the areal and vertical extent of soil contamination delineated? _____

Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____

_____ Highest concentration of SAR _____

BTEX > 915-1 _____

Vertical Extent > 915-1 (in feet) _____

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) _____

Number of groundwater monitoring wells installed _____

Number of groundwater samples exceeding 915-1 _____

_____ Highest concentration of Benzene (µg/l) _____

_____ Highest concentration of Toluene (µg/l) _____

_____ Highest concentration of Ethylbenzene (µg/l) _____

_____ Highest concentration of Xylene (µg/l) _____

_____ Highest concentration of Methane (mg/l) _____

Surface Water

0 Number of surface water samples collected

_____ Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) _____ Volume of liquid waste (barrels) _____

☐ Is further site investigation required?

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

If encountered the cuttings will be removed via a combination of mechanical and hand excavation in an effort to minimize disturbing the surrounding vegetation. The removed cuttings will be staged onsite.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

If encountered the cuttings (or any impacted material) will be staged and shredded onsite adjacent to the wells. The cuttings will then be processed through a soil shredder with a combination of soil and/or amendments at a ratio necessary to achieve Modified Table 915-1 Cleanup Concentrations.

Soil Remediation Summary

☐ **In Situ**

_____ Bioremediation (or enhanced bioremediation)

☐ **Ex Situ**

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

If Yes: Estimated Volume (Cubic Yards) _____

Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Excavate and onsite remediation

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other

☐ **Request Alternative Reporting Schedule:**

☐ Semi-Annually ☐ Annually ☐ Other

Rule 913.e:
After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report

☐ Other _____

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).
If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Operator anticipates the remaining cost for this project to be: $ _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards _____

E&P waste (solid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

☐ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

The location will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Seeding of the disturbed area will be performed in accordance with its intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance.

Is the described reclamation complete? _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim ☐ Final

Did the Surface Owner provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/16/2023

Proposed site investigation commencement. 06/21/2021

Proposed completion of site investigation. 08/08/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/16/2023

Proposed date of completion of Remediation. 11/01/2023

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

Well P&A'D. AOC Passed. Reclaiming fall 2023

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Chris Patterson Title: Sr. HSE Coordinator

Submit Date: 09/18/2023 Email: Chris.Patterson@scoutep.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: John Heil Date: 01/25/2024

Remediation Project Number: 24238

COA Type	Description
	Operator shall submit all analytical results for the Equity AC McLaughlin Orphan 200 API 05-103-12563 site investigation.
1 COA	

Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num	Name
403533124	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 1 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)

FORM
27
Rev 5/22

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number: 403533149
Receive Date: 09/18/2023
Report taken by: John Heil

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.
This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.
This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.
Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATON

Name of Operator: SCOUT ENERGY MANAGEMENT LLC Operator No: 10779
Address: 13800 MONTFORT DRIVE SUITE 100
City: DALLAS State: TX Zip: 75240
Contact Person: Chris Patterson Email: Chris.Patterson@scoutep.com

Phone Numbers
Phone: (970) 501-5157
Mobile: (970) 620-3456

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24238 Initial Form 27 Document #: 403046027

PURPOSE INFORMATION

- [ ] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [ ] Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- [ ] Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- [ ] Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- [ ] Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- [ ] Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- [ ] Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- [ ] Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- [x] Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- [ ] Rule 913.g: Changes of Operator.
- [ ] Rule 915.b: Request to leave elevated inorganics in situ.
- [ ] Other:

SITE INFORMATION

No Multiple Facilities

Facility Type: WELL Facility ID: API #: 103-12563 County Name: RIO BLANCO
Facility Name: Equity AC McLaughlin Orphan 200 Latitude: 40.089180 Longitude: -108.873864
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NWNW Sec: 5 Twp: 1N Range: 102W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GM
Most Sensitive Adjacent Land Use Livestock Grazing
Is domestic water well within 1/4 mile? No
Is surface water within 1/4 mile? No
Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
- [ ] Produced Water
- [ ] Oil
- [ ] Condensate
- [ ] Drilling Fluids
- [X] Drill Cuttings
- [ ] **Other E&P Waste**
- [ ] Workover Fluids
- [ ] Tank Bottoms
- [ ] Pigging Waste
- [ ] Rig Wash
- [ ] Spent Filters
- [ ] Pit Bottoms
- [ ] Other (as described by EPA)
- [ ] **Non-E&P Waste**

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	Unknown	Field Screening via PID and visual

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

In accordance with Rule 911.a we are submitting this Form 27 to close the orphan well pad. Historically in this area we have occasionally encountered what appears to be historical drill cuttings remaining adjacent to the wells. This Form 27 workplan is being submitted to address the cuttings if encountered.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Whiting has collected >70 discrete confirmation samples and analyzed them for the full Table 915-1 Cleanup Concentrations during the assessment and remediation at multiple indistinguishable orphan well sites in the same field. Upon review of this data the PAH by EPA Method 8270D results consistently (in over 70+ samples) found impacts from non-detect to significantly lower than Table 915-1 cleanup concentration levels (see attached cumulative Confirmation Sample Result Table). Based upon these results Whiting is proposing a Modified Table 915-1 analysis suite that does not include the PAH analytes as it is not a constituent of concern at these sites. All other Table 915-1 analytes will be included in the Modified Table 915-1 Cleanup Concentrations. (see continued sampling plan under comments…)

Proposed Groundwater Sampling

[ ] Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Proposed Surface Water Sampling

[ ] Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

[ ] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0

Number of soil samples exceeeding 915-1 _____

Was the areal and vertical extent of soil contamination delineated? _____

Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____

_____ Highest concentration of SAR _____

BTEX > 915-1 _____

Vertical Extent > 915-1 (in feet) _____

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) _____

Number of groundwater monitoring wells installed _____

Number of groundwater samples exceeding 915-1 _____

_____ Highest concentration of Benzene (µg/l) _____

_____ Highest concentration of Toluene (µg/l) _____

_____ Highest concentration of Ethylbenzene (µg/l) _____

_____ Highest concentration of Xylene (µg/l) _____

_____ Highest concentration of Methane (mg/l) _____

Surface Water

0 Number of surface water samples collected

_____ Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) _____ Volume of liquid waste (barrels) _____

☐ Is further site investigation required?

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

If encountered the cuttings will be removed via a combination of mechanical and hand excavation in an effort to minimize disturbing the surrounding vegetation. The removed cuttings will be staged onsite.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

If encountered the cuttings (or any impacted material) will be staged and shredded onsite adjacent to the wells. The cuttings will then be processed through a soil shredder with a combination of soil and/or amendments at a ratio necessary to achieve Modified Table 915-1 Cleanup Concentrations.

Soil Remediation Summary

☐ **In Situ**

_____ Bioremediation (or enhanced bioremediation)

☐ **Ex Situ**

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

If Yes: Estimated Volume (Cubic Yards) _____

Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Excavate and onsite remediation

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other

☐ **Request Alternative Reporting Schedule:**

☐ Semi-Annually ☐ Annually ☐ Other

Rule 913.e:
After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report

☐ Other _____

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).
If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Operator anticipates the remaining cost for this project to be: $ _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards _____

E&P waste (solid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

☐ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

The location will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Seeding of the disturbed area will be performed in accordance with its intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance.

Is the described reclamation complete? _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim ☐ Final

Did the Surface Owner provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/09/2023

Proposed site investigation commencement. 06/17/2021

Proposed completion of site investigation. 08/08/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/09/2023

Proposed date of completion of Remediation. 04/01/2024

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

Corrected Site and Remedial dates. Updated comments. Well P&A'D. Reclaiming spring 2024

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Chris Patterson

Title: Sr. HSE Coordinator

Submit Date: 09/18/2023

Email: Chris.Patterson@scoutep.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: John Heil

Date: 01/25/2024

Remediation Project Number: 24238

COA Type	Description
	Operator shall submit all analytical results for the Equity AC McLaughlin Orphan 200 API 05-103-12563 site investigation.
1 COA	

Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num	Name
403533149	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403666945	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 2 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)

APPENDIX B
LABORATORY ANALYTICAL RESULTS

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

ANALYTICAL REPORT

September 20, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Scout Energy - Rangely, CO

Sample Delivery Group:	L1528509
Samples Received:	08/23/2022
Project Number:	20231969.001A
Description:	AC McLaughlin 200 Closure
Site:	AC MCLAUGHLIN 200
Report To:	Chris Patterson 100 Chevron Road Rangely, CO 81648

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

20220822_AC MCLAUGHLIN_TP_COMP L1528509-01 Solid

Collected by: Jordan Veith | Collected date/time: 08/22/22 07:45 | Received date/time: 08/23/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1916179	1	08/31/22 11:20	08/31/22 11:20	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1924303	1	09/14/22 11:11	09/20/22 06:57	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1919526	1	09/01/22 07:30	09/01/22 09:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1927329	1	09/16/22 14:47	09/17/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1916971	1	08/28/22 09:28	08/29/22 12:51	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1916177	1	08/29/22 22:06	08/31/22 15:05	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1916975	5	08/28/22 09:31	08/29/22 10:17	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1916214	1	08/24/22 17:56	08/27/22 07:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1917155	1	08/24/22 17:56	08/26/22 16:17	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1916085	1	08/26/22 08:52	08/26/22 14:06	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1917194	1	08/26/22 17:22	08/27/22 14:59	AMG	Mt. Juliet, TN

20220822_AC MCLAUGHLIN_TP_DIS L1528509-02 Solid

Collected by: Jordan Veith | Collected date/time: 08/22/22 07:50 | Received date/time: 08/23/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1916179	1	08/31/22 11:23	08/31/22 11:23	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1924303	1	09/14/22 11:11	09/20/22 07:02	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1919526	1	09/01/22 07:30	09/01/22 09:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1927329	1	09/16/22 14:47	09/17/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1916971	1	08/28/22 09:28	08/29/22 12:59	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1916177	1	08/29/22 22:06	08/31/22 15:08	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1916975	5	08/28/22 09:31	08/29/22 10:20	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1916214	1	08/24/22 17:56	08/27/22 07:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1917155	1	08/24/22 17:56	08/26/22 16:36	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1916085	1	08/26/22 08:52	08/26/22 14:47	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1917194	1	08/26/22 17:22	08/27/22 15:38	AMG	Mt. Juliet, TN

20220822_AC MCLAUGHLIN_AOC @ 5FT L1528509-03 Solid

Collected by: Jordan Veith | Collected date/time: 08/22/22 07:55 | Received date/time: 08/23/22 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1916179	1	08/31/22 11:26	08/31/22 11:26	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1924303	1	09/14/22 11:11	09/20/22 07:07	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1919526	1	09/01/22 07:30	09/01/22 09:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1927329	1	09/16/22 14:47	09/17/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1916971	1	08/28/22 09:28	08/29/22 13:02	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1916177	1	08/29/22 22:06	08/31/22 15:11	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1916975	5	08/28/22 09:31	08/29/22 10:23	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1916850	1	08/24/22 17:56	08/27/22 03:03	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1917155	1	08/24/22 17:56	08/26/22 16:55	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1916426	1	08/25/22 17:28	08/26/22 00:39	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1917194	1	08/26/22 17:22	08/27/22 17:16	AMG	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.08		1	08/31/2022 11:20	WG1916179

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	09/20/2022 06:57	WG1924303

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.78	T8	1	09/01/2022 09:30	WG1919526

Sample Narrative:

L1528509-01 WG1919526: 7.78 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3390		10.0	1	09/17/2022 09:00	WG1927329

Sample Narrative:

L1528509-01 WG1927329: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	93.2		0.0852	0.500	1	08/29/2022 12:51	WG1916971
Cadmium	0.221	J	0.0471	0.500	1	08/29/2022 12:51	WG1916971
Copper	8.92		0.400	2.00	1	08/29/2022 12:51	WG1916971
Lead	8.77		0.208	0.500	1	08/29/2022 12:51	WG1916971
Nickel	11.7		0.132	2.00	1	08/29/2022 12:51	WG1916971
Selenium	U		0.764	2.00	1	08/29/2022 12:51	WG1916971
Silver	U		0.127	1.00	1	08/29/2022 12:51	WG1916971
Zinc	43.5		0.832	5.00	1	08/29/2022 12:51	WG1916971

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.01		0.0167	0.200	1	08/31/2022 15:05	WG1916177

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.81		0.100	1.00	5	08/29/2022 10:17	WG1916975

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0843	J	0.0217	0.100	1	08/27/2022 07:28	WG1916214
(S) a,a,a-Trifluorotoluene(FID)	*109*			*77.0-120*		*08/27/2022 07:28*	WG1916214

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/26/2022 16:17	WG1917155
Toluene	U		0.00130	0.00500	1	08/26/2022 16:17	WG1917155
Ethylbenzene	U		0.000737	0.00250	1	08/26/2022 16:17	WG1917155
Xylenes, Total	U		0.000880	0.00650	1	08/26/2022 16:17	WG1917155
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/26/2022 16:17	WG1917155
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/26/2022 16:17	WG1917155
(S) Toluene-d8	*103*			*75.0-131*		*08/26/2022 16:17*	WG1917155
(S) 4-Bromofluorobenzene	*97.7*			*67.0-138*		*08/26/2022 16:17*	WG1917155
(S) 1,2-Dichloroethane-d4	*99.6*			*70.0-130*		*08/26/2022 16:17*	WG1917155

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	08/26/2022 14:06	WG1916085
C28-C36 Motor Oil Range	1.64	B J	0.274	4.00	1	08/26/2022 14:06	WG1916085
(S) o-Terphenyl	*52.7*			*18.0-148*		*08/26/2022 14:06*	WG1916085

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/27/2022 14:59	WG1917194
Anthracene	U		0.00230	0.00600	1	08/27/2022 14:59	WG1917194
Benzo(a)anthracene	U		0.00173	0.00600	1	08/27/2022 14:59	WG1917194
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/27/2022 14:59	WG1917194
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/27/2022 14:59	WG1917194
Benzo(a)pyrene	U		0.00179	0.00600	1	08/27/2022 14:59	WG1917194
Chrysene	U		0.00232	0.00600	1	08/27/2022 14:59	WG1917194
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/27/2022 14:59	WG1917194
Fluoranthene	0.00242	J	0.00227	0.00600	1	08/27/2022 14:59	WG1917194
Fluorene	U		0.00205	0.00600	1	08/27/2022 14:59	WG1917194
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/27/2022 14:59	WG1917194
1-Methylnaphthalene	U		0.00449	0.0200	1	08/27/2022 14:59	WG1917194
2-Methylnaphthalene	U		0.00427	0.0200	1	08/27/2022 14:59	WG1917194
Naphthalene	U		0.00408	0.0200	1	08/27/2022 14:59	WG1917194
Pyrene	0.00223	J	0.00200	0.00600	1	08/27/2022 14:59	WG1917194
(S) p-Terphenyl-d14	*61.3*			*23.0-120*		*08/27/2022 14:59*	WG1917194
(S) Nitrobenzene-d5	*55.2*			*14.0-149*		*08/27/2022 14:59*	WG1917194
(S) 2-Fluorobiphenyl	*64.5*			*34.0-125*		*08/27/2022 14:59*	WG1917194

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.3		1	08/31/2022 11:23	WG1916179

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.272	J	0.255	1.00	1	09/20/2022 07:02	WG1924303

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.99	T8	1	09/01/2022 09:30	WG1919526

Sample Narrative:

L1528509-02 WG1919526: 7.99 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4540		10.0	1	09/17/2022 09:00	WG1927329

Sample Narrative:

L1528509-02 WG1927329: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	126		0.0852	0.500	1	08/29/2022 12:59	WG1916971
Cadmium	0.347	J	0.0471	0.500	1	08/29/2022 12:59	WG1916971
Copper	13.9		0.400	2.00	1	08/29/2022 12:59	WG1916971
Lead	15.2		0.208	0.500	1	08/29/2022 12:59	WG1916971
Nickel	18.8		0.132	2.00	1	08/29/2022 12:59	WG1916971
Selenium	0.965	J	0.764	2.00	1	08/29/2022 12:59	WG1916971
Silver	U		0.127	1.00	1	08/29/2022 12:59	WG1916971
Zinc	70.3		0.832	5.00	1	08/29/2022 12:59	WG1916971

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.40		0.0167	0.200	1	08/31/2022 15:08	WG1916177

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.00		0.100	1.00	5	08/29/2022 10:20	WG1916975

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0723	J	0.0217	0.100	1	08/27/2022 07:50	WG1916214
(S) a,a,a-Trifluorotoluene(FID)	*109*			*77.0-120*		*08/27/2022 07:50*	WG1916214

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/26/2022 16:36	WG1917155
Toluene	U		0.00130	0.00500	1	08/26/2022 16:36	WG1917155
Ethylbenzene	U		0.000737	0.00250	1	08/26/2022 16:36	WG1917155
Xylenes, Total	U		0.000880	0.00650	1	08/26/2022 16:36	WG1917155
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/26/2022 16:36	WG1917155
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/26/2022 16:36	WG1917155
(S) Toluene-d8	*105*			*75.0-131*		*08/26/2022 16:36*	WG1917155
(S) 4-Bromofluorobenzene	*94.3*			*67.0-138*		*08/26/2022 16:36*	WG1917155
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*08/26/2022 16:36*	WG1917155

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	6.96		1.61	4.00	1	08/26/2022 14:47	WG1916085
C28-C36 Motor Oil Range	14.5		0.274	4.00	1	08/26/2022 14:47	WG1916085
(S) o-Terphenyl	*67.7*			*18.0-148*		*08/26/2022 14:47*	WG1916085

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/27/2022 15:38	WG1917194
Anthracene	U		0.00230	0.00600	1	08/27/2022 15:38	WG1917194
Benzo(a)anthracene	U		0.00173	0.00600	1	08/27/2022 15:38	WG1917194
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/27/2022 15:38	WG1917194
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/27/2022 15:38	WG1917194
Benzo(a)pyrene	U		0.00179	0.00600	1	08/27/2022 15:38	WG1917194
Chrysene	U		0.00232	0.00600	1	08/27/2022 15:38	WG1917194
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/27/2022 15:38	WG1917194
Fluoranthene	U		0.00227	0.00600	1	08/27/2022 15:38	WG1917194
Fluorene	U		0.00205	0.00600	1	08/27/2022 15:38	WG1917194
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/27/2022 15:38	WG1917194
1-Methylnaphthalene	U		0.00449	0.0200	1	08/27/2022 15:38	WG1917194
2-Methylnaphthalene	U		0.00427	0.0200	1	08/27/2022 15:38	WG1917194
Naphthalene	U		0.00408	0.0200	1	08/27/2022 15:38	WG1917194
Pyrene	U		0.00200	0.00600	1	08/27/2022 15:38	WG1917194
(S) p-Terphenyl-d14	*78.1*			*23.0-120*		*08/27/2022 15:38*	WG1917194
(S) Nitrobenzene-d5	*57.8*			*14.0-149*		*08/27/2022 15:38*	WG1917194
(S) 2-Fluorobiphenyl	*73.7*			*34.0-125*		*08/27/2022 15:38*	WG1917194

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	15.3		1	08/31/2022 11:26	WG1916179

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	09/20/2022 07:07	WG1924303

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.80	T8	1	09/01/2022 09:30	WG1919526

Sample Narrative:

L1528509-03 WG1919526: 7.8 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	7450		10.0	1	09/17/2022 09:00	WG1927329

Sample Narrative:

L1528509-03 WG1927329: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	162		0.0852	0.500	1	08/29/2022 13:02	WG1916971
Cadmium	0.765		0.0471	0.500	1	08/29/2022 13:02	WG1916971
Copper	15.2		0.400	2.00	1	08/29/2022 13:02	WG1916971
Lead	14.8		0.208	0.500	1	08/29/2022 13:02	WG1916971
Nickel	20.2		0.132	2.00	1	08/29/2022 13:02	WG1916971
Selenium	0.799	J	0.764	2.00	1	08/29/2022 13:02	WG1916971
Silver	U		0.127	1.00	1	08/29/2022 13:02	WG1916971
Zinc	71.4		0.832	5.00	1	08/29/2022 13:02	WG1916971

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.825		0.0167	0.200	1	08/31/2022 15:11	WG1916177

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.37		0.100	1.00	5	08/29/2022 10:23	WG1916975

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0595	J	0.0217	0.100	1	08/27/2022 03:03	WG1916850
(S) a,a,a-Trifluorotoluene(FID)	*88.2*			*77.0-120*		*08/27/2022 03:03*	WG1916850

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	08/26/2022 16:55	WG1917155
Toluene	0.00225	J	0.00130	0.00500	1	08/26/2022 16:55	WG1917155
Ethylbenzene	U		0.000737	0.00250	1	08/26/2022 16:55	WG1917155
Xylenes, Total	U		0.000880	0.00650	1	08/26/2022 16:55	WG1917155
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/26/2022 16:55	WG1917155
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/26/2022 16:55	WG1917155
(S) Toluene-d8	*103*			*75.0-131*		*08/26/2022 16:55*	WG1917155
(S) 4-Bromofluorobenzene	*94.5*			*67.0-138*		*08/26/2022 16:55*	WG1917155
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*08/26/2022 16:55*	WG1917155

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	15.4		1.61	4.00	1	08/26/2022 00:39	WG1916426
C28-C36 Motor Oil Range	21.0		0.274	4.00	1	08/26/2022 00:39	WG1916426
(S) o-Terphenyl	*57.4*			*18.0-148*		*08/26/2022 00:39*	WG1916426

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/27/2022 17:16	WG1917194
Anthracene	U		0.00230	0.00600	1	08/27/2022 17:16	WG1917194
Benzo(a)anthracene	U		0.00173	0.00600	1	08/27/2022 17:16	WG1917194
Benzo(b)fluoranthene	0.00237	J	0.00153	0.00600	1	08/27/2022 17:16	WG1917194
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/27/2022 17:16	WG1917194
Benzo(a)pyrene	U		0.00179	0.00600	1	08/27/2022 17:16	WG1917194
Chrysene	U		0.00232	0.00600	1	08/27/2022 17:16	WG1917194
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/27/2022 17:16	WG1917194
Fluoranthene	0.00327	J	0.00227	0.00600	1	08/27/2022 17:16	WG1917194
Fluorene	U		0.00205	0.00600	1	08/27/2022 17:16	WG1917194
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/27/2022 17:16	WG1917194
1-Methylnaphthalene	0.0118	J	0.00449	0.0200	1	08/27/2022 17:16	WG1917194
2-Methylnaphthalene	0.0110	J	0.00427	0.0200	1	08/27/2022 17:16	WG1917194
Naphthalene	0.00629	J	0.00408	0.0200	1	08/27/2022 17:16	WG1917194
Pyrene	0.00473	J	0.00200	0.00600	1	08/27/2022 17:16	WG1917194
(S) p-Terphenyl-d14	*63.3*			*23.0-120*		*08/27/2022 17:16*	WG1917194
(S) Nitrobenzene-d5	*51.1*			*14.0-149*		*08/27/2022 17:16*	WG1917194
(S) 2-Fluorobiphenyl	*66.0*			*34.0-125*		*08/27/2022 17:16*	WG1917194

QUALITY CONTROL SUMMARY

L1528509-01,02,03

Method Blank (MB)

(MB) R3839103-1 09/20/22 05:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	U		0.255	1.00

L1528512-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1528512-01 09/20/22 07:23 • (DUP) R3839103-7 09/20/22 07:28

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

L1528513-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1528513-03 09/20/22 08:09 • (DUP) R3839103-8 09/20/22 08:15

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3839103-2 09/20/22 05:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.2	102	80.0-120	

L1528508-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528508-03 09/20/22 06:20 • (MS) R3839103-3 09/20/22 06:26 • (MSD) R3839103-4 09/20/22 06:31

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	19.6	20.2	98.0	101	1	75.0-125			2.97	20

L1528508-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1528508-03 09/20/22 06:20 • (MS) R3839103-6 09/20/22 06:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	631	U	791	125	50	75.0-125	

L1528509-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1528509-02 09/01/22 09:30 • (DUP) R3832784-2 09/01/22 09:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.99	7.98	1	0.125		1

Sample Narrative:

OS: 7.99 at 21.3C

DUP: 7.98 at 21.4C

L1528512-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1528512-04 09/01/22 09:30 • (DUP) R3832784-3 09/01/22 09:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.80	7.80	1	0.000		1

Sample Narrative:

OS: 7.8 at 20.6C

DUP: 7.8 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R3832784-1 09/01/22 09:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.91	99.1	99.0-101	

Sample Narrative:

LCS: 9.91 at 21.1C

Method Blank (MB)

(MB) R3838286-1 09/17/22 09:00

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1528508-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1528508-02 09/17/22 09:00 • (DUP) R3838286-3 09/17/22 09:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	693	688	1	0.724		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1528512-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1528512-01 09/17/22 09:00 • (DUP) R3838286-4 09/17/22 09:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1860	1820	1	2.18		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3838286-2 09/17/22 09:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1090	96.9	85.0-115	

Sample Narrative:
LCS: at 25C

QUALITY CONTROL SUMMARY

L1528509-01,02,03

Method Blank (MB)

(MB) R3831610-1 08/29/22 12:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3831610-2 08/29/22 12:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	92.5	92.5	80.0-120	
Cadmium	100	88.9	88.9	80.0-120	
Copper	100	90.6	90.6	80.0-120	
Lead	100	87.7	87.7	80.0-120	
Nickel	100	91.4	91.4	80.0-120	
Selenium	100	89.6	89.6	80.0-120	
Silver	20.0	16.3	81.3	80.0-120	
Zinc	100	89.9	89.9	80.0-120	

L1528508-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528508-01 08/29/22 12:33 • (MS) R3831610-5 08/29/22 12:41 • (MSD) R3831610-6 08/29/22 12:43

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	180	238	235	58.3	55.1	1	75.0-125	J6	J6	1.32	20
Cadmium	100	0.421	94.1	88.4	93.7	88.0	1	75.0-125			6.19	20
Copper	100	16.3	109	104	93.2	87.6	1	75.0-125			5.24	20
Lead	100	18.2	108	101	89.9	83.3	1	75.0-125			6.27	20
Nickel	100	22.2	115	108	93.2	85.4	1	75.0-125			7.03	20
Selenium	100	0.884	95.6	90.0	94.7	89.1	1	75.0-125			6.09	20
Silver	20.0	U	17.3	16.4	86.5	81.8	1	75.0-125			5.60	20
Zinc	100	81.1	157	147	76.2	65.8	1	75.0-125		J6	6.86	20

QUALITY CONTROL SUMMARY

L1528509-01,02,03

Method Blank (MB)

(MB) R3832627-1 08/31/22 14:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3832627-2 08/31/22 14:47 • (LCSD) R3832627-3 08/31/22 14:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.05	1.01	105	101	80.0-120			3.90	20

QUALITY CONTROL SUMMARY

L1528509-01,02,03

Method Blank (MB)

(MB) R3831367-1 08/29/22 09:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3831367-2 08/29/22 09:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	88.9	88.9	80.0-120	

L1528508-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528508-01 08/29/22 09:26 • (MS) R3831367-5 08/29/22 09:36 • (MSD) R3831367-6 08/29/22 09:39

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	6.87	93.0	88.9	86.1	82.0	5	75.0-125			4.51	20

Method Blank (MB)

(MB) R3832112-3 08/27/22 00:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*113*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3832112-2 08/26/22 23:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.13	93.3	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*98.7*	*77.0-120*	

L1528252-19 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528252-19 08/27/22 01:00 • (MS) R3832112-6 08/27/22 08:55 • (MSD) R3832112-7 08/27/22 09:16

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	U	3.87	3.97	70.4	72.2	1	10.0-151			2.55	28
(S) a,a,a-Trifluorotoluene(FID)					*101*	*101*		*77.0-120*				

Method Blank (MB)

(MB) R3831669-2 08/27/22 02:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*95.3*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3831669-1 08/27/22 00:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.87	107	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*109*	*77.0-120*	

L1528512-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528512-01 08/27/22 04:45 • (MS) R3831669-3 08/27/22 09:52 • (MSD) R3831669-4 08/27/22 10:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	0.123	3.14	3.90	54.9	68.7	1	10.0-151			21.6	28
(S) a,a,a-Trifluorotoluene(FID)					*99.0*	*103*		*77.0-120*				

Method Blank (MB)

(MB) R3832517-3 08/26/22 11:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*104*			*75.0-131*
(S) 4-Bromofluorobenzene	*99.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3832517-1 08/26/22 10:32 • (LCSD) R3832517-2 08/26/22 10:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.122	0.125	97.6	100	70.0-123			2.43	20
Toluene	0.125	0.119	0.116	95.2	92.8	75.0-121			2.55	20
Ethylbenzene	0.125	0.109	0.111	87.2	88.8	74.0-126			1.82	20
Xylenes, Total	0.375	0.329	0.331	87.7	88.3	72.0-127			0.606	20
1,2,4-Trimethylbenzene	0.125	0.113	0.117	90.4	93.6	70.0-126			3.48	20
1,3,5-Trimethylbenzene	0.125	0.115	0.119	92.0	95.2	73.0-127			3.42	20
(S) Toluene-d8				*103*	*100*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*98.8*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*107*	*113*	*70.0-130*				

Method Blank (MB)

(MB) R3831086-1 08/26/22 13:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.629	J	0.274	4.00
(S) o-Terphenyl	*76.0*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3831086-2 08/26/22 13:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.2	64.4	50.0-150	
(S) o-Terphenyl			*57.5*	*18.0-148*	

L1528344-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528344-03 08/26/22 17:18 • (MS) R3831086-3 08/26/22 17:32 • (MSD) R3831086-4 08/26/22 17:46

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.8	397	483	493	173	195	1	50.0-150	E V	E V	2.05	20
(S) o-Terphenyl					*72.7*	*64.0*		*18.0-148*				

QUALITY CONTROL SUMMARY

L1528509-03

Method Blank (MB)

(MB) R3830688-2 08/25/22 21:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*64.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3830688-1 08/25/22 21:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	36.1	72.2	50.0-150	
(S) o-Terphenyl			*89.6*	*18.0-148*	

L1528764-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528764-01 08/26/22 11:45 • (MS) R3830859-1 08/26/22 11:58 • (MSD) R3830859-2 08/26/22 12:11

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	59.9	72.6	62.0	25.4	4.22	1	50.0-150	J6	J6	15.8	20
(S) o-Terphenyl					*60.1*	*51.2*		*18.0-148*				

Method Blank (MB)

(MB) R3831376-2 08/27/22 10:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	*74.2*			*23.0-120*
(S) Nitrobenzene-d5	*57.7*			*14.0-149*
(S) 2-Fluorobiphenyl	*68.2*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3831376-1 08/27/22 10:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0493	61.6	50.0-120	
Anthracene	0.0800	0.0514	64.3	50.0-126	
Benzo(a)anthracene	0.0800	0.0484	60.5	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0451	56.4	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0456	57.0	49.0-125	
Benzo(a)pyrene	0.0800	0.0424	53.0	42.0-120	
Chrysene	0.0800	0.0474	59.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0427	53.4	47.0-125	
Fluoranthene	0.0800	0.0527	65.9	49.0-129	
Fluorene	0.0800	0.0508	63.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0455	56.9	46.0-125	
1-Methylnaphthalene	0.0800	0.0451	56.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0450	56.3	50.0-120	
Naphthalene	0.0800	0.0507	63.4	50.0-120	
Pyrene	0.0800	0.0490	61.3	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3831376-1 08/27/22 10:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*71.1*	*23.0-120*	
(S) Nitrobenzene-d5			*55.0*	*14.0-149*	
(S) 2-Fluorobiphenyl			*68.2*	*34.0-125*	

L1528317-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1528317-05 08/27/22 12:02 • (MS) R3831376-3 08/27/22 12:22 • (MSD) R3831376-4 08/27/22 12:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0766	U	0.0441	0.0419	57.4	55.7	1	14.0-127			5.12	27
Anthracene	0.0766	U	0.0444	0.0388	57.8	51.6	1	10.0-145			13.5	30
Benzo(a)anthracene	0.0766	U	0.0437	0.0381	56.9	50.7	1	10.0-139			13.7	30
Benzo(b)fluoranthene	0.0766	U	0.0416	0.0354	54.2	47.1	1	10.0-140			16.1	36
Benzo(k)fluoranthene	0.0766	U	0.0422	0.0366	54.9	48.7	1	10.0-137			14.2	31
Benzo(a)pyrene	0.0766	U	0.0456	0.0386	59.4	51.3	1	10.0-141			16.6	31
Chrysene	0.0766	U	0.0455	0.0406	59.2	54.0	1	10.0-145			11.4	30
Dibenz(a,h)anthracene	0.0766	U	0.0426	0.0371	55.5	49.3	1	10.0-132			13.8	31
Fluoranthene	0.0766	U	0.0470	0.0400	61.2	53.2	1	10.0-153			16.1	33
Fluorene	0.0766	U	0.0427	0.0401	55.6	53.3	1	11.0-130			6.28	29
Indeno(1,2,3-cd)pyrene	0.0766	U	0.0448	0.0371	58.3	49.3	1	10.0-137			18.8	32
1-Methylnaphthalene	0.0766	U	0.0445	0.0412	57.9	54.8	1	10.0-142			7.70	28
2-Methylnaphthalene	0.0766	U	0.0453	0.0419	59.0	55.7	1	10.0-137			7.80	28
Naphthalene	0.0766	U	0.0462	0.0437	60.2	58.1	1	10.0-135			5.56	27
Pyrene	0.0766	U	0.0451	0.0410	58.7	54.5	1	10.0-148			9.52	35
(S) p-Terphenyl-d14					*70.3*	*64.5*		*23.0-120*				
(S) Nitrobenzene-d5					*60.2*	*57.0*		*14.0-149*				
(S) 2-Fluorobiphenyl					*63.0*	*59.1*		*34.0-125*				

Sample Narrative:

OS: Duplicate Analysis performed due to surrogate failure. Reporting most compliant data.

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Scout Energy Partners
13800 Montfort Drive,
Suite 100
Dallas, Tx 75240

Billing Information: Same as left

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: Chris Patterson

Email To: Chris.Patterson@scoutep.com

Project Description: AC McLaughlin 200 Closure

City/State Collected: Rangely, CO

Phone: 970-620-3456
Fax:

Client Project # 20231969.001A

Lab Project # —

L # L528509

H049

Collected by (print): Jordan Veith

Site/Facility ID # AC McLaughlin 200

P.O. # —

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # —

Date Results Needed: Standard

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1								Remarks	Sample # (lab only)
20220822_ACMclaughlin_TP_COMP	Comp	SS	GS	8/22/2022	7:45	2	X									-01
20220822_AC McLaughlin_TP_DES	Grab	SS	GS	8/22/2022	7:50	2	X									-02
20220822_AC McLaughlin_AOC@3ft	Grab	SS	3 ft	8/22/2022	7:55	2	X									-03

8/22/2022

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier __ _____

Tracking # 5755 8084 9315

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	8/22/2022	1400		0	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: RRA6 °C 0.2+0=0.2	Bottles Received: 6
	822	1500			
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:
			Zac Poris	8-23-22	08:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

November 22, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Gl
7 Al
8 Sc

Scout Energy - Rangely, CO

Sample Delivery Group:	L1553777
Samples Received:	11/03/2022
Project Number:	20231969.001A
Description:	
Report To:	Chris Patterson 100 Chevron Road Rangely, CO 81648

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

20221101_AC MCLAUGHLIN 200_TP_DIS L1553777-01 Solid

Collected by: Jordan Veith
Collected date/time: 11/01/22 08:20
Received date/time: 11/03/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1960423	1	11/21/22 12:47	11/21/22 12:47	ABL	Mt. Juliet, TN

20221101_AC MCLAUGHLIN 200_AOC@5FT L1553777-02 Solid

Collected by: Jordan Veith
Collected date/time: 11/01/22 08:25
Received date/time: 11/03/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1960423	1	11/21/22 12:50	11/21/22 12:50	ABL	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	13.1		1	11/21/2022 12:47	WG1960423

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	14.1		1	11/21/2022 12:50	WG1960423

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Scout Energy Partners
13800 Monfort Drive
Suite 100
Dallas, TX 75240

Billing Information: Same as Left

Pres Chk

Report to: Chris Patterson

Email To: chris.patterson@scoutep.com

Project Description:

City/State Collected: Piceance Creek, CO

Please Circle: PT MT CT ET

Phone: (970) 620-3456

Client Project #: 20231969.001A

Lab Project #:

Collected by (print): Jordan Veith

Site/Facility ID #:

P.O. #:

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #: KLEINFELDER

Date Results Needed: Standard TAT

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	COGCC Table 915-1 minus PAHs	SAR								Remarks	Sample # (lab only)
20221101_AC McLaughlin 200_TP_DIS	Grab	SS	GS	11/1/2022	8:20	1			X									-01
20221101_AC McLaughlin 200_AOC@5ft	Grab	SS	5ft	11/1/2022	8:25	1			X									-02

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

12065 Lebanon Rd Mount Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 155377

F089

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier __ _____

Tracking # 5755 8085 1359

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	11/2/22	1230			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
	11/2/22	1300		0.47 2.2 to = 2.2 2	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK
				11/3 0960	

ANALYTICAL REPORT

July 26, 2023

Revised Report

Scout Energy Management LLC - Dallas, TX

Sample Delivery Group:	L1631831
Samples Received:	07/01/2023
Project Number:	
Description:	McLaughlin 200 Closure
Site:	MCLAUGHLIN 200
Report To:	Chris Patterson 13800 Montfort Drive Suite 100 Dallas, TX 75240

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

20230629-MCLAUGHLIN 200-WH@4FT L1631831-01 Solid

Collected by	Collected date/time	Received date/time
JORDAN V.	06/29/23 12:21	07/01/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2089400	1	07/11/23 13:39	07/11/23 13:39	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2089871	1	07/08/23 10:20	07/11/23 01:28	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2090072	1	07/06/23 10:00	07/06/23 14:30	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2089962	1	07/06/23 15:25	07/06/23 17:28	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2089405	1	07/10/23 19:28	07/11/23 12:46	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2089861	5	07/05/23 23:39	07/07/23 17:33	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2091736	1	07/06/23 19:32	07/10/23 06:46	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2091382	1	07/06/23 19:32	07/09/23 04:55	KSD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2091786	10	07/12/23 06:01	07/12/23 16:00	KAP	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward

Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 07/13/23 07:38

Project Narrative

Reissued for MDL/RDL reporting

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.79		1	07/11/2023 13:39	WG2089400

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.260	J	0.255	1.00	1	07/11/2023 01:28	WG2089871

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.29	T8	1	07/06/2023 14:30	WG2090072

Sample Narrative:

L1631831-01 WG2090072: 8.29 at 23.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	5830		10.0	1	07/06/2023 17:28	WG2089962

Sample Narrative:

L1631831-01 WG2089962: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.722		0.0167	0.200	1	07/11/2023 12:46	WG2089405

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.50		0.100	1.00	5	07/07/2023 17:33	WG2089861
Barium	112		0.152	2.50	5	07/07/2023 17:33	WG2089861
Cadmium	0.215	J	0.0855	1.00	5	07/07/2023 17:33	WG2089861
Copper	9.57		0.132	5.00	5	07/07/2023 17:33	WG2089861
Lead	13.2		0.0990	2.00	5	07/07/2023 17:33	WG2089861
Nickel	13.8		0.197	2.50	5	07/07/2023 17:33	WG2089861
Selenium	1.36	J	0.180	2.50	5	07/07/2023 17:33	WG2089861
Silver	0.0887	J	0.0865	0.500	5	07/07/2023 17:33	WG2089861
Zinc	63.5		0.740	25.0	5	07/07/2023 17:33	WG2089861

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.95		0.0217	0.100	1	07/10/2023 06:46	WG2091736
(S) a,a,a-Trifluorotoluene(FID)	*85.3*			*77.0-120*		*07/10/2023 06:46*	WG2091736

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	U		0.0365	0.0500	1	07/09/2023 04:55	WG2091382
Acrylonitrile	U		0.00361	0.0125	1	07/09/2023 04:55	WG2091382
Benzene	U		0.000467	0.00100	1	07/09/2023 04:55	WG2091382
Bromobenzene	U		0.000900	0.0125	1	07/09/2023 04:55	WG2091382
Bromodichloromethane	U		0.000725	0.00250	1	07/09/2023 04:55	WG2091382
Bromoform	U		0.00117	0.0250	1	07/09/2023 04:55	WG2091382
Bromomethane	U		0.00197	0.0125	1	07/09/2023 04:55	WG2091382
n-Butylbenzene	U		0.00525	0.0125	1	07/09/2023 04:55	WG2091382
sec-Butylbenzene	0.0161		0.00288	0.0125	1	07/09/2023 04:55	WG2091382
tert-Butylbenzene	0.00295	J	0.00195	0.00500	1	07/09/2023 04:55	WG2091382
Carbon tetrachloride	U		0.000898	0.00500	1	07/09/2023 04:55	WG2091382
Chlorobenzene	0.00158	J	0.000210	0.00250	1	07/09/2023 04:55	WG2091382
Chlorodibromomethane	U		0.000612	0.00250	1	07/09/2023 04:55	WG2091382
Chloroethane	U	J4	0.00170	0.00500	1	07/09/2023 04:55	WG2091382
Chloroform	U		0.00103	0.00250	1	07/09/2023 04:55	WG2091382
Chloromethane	U		0.00435	0.0125	1	07/09/2023 04:55	WG2091382
2-Chlorotoluene	0.00620		0.000865	0.00250	1	07/09/2023 04:55	WG2091382
4-Chlorotoluene	U		0.000450	0.00500	1	07/09/2023 04:55	WG2091382
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250	1	07/09/2023 04:55	WG2091382
1,2-Dibromoethane	U		0.000648	0.00250	1	07/09/2023 04:55	WG2091382
Dibromomethane	U		0.000750	0.00500	1	07/09/2023 04:55	WG2091382
1,2-Dichlorobenzene	U		0.000425	0.00500	1	07/09/2023 04:55	WG2091382
1,3-Dichlorobenzene	U		0.000600	0.00500	1	07/09/2023 04:55	WG2091382
1,4-Dichlorobenzene	U		0.000700	0.00500	1	07/09/2023 04:55	WG2091382
Dichlorodifluoromethane	U		0.00161	0.00250	1	07/09/2023 04:55	WG2091382
1,1-Dichloroethane	U		0.000491	0.00250	1	07/09/2023 04:55	WG2091382
1,2-Dichloroethane	U		0.000649	0.00250	1	07/09/2023 04:55	WG2091382
1,1-Dichloroethene	U		0.000606	0.00250	1	07/09/2023 04:55	WG2091382
cis-1,2-Dichloroethene	U		0.000734	0.00250	1	07/09/2023 04:55	WG2091382
trans-1,2-Dichloroethene	U		0.00104	0.00500	1	07/09/2023 04:55	WG2091382
1,2-Dichloropropane	U		0.00142	0.00500	1	07/09/2023 04:55	WG2091382
1,1-Dichloropropene	U		0.000809	0.00250	1	07/09/2023 04:55	WG2091382
1,3-Dichloropropane	U		0.000501	0.00500	1	07/09/2023 04:55	WG2091382
cis-1,3-Dichloropropene	U		0.000757	0.00250	1	07/09/2023 04:55	WG2091382
trans-1,3-Dichloropropene	U		0.00114	0.00500	1	07/09/2023 04:55	WG2091382
2,2-Dichloropropane	U		0.00138	0.00250	1	07/09/2023 04:55	WG2091382
Di-isopropyl ether	U		0.000410	0.00100	1	07/09/2023 04:55	WG2091382
Ethylbenzene	0.000775	J	0.000737	0.00250	1	07/09/2023 04:55	WG2091382
Hexachloro-1,3-butadiene	U		0.00600	0.0250	1	07/09/2023 04:55	WG2091382
Isopropylbenzene	0.00408		0.000425	0.00250	1	07/09/2023 04:55	WG2091382
p-Isopropyltoluene	0.0219		0.00255	0.00500	1	07/09/2023 04:55	WG2091382
2-Butanone (MEK)	U		0.0635	0.100	1	07/09/2023 04:55	WG2091382
Methylene Chloride	U		0.00664	0.0250	1	07/09/2023 04:55	WG2091382
4-Methyl-2-pentanone (MIBK)	0.184		0.00228	0.0250	1	07/09/2023 04:55	WG2091382
Methyl tert-butyl ether	U		0.000350	0.00100	1	07/09/2023 04:55	WG2091382
Naphthalene	U		0.00488	0.0125	1	07/09/2023 04:55	WG2091382
n-Propylbenzene	0.00343	J	0.000950	0.00500	1	07/09/2023 04:55	WG2091382
Styrene	U		0.000229	0.0125	1	07/09/2023 04:55	WG2091382
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250	1	07/09/2023 04:55	WG2091382
1,1,2,2-Tetrachloroethane	0.154		0.000695	0.00250	1	07/09/2023 04:55	WG2091382
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250	1	07/09/2023 04:55	WG2091382
Tetrachloroethene	U		0.000896	0.00250	1	07/09/2023 04:55	WG2091382
Toluene	0.00178	B J	0.00130	0.00500	1	07/09/2023 04:55	WG2091382
1,2,3-Trichlorobenzene	U		0.00733	0.0125	1	07/09/2023 04:55	WG2091382
1,2,4-Trichlorobenzene	U		0.00440	0.0125	1	07/09/2023 04:55	WG2091382
1,1,1-Trichloroethane	U		0.000923	0.00250	1	07/09/2023 04:55	WG2091382

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	U		0.000597	0.00250	1	07/09/2023 04:55	WG2091382
Trichloroethene	U		0.000584	0.00100	1	07/09/2023 04:55	WG2091382
Trichlorofluoromethane	U		0.000827	0.00250	1	07/09/2023 04:55	WG2091382
1,2,3-Trichloropropane	U		0.00162	0.0125	1	07/09/2023 04:55	WG2091382
1,2,4-Trimethylbenzene	0.00188	J	0.00158	0.00500	1	07/09/2023 04:55	WG2091382
1,2,3-Trimethylbenzene	0.104		0.00158	0.00500	1	07/09/2023 04:55	WG2091382
1,3,5-Trimethylbenzene	0.0793		0.00200	0.00500	1	07/09/2023 04:55	WG2091382
Vinyl chloride	U		0.00116	0.00250	1	07/09/2023 04:55	WG2091382
Xylenes, Total	U		0.000880	0.00650	1	07/09/2023 04:55	WG2091382
(S) Toluene-d8	*100*			*75.0-131*		*07/09/2023 04:55*	WG2091382
(S) 4-Bromofluorobenzene	*110*			*67.0-138*		*07/09/2023 04:55*	WG2091382
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*07/09/2023 04:55*	WG2091382

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	769		16.1	40.0	10	07/12/2023 16:00	WG2091786
C28-C36 Motor Oil Range	380		2.74	40.0	10	07/12/2023 16:00	WG2091786
(S) o-Terphenyl	*109*			*18.0-148*		*07/12/2023 16:00*	WG2091786

QUALITY CONTROL SUMMARY

L1631831-01

Method Blank (MB)

(MB) R3946876-1 07/11/23 00:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	U		0.255	1.00

L1631827-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1631827-01 07/11/23 01:07 • (DUP) R3946876-3 07/11/23 01:12

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

L1632819-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1632819-03 07/11/23 03:06 • (DUP) R3946876-8 07/11/23 03:12

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3946876-2 07/11/23 01:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	9.87	98.7	80.0-120	

L1632819-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1632819-02 07/11/23 02:30 • (MS) R3946876-5 07/11/23 02:40 • (MSD) R3946876-6 07/11/23 02:46

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	16.1	17.0	80.4	84.8	1	75.0-125			5.21	20

L1631484-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1631484-01 07/06/23 14:30 • (DUP) R3945488-2 07/06/23 14:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	9.05	9.05	1	0.000		1

Sample Narrative:

OS: 9.05 at 26.2C

DUP: 9.05 at 26.1C

L1631816-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1631816-01 07/06/23 14:30 • (DUP) R3945488-3 07/06/23 14:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.83	7.81	1	0.256		1

Sample Narrative:

OS: 7.83 at 24.8C

DUP: 7.81 at 24.9C

Laboratory Control Sample (LCS)

(LCS) R3945488-1 07/06/23 14:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.02 at 23.2C

Method Blank (MB)

(MB) R3945655-1 07/06/23 17:28

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1631824-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1631824-01 07/06/23 17:28 • (DUP) R3945655-3 07/06/23 17:28

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4340	4410	1	1.60		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1631867-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1631867-01 07/06/23 17:28 • (DUP) R3945655-4 07/06/23 17:28

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3590	3550	1	1.12		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3945655-2 07/06/23 17:28

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	327	321	98.2	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3947105-1 07/11/23 11:57

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3947105-2 07/11/23 12:00 • (LCSD) R3947105-3 07/11/23 12:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.10	1.10	110	110	80.0-120			0.205	20

QUALITY CONTROL SUMMARY

L1631831-01

Method Blank (MB)

(MB) R3945995-1 07/07/23 14:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3945995-2 07/07/23 14:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	100	100	80.0-120	
Barium	100	98.2	98.2	80.0-120	
Cadmium	100	109	109	80.0-120	
Copper	100	98.7	98.7	80.0-120	
Lead	100	101	101	80.0-120	
Nickel	100	104	104	80.0-120	
Selenium	100	114	114	80.0-120	
Silver	20.0	20.0	99.9	80.0-120	
Zinc	100	99.2	99.2	80.0-120	

L1631767-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1631767-01 07/07/23 14:28 • (MS) R3945995-5 07/07/23 14:38 • (MSD) R3945995-6 07/07/23 14:41

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	7.78	88.3	89.2	80.6	81.4	5	75.0-125			0.969	20
Barium	100	187	275	268	88.0	81.6	5	75.0-125			2.34	20
Cadmium	100	0.102	96.4	94.3	96.3	94.2	5	75.0-125			2.28	20
Copper	100	12.1	93.8	93.4	81.7	81.3	5	75.0-125			0.392	20
Lead	100	10.4	94.7	93.6	84.3	83.2	5	75.0-125			1.19	20
Nickel	100	32.8	108	111	75.5	78.3	5	75.0-125			2.58	20
Selenium	100	0.301	99.6	96.8	99.3	96.5	5	75.0-125			2.82	20
Silver	20.0	U	17.0	16.6	85.1	82.9	5	75.0-125			2.56	20
Zinc	100	47.4	123	126	75.2	78.8	5	75.0-125			2.93	20

QUALITY CONTROL SUMMARY

L1631831-01

Method Blank (MB)

(MB) R3946930-2 07/09/23 23:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0250	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*96.8*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3946930-1 07/09/23 21:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.04	73.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*101*	*77.0-120*	

Method Blank (MB)

(MB) R3947485-3 07/09/23 00:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3947485-3 07/09/23 00:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	0.00138	J	0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*101*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3947485-1 07/08/23 22:55 • (LCSD) R3947485-2 07/08/23 23:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.720	0.826	115	132	10.0-160			13.7	31
Acrylonitrile	0.625	0.604	0.623	96.6	99.7	45.0-153			3.10	22
Benzene	0.125	0.124	0.128	99.2	102	70.0-123			3.17	20
Bromobenzene	0.125	0.127	0.129	102	103	73.0-121			1.56	20
Bromodichloromethane	0.125	0.134	0.134	107	107	73.0-121			0.000	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3947485-1 07/08/23 22:55 • (LCSD) R3947485-2 07/08/23 23:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.122	0.130	97.6	104	64.0-132			6.35	20
Bromomethane	0.125	0.161	0.184	129	147	56.0-147			13.3	20
n-Butylbenzene	0.125	0.114	0.122	91.2	97.6	68.0-135			6.78	20
sec-Butylbenzene	0.125	0.114	0.123	91.2	98.4	74.0-130			7.59	20
tert-Butylbenzene	0.125	0.126	0.131	101	105	75.0-127			3.89	20
Carbon tetrachloride	0.125	0.139	0.148	111	118	66.0-128			6.27	20
Chlorobenzene	0.125	0.124	0.127	99.2	102	76.0-128			2.39	20
Chlorodibromomethane	0.125	0.130	0.131	104	105	74.0-127			0.766	20
Chloroethane	0.125	0.158	0.176	126	141	61.0-134		J4	10.8	20
Chloroform	0.125	0.134	0.135	107	108	72.0-123			0.743	20
Chloromethane	0.125	0.137	0.141	110	113	51.0-138			2.88	20
2-Chlorotoluene	0.125	0.119	0.123	95.2	98.4	75.0-124			3.31	20
4-Chlorotoluene	0.125	0.112	0.119	89.6	95.2	75.0-124			6.06	20
1,2-Dibromo-3-Chloropropane	0.125	0.120	0.123	96.0	98.4	59.0-130			2.47	20
1,2-Dibromoethane	0.125	0.127	0.130	102	104	74.0-128			2.33	20
Dibromomethane	0.125	0.136	0.136	109	109	75.0-122			0.000	20
1,2-Dichlorobenzene	0.125	0.125	0.130	100	104	76.0-124			3.92	20
1,3-Dichlorobenzene	0.125	0.118	0.126	94.4	101	76.0-125			6.56	20
1,4-Dichlorobenzene	0.125	0.122	0.128	97.6	102	77.0-121			4.80	20
Dichlorodifluoromethane	0.125	0.130	0.145	104	116	43.0-156			10.9	20
1,1-Dichloroethane	0.125	0.124	0.128	99.2	102	70.0-127			3.17	20
1,2-Dichloroethane	0.125	0.132	0.136	106	109	65.0-131			2.99	20
1,1-Dichloroethene	0.125	0.134	0.139	107	111	65.0-131			3.66	20
cis-1,2-Dichloroethene	0.125	0.130	0.132	104	106	73.0-125			1.53	20
trans-1,2-Dichloroethene	0.125	0.126	0.123	101	98.4	71.0-125			2.41	20
1,2-Dichloropropane	0.125	0.127	0.130	102	104	74.0-125			2.33	20
1,1-Dichloropropene	0.125	0.130	0.134	104	107	73.0-125			3.03	20
1,3-Dichloropropane	0.125	0.124	0.125	99.2	100	80.0-125			0.803	20
cis-1,3-Dichloropropene	0.125	0.121	0.126	96.8	101	76.0-127			4.05	20
trans-1,3-Dichloropropene	0.125	0.114	0.117	91.2	93.6	73.0-127			2.60	20
2,2-Dichloropropane	0.125	0.110	0.113	88.0	90.4	59.0-135			2.69	20
Di-isopropyl ether	0.125	0.121	0.121	96.8	96.8	60.0-136			0.000	20
Ethylbenzene	0.125	0.129	0.135	103	108	74.0-126			4.55	20
Hexachloro-1,3-butadiene	0.125	0.137	0.149	110	119	57.0-150			8.39	20
Isopropylbenzene	0.125	0.120	0.128	96.0	102	72.0-127			6.45	20
p-Isopropyltoluene	0.125	0.119	0.125	95.2	100	72.0-133			4.92	20
2-Butanone (MEK)	0.625	0.579	0.631	92.6	101	30.0-160			8.60	24
Methylene Chloride	0.125	0.130	0.136	104	109	68.0-123			4.51	20
4-Methyl-2-pentanone (MIBK)	0.625	0.609	0.628	97.4	100	56.0-143			3.07	20
Methyl tert-butyl ether	0.125	0.128	0.128	102	102	66.0-132			0.000	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3947485-1 07/08/23 22:55 • (LCSD) R3947485-2 07/08/23 23:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.112	0.119	89.6	95.2	59.0-130			6.06	20
n-Propylbenzene	0.125	0.112	0.121	89.6	96.8	74.0-126			7.73	20
Styrene	0.125	0.124	0.129	99.2	103	72.0-127			3.95	20
1,1,1,2-Tetrachloroethane	0.125	0.130	0.136	104	109	74.0-129			4.51	20
1,1,2,2-Tetrachloroethane	0.125	0.106	0.114	84.8	91.2	68.0-128			7.27	20
1,1,2-Trichlorotrifluoroethane	0.125	0.121	0.141	96.8	113	61.0-139			15.3	20
Tetrachloroethene	0.125	0.133	0.139	106	111	70.0-136			4.41	20
Toluene	0.125	0.118	0.121	94.4	96.8	75.0-121			2.51	20
1,2,3-Trichlorobenzene	0.125	0.137	0.144	110	115	59.0-139			4.98	20
1,2,4-Trichlorobenzene	0.125	0.134	0.139	107	111	62.0-137			3.66	20
1,1,1-Trichloroethane	0.125	0.141	0.148	113	118	69.0-126			4.84	20
1,1,2-Trichloroethane	0.125	0.120	0.123	96.0	98.4	78.0-123			2.47	20
Trichloroethene	0.125	0.139	0.137	111	110	76.0-126			1.45	20
Trichlorofluoromethane	0.125	0.144	0.162	115	130	61.0-142			11.8	20
1,2,3-Trichloropropane	0.125	0.127	0.132	102	106	67.0-129			3.86	20
1,2,4-Trimethylbenzene	0.125	0.114	0.122	91.2	97.6	70.0-126			6.78	20
1,2,3-Trimethylbenzene	0.125	0.116	0.126	92.8	101	74.0-124			8.26	20
1,3,5-Trimethylbenzene	0.125	0.115	0.121	92.0	96.8	73.0-127			5.08	20
Vinyl chloride	0.125	0.136	0.142	109	114	63.0-134			4.32	20
Xylenes, Total	0.375	0.363	0.383	96.8	102	72.0-127			5.36	20
(S) Toluene-d8				*100*	*102*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*104*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*114*	*114*	*70.0-130*				

Method Blank (MB)

(MB) R3947734-1 07/12/23 12:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.988	J	0.274	4.00
(S) o-Terphenyl	*75.8*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3947734-2 07/12/23 13:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	36.8	73.6	50.0-150	
(S) o-Terphenyl			*63.7*	*18.0-148*	

L1631874-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1631874-01 07/12/23 15:09 • (MS) R3947734-3 07/12/23 15:21 • (MSD) R3947734-4 07/12/23 15:34

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	49.8	14.4	54.7	46.2	80.9	63.9	1	50.0-150			16.8	20
(S) o-Terphenyl					*54.4*	*53.0*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.
T8	Sample(s) received past/too close to holding time expiration.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

B

Company Name/Address:
Scout Energy Partners
13800 Monfort Drive
Suite 100
Dallas, TX 75240

Billing Information: Same as Left

Pres Chk

Report to: Chris Patterson

Email To: chris.patterson@scoutep.com

Project Description: McLaughlin 200 Closure

City/State Collected: Rangely, CO

Please Circle: PT MT CT ET

Phone: (970) 620-3456

Client Project #

Lab Project #

Collected by (print): Jordan Veith

Site/Facility ID # McLaughlin 200

P.O. #

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # KLEINFELDER

Date Results Needed: Standard TAT

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	COGCC Table 915-1 minus PAHs	Remarks	Sample # (lab only)
20230629-McLaughlin 200-WH@4ft	Grab	SS	4ft	6/29/23	12:21	4		X		-01

Chain of Custody Page ___ of ___

Pace PEOPLE ADVANCING SCIENCE

12065 Lebanon Rd Mount Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1631831

J118

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier __ _____

Tracking # 6193 3527 1874

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
[signature]	6/30/2023	0900	[signature]	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: CBAC °C Bottles Received:
[signature]	63023	1100		3.3 to 3.3 4
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			[signature]	07/01/23 1000

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

August 14, 2023

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Gl
7 Al
8 Sc

Scout Energy Management LLC - Dallas, TX

Sample Delivery Group:	L1641668
Samples Received:	08/02/2023
Project Number:	20231969.001A
Description:	AC McClaughlin 200 Closure
Site:	AC MCLAUGHLIN 200
Report To:	Chris Patterson 13800 Montfort Drive Suite 100 Dallas, TX 75240

Entire Report Reviewed By:

Craig Cothron
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

20230801-ACMCLAUGHLIN200-AOC@5 L1641668-01 Solid

Collected by	Collected date/time	Received date/time
	08/01/23 13:45	08/02/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2108557	1	08/11/23 18:47	08/11/23 18:47	ZSA	Mt. Juliet, TN

20230801-ACMCLAUGHLIN200-TP-DIS L1641668-02 Solid

Collected by	Collected date/time	Received date/time
	08/01/23 13:55	08/02/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2108557	1	08/11/23 18:50	08/11/23 18:50	ZSA	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	17.6		1	08/11/2023 18:47	WG2108557

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.77		1	08/11/2023 18:50	WG2108557

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Scout Energy Partners
13800 Monfort Drive
Suite 100
Dallas, TX 75240

Billing Information: Same as Left

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE
12065 Lebanon Rd Mount Juliet, TN 37122
Phone 615-758-5858 Alt 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to: Chris Patterson

Email To: chris.patterson@scoutep.com

Project Description: AC McLaughlin 200 Closure

City/State Collected: Rangely, CO

Please Circle: PT MT CT ET

SDG # L1641668
D063

Phone: (970) 620-3456

Client Project # —

Lab Project # —

Collected by (print): Jordan Veith

Site/Facility ID # AC McLaughlin 200

P.O. # —

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # KLEINFELDER

Date Results Needed: Standard TAT

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	COGCC Table 915-1 minus PAHs	SAR	Remarks	Sample # (lab only)
20230801-AC McLaughlin 200-A0C05 Grab		SS	5ft	8/1/23	13:45	2			X		-01
20230801-AC McLaughlin 200-TP-DFS ↓		SS	GS	↓	13:55	2			X		-02

[signature]
8/1/23

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
[signature]	8/1/23	1605	[signature]		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 4	If preservation required by Login: Date/Time
[signature]	8/1/23	1700			
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold:	Condition: NCF / OK
			Kayce (9)	8/2/23	845		

L1641668

Tracking Numbers	Temperature
6525 5572 0792	GBA8 3.4+0=3.4
6525 5572 0564	GBA8 1.6+0=1.6

ANALYTICAL REPORT

November 27, 2023

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Scout Energy - Rangely, CO

Sample Delivery Group:	L1679432
Samples Received:	11/16/2023
Project Number:	
Description:	AC McLaughlin Zoo Closure
Site:	AC MCLAUGHLIN ZOO
Report To:	Chris Patterson 100 Chevron Road Rangely, CO 81648

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

20231115-AC MCLAUGHLIN 200-AOC@5 L1679432-01 Solid

Collected by: Jordan V
Collected date/time: 11/15/23 07:40
Received date/time: 11/16/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2176198	1	11/26/23 14:11	11/26/23 14:11	ZSA	Mt. Juliet, TN

20231115-AC MCLAUGHLIN 200-WH@4 L1679432-02 Solid

Collected by: Jordan V
Collected date/time: 11/15/23 07:50
Received date/time: 11/16/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2176198	1	11/26/23 13:42	11/26/23 13:42	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2176390	1	11/23/23 07:45	11/23/23 11:10	NTG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2174261	1	11/19/23 15:16	11/20/23 00:29	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2175009	1	11/21/23 08:12	11/21/23 12:22	KAP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.84		1	11/26/2023 14:11	WG2176198

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.922		1	11/26/2023 13:42	WG2176198

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3210		10.0	1	11/23/2023 11:10	WG2176390

Sample Narrative:

L1679432-02 WG2176390: at 25C

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.111		0.0217	0.100	1	11/20/2023 00:29	WG2174261
(S) a,a,a-Trifluorotoluene(FID)	*96.7*			*77.0-120*		*11/20/2023 00:29*	WG2174261

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1.74	J	1.61	4.00	1	11/21/2023 12:22	WG2175009
C28-C36 Motor Oil Range	0.694	J	0.274	4.00	1	11/21/2023 12:22	WG2175009
(S) o-Terphenyl	*41.0*			*18.0-148*		*11/21/2023 12:22*	WG2175009

QUALITY CONTROL SUMMARY

L1679432-02

Method Blank (MB)

(MB) R4003741-1 11/23/23 11:10

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1678876-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1678876-01 11/23/23 11:10 • (DUP) R4003741-3 11/23/23 11:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	704	707	1	0.425		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1679431-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1679431-03 11/23/23 11:10 • (DUP) R4003741-4 11/23/23 11:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	280	283	1	0.959		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4003741-2 11/23/23 11:10

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	327	335	102	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R4004065-2 11/19/23 17:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R4004065-1 11/19/23 16:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.59	120	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*107*	*77.0-120*	

QUALITY CONTROL SUMMARY

L1679432-02

Method Blank (MB)

(MB) R4003055-1 11/21/23 11:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	*61.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4003055-2 11/21/23 12:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.8	67.6	50.0-150	
(S) o-Terphenyl			*54.7*	*18.0-148*	

L1678883-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1678883-03 11/21/23 13:43 • (MS) R4003055-3 11/21/23 13:56 • (MSD) R4003055-4 11/21/23 14:08

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.9	21.3	49.8	54.5	58.3	67.8	1	50.0-150			9.01	20
(S) o-Terphenyl					*35.0*	*37.5*		*18.0-148*				

Sample Narrative:

OS: Surrogate failure due to matrix interference

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Scout Energy Partners
13800 Monfort Drive
Suite 100
Dallas, TX 75240

Billing Information: Same as Left

Report to: Chris Patterson

Email To: chris.patterson@scoutep.com

Project Description: AC McLaughlin 200 Closure

City/State Collected: Rangely, CO

Please Circle: PT MT CT ET

Phone: (970) 620-3456

Client Project # —

Lab Project # —

Collected by (print): Jordan Veith

Site/Facility ID # AC McLaughlin 200

P.O. # —

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # KLEINFELDER

Date Results Needed: Standard TAT

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace PEOPLE ADVANCING SCIENCE

12065 Lebanon Rd Mount Juliet, TN 37122
Phone 615-758-5858 Alt 800-767-5859

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1670432 D076

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	COGCC Table 915-1	COGCC Table 915-1 minus PAHs	SAR	Colorado TPH	EC	Remarks	Sample # (lab only)
0231115-AC McLaughlin 200-AOC@5	G	SS	5ft	11/15/23	7:40	2			X				-01
0231115-AC McLaughlin 200-WH@4	↓	↓	4 ft	↓	7:50	2			X	X	X		-02

[signature]
11/15/23

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier __ _____

Tracking # 6525 5572 2188

Sample Receipt Checklist
COC Seal Present/Intact: ✓ NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: ✓ Y __N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
[signature]	11/15/23	1730	[signature]	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp 0.1 °C Bottles Received: 4
[signature]	11/15	1800		0.1+0=0.1
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			Ei Dawn	11-16-23 400

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

APPENDIX C
RANGELY AREA BACKGROUND SAMPLING REPORT

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

January 29, 2024
Kleinfelder Project No. 20231969.001A

Mr. Chris Patterson
Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

SUBJECT: RANGELY AREA BACKGROUND SAMPLING
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO

Dear Mr. Patterson:

Kleinfelder Inc. (Kleinfelder) performed background soil sampling activities in the general vicinity of the Orphan Location Closures in Rio Blanco County, Colorado under contract by Scout Energy Management LLC (Scout). Enclosed is the site investigation report for this effort.

Please do not hesitate to contact me at (970) 309-6553 or by email at JVeith@Kleinfelder.com should you have questions or concerns.

Respectfully submitted,
KLEINFELDER, INC.

Jordan Veith

Jordan Veith
Project Manager I

www.kleinfelder.com
KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

RANGELY AREA BACKGROUND SAMPLING
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO

KLEINFELDER PROJECT NO. 20231969.001A

January 29, 2024

A Report Prepared for:

Scout Energy Management, LLC
13800 Montfort Drive
Dallas, TX 75240

RANGELY AREA BACKGROUND SAMPLING
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO

Prepared by:

Isabel Rowland
Environmental Scientist

Reviewed by:

Vince DeCianne
VP, Senior Principal Professional

KLEINFELDER
707 17th Street, Suite 3000
Denver, Colorado 80202
P|303.237.6601
F|303.237.6602

January 29, 2024
Kleinfelder Project No. 20231969.001A

Contents **Page**

FIGURES

TABLES

APPENDICES

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

RANGELY AREA BACKGROUND SAMPLING
SCOUT ENERGY MANAGEMENT, LLC
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO

1 INTRODUCTION

This document was prepared by Kleinfelder Inc. (Kleinfelder) on behalf of Scout Energy Management, LLC (Scout) to provide documentation of background soil sampling support services conducted in Rio Blanco County, Colorado (**Figure 1**).

Kleinfelder was historically contracted by Whiting Oil and Gas Corporation (Whiting) to assist with the closure of orphan locations owned and maintained by Whiting in Rio Blanco County near Rangely, Colorado. During Whiting's management and operation of this project, Whiting completed a robust background sampling effort to better characterize background and native soil conditions within the area of the orphan locations. While the project was under Whiting ownership, background soil samples were collected by Kleinfelder and HRL Compliance Solutions (HRL) from seventeen (17) different locations within the proximity of the orphan locations. The analytical results of these background samples were compared to Colorado Energy and Carbon Management Commission (ECMC) Table 915-1 Residential Soil Screening Levels (RSSLs) to determine which contaminants listed on ECMC Table 915-1 occur at naturally high concentrations in the project area.

In June 2022, Scout acquired the Whiting assets in this area and took ownership of the orphan locations formerly owned and maintained by Whiting. As part of the transfer of operatorship process, Scout took ownership of the background soil sampling reports and analytical data from Whiting. Scout intends to apply the analytical data from the background soil sampling effort to future orphan location closures to determine whether contaminants of concerns identified through future soil sampling are naturally occurring in the area, or are due to potentially historic impacts at the orphan locations. Kleinfelder has been contracted by Scout to continue soil sampling support services to provide necessary information to complete the ECMC Form 27 for their orphan locations located in Rio Blanco County, Colorado.

Soil samples were analyzed by Pace Analytical National (Pace) and Summit Scientific (Summit) Laboratories and the results are reported herein. Whiting has previously submitted this background soil sample data in historic ECMC Form 27s to successfully close many orphan locations.

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

2 SITE LOCATION AND GEOLOGIC SETTING

The background soil samples were collected within the Piceance Basin in Rio Blanco County, Colorado. Location descriptions are provided in **Table 1** and are mapped on **Figure 1**. The Piceance Basin is a geologic structural basin consisting of sandstones and siltstones, containing reserves of coal, natural gas, and oil shale.

Land in the sampling area was observed to be rangeland. The general soil type within the orphan location area was classified based on Kleinfelder's field observations using the Unified Soil Classification System (USCS) and were observed to primarily be silty gravels, gravel-sand-silt mixtures. Topographical information is provided on **Figure 1**.

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

3 FIELD ACTIVITIES

Under contract by Whiting, HRL and Kleinfelder performed background soil sampling field activities at multiple locations within proximity to the orphan locations.

Prior to HRL and Kleinfelder's soil screening and sampling activities, Whiting identified all background soil sample locations. Whiting mechanically augered to representative depths at the background sample locations to allow soil samples to be collected. Thirty-three (33) total background soil samples were collected from a stainless-steel hand trowel and placed into laboratory-supplied jars with Teflon lids. Each sample was collected directly from the hand trowel from the appropriate depth and placed into the glass jars. The samples were immediately placed on ice in a cooler. Standard chain-of-custody (COC) procedures were used during sampling and transportation to either Pace in Mount Juliet, Tennessee (via FEDEX) or Summit in Golden, Colorado (via FEDEX). Site soil samples were primarily analyzed for electrical conductivity (EC), sodium adsorption ratio (SAR), pH, and arsenic. Kleinfelder used an EOS Arrow 100 Submeter Global Navigation Satellite System (GNSS) receiver to record latitude and longitude at the sample location. Sample locations are shown on **Figure 2.**

Sampling equipment (i.e., stainless-steel hand trowel, soil sampler, etc.) was washed with a solution of Liquinox® detergent, rinsed with tap water, and then distilled water between samples. The background soil samples are summarized in **Table 1**.

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

4 RESULTS

The background soil sample analytical results exceeded the ECMC Table 915-1 RSSLs for EC, SAR, pH, and arsenic.

- EC was detected at concentrations above the ECMC Table 915-1 cleanup concentrations in twelve (12) of the thirty-three (33) background soil samples with the highest concentration at sample (20220414_ACMcLaughlin100_BG02@GS) at 14.0 mmhos/cm. The second highest EC concentration was demonstrated at sample (20210908_BG07@7ft6in) at 10.4 mmhos/cm.
- SAR was detected at a concentration above the ECMC Table 915-1 cleanup concentrations in one (1) of the thirty-three (33) samples at sample (20220414_ACMcLaughlin100_BG02@GS) with a concentration of 43.5 SAR units. All other SAR concentrations were below ECMC Table 915-1 cleanup concentrations.
- pH was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at eight (8) of the thirty-three (33) sample locations with concentrations ranging from 7.71 to 9.04 pH units.
- Arsenic was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at all thirty-three (33) sample locations with measurements ranging from 4.16 mg/kg to 8.08 mg/kg.

Analytical results are summarized in **Table 2** and were compared to ECMC Table 915-1 RSSLs as requested by Whiting and Scout. Sample locations are summarized in **Table 1** and shown on **Figure 2.**

5 CONCLUSIONS AND RECOMMENDATIONS

Results from the background sampling performed in Rio Blanco County indicated that soils in the project area have higher levels of naturally occurring EC, pH, and arsenic. SAR concentrations were not widely observed to be elevated in background conditions.

- EC was demonstrated at a maximum concentration of 14.0 mmhos/cm at background sample (20220414_ACMcLaughlin100_BG02@GS). This EC sample result is considerably elevated when compared to the other background data and has been identified as a high value outlier and it would not be used in comparison to site-specific analytical results associated with the orphan locations. The second highest EC concentration was demonstrated at background sample (20210908_BG07@7ft6in) at 10.4 mmhos/cm and is considered representative of background conditions and will be compared to the site-specific analytical results associated with the orphan locations.
- pH was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at eight (8) of the thirty-three (33) background sample locations with concentrations ranging from 7.71 to 9.04 pH units. This range is considered representative of background conditions and will be compared to the site-specific analytical results associated with the orphan locations.
- Arsenic was detected at concentrations above the ECMC Table 915-1 cleanup concentrations at all thirty-three (33) background sample location with measurements ranging from 4.16 mg/kg to 8.08 mg/kg. As allowed in ECMC Table 915-1, the adjusted site-specific background range multiplied by 1.25 for arsenic is 4.16 mg/kg to 10.1 mg/kg. This range is considered representative of background conditions and will be compared to the site-specific analytical results associated with the orphan locations.

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

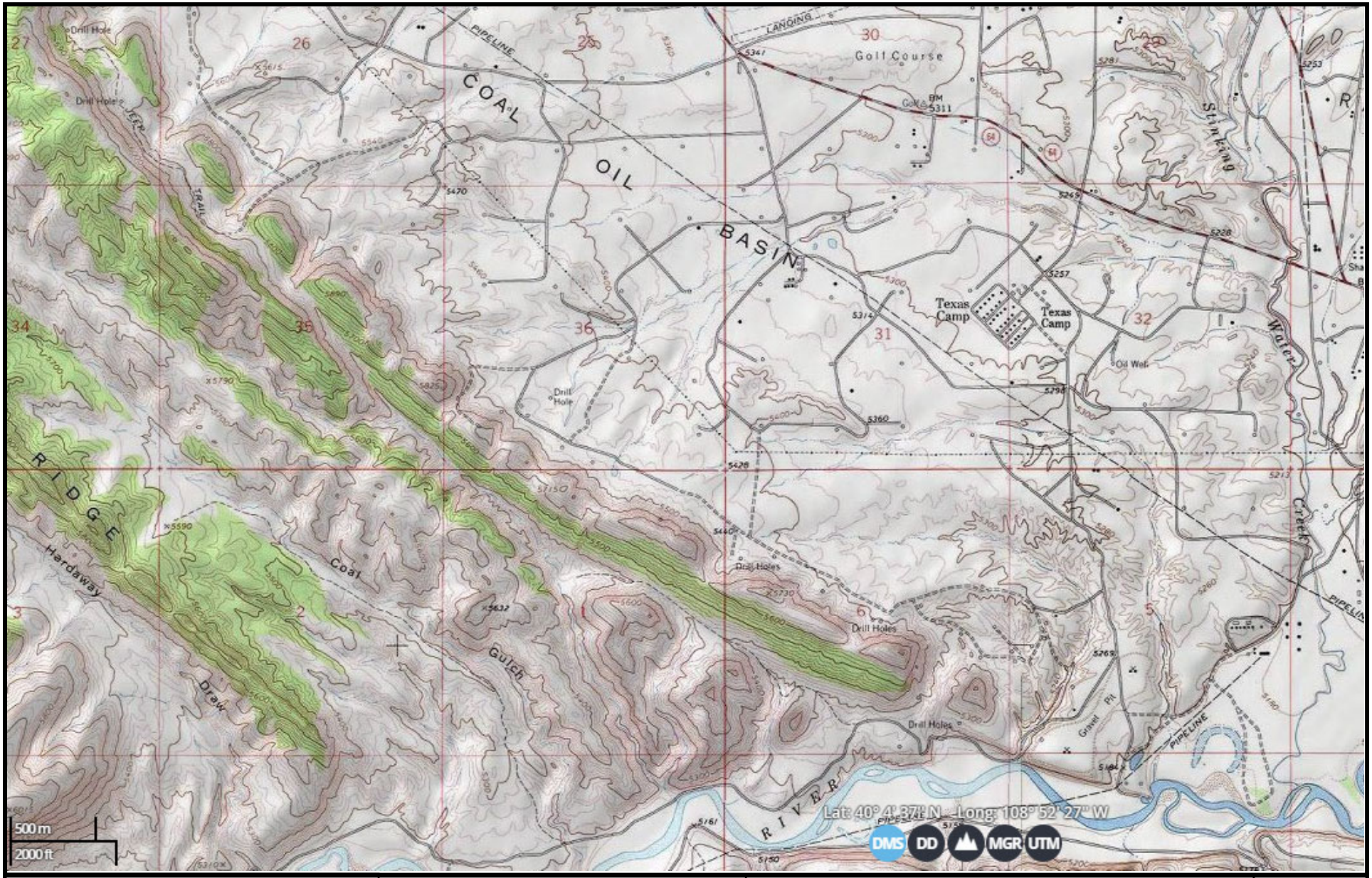
6 LIMITATIONS

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies, including subsurface studies or field tests, should be performed to reduce uncertainties. Acceptance of this report will indicate that Scout has reviewed the document and determined that it does not need or want a greater level of service than provided.

During the course of the performance of Kleinfelder's services, hazardous materials may have been discovered. Kleinfelder assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials. Nothing contained in this report should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, or generator, or person who arranges for disposal, transport, storage, or treatment of hazardous materials within the meaning of any governmental statute, regulation, or order. Scout is solely responsible for directing notification of all governmental agencies, and the public at large, of the existence, release, treatment, or disposal of any hazardous materials observed at the project site, either before or during performance of Kleinfelder's services. Scout is responsible for directing all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder’s services.

FIGURES

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602



KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

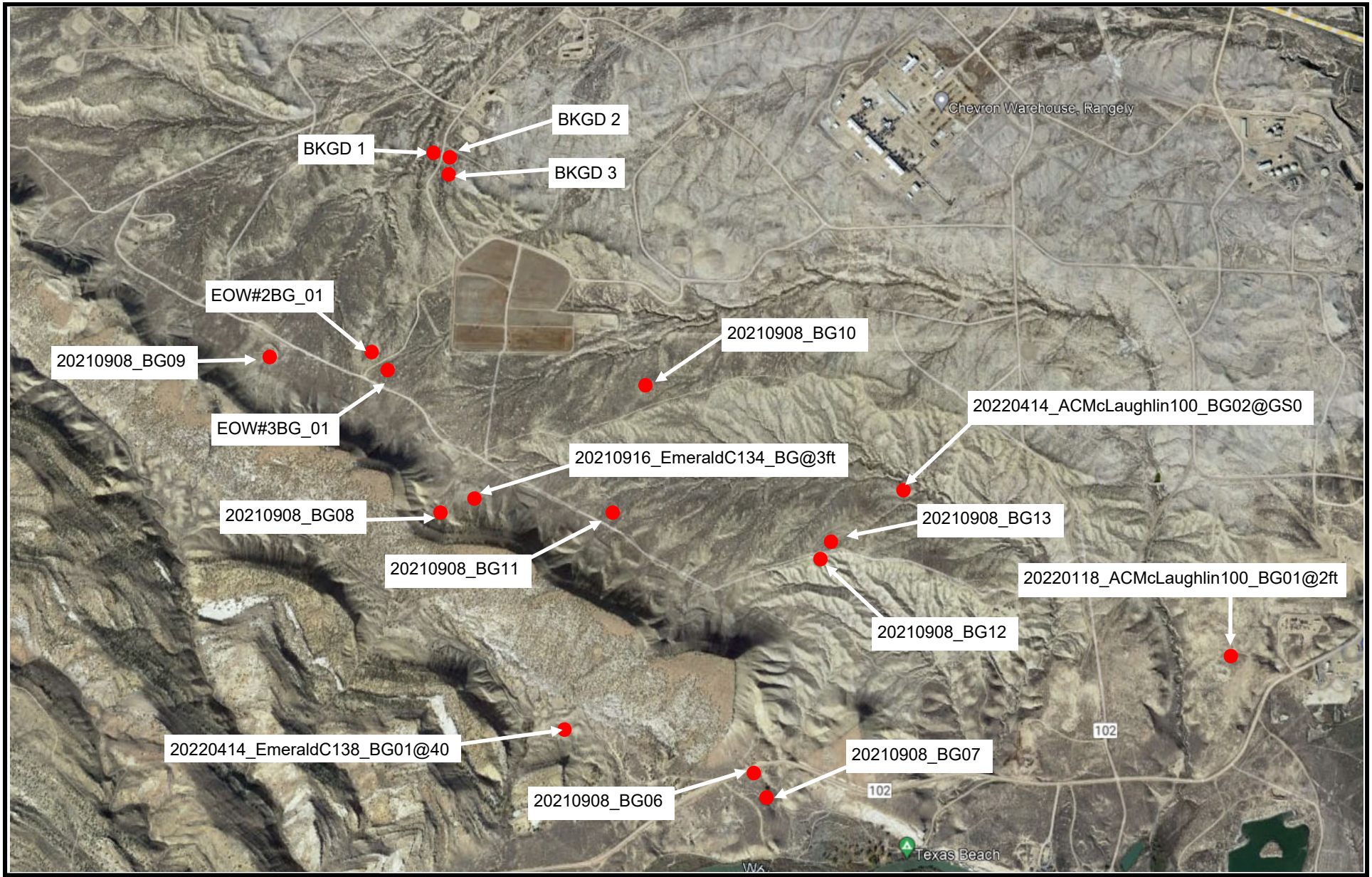
PROJECT NO.	20231969.001A
DRAWN:	1/22/2023
DRAWN BY:	I. Rowland
CHECKED BY:	J. Veith
FILE NAME:	Topographical Map.pub

Topographical Map

SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO

FIGURE

1



KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT NO.	20231969.001A
DRAWN:	1/15/2024
DRAWN BY:	I. Rowland
CHECKED BY:	J. Veith
FILE NAME:	Background Sample Map.pub

Sample Locations

SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
ORPHAN LOCATION CLOSURES
RIO BLANCO COUNTY, COLORADO

FIGURE

2

TABLES

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

TABLE 1 - SAMPLE SUMMARY
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Sample ID	Collected By	Latitude	Longitude	Legal Description
BKGD 1	HRL	40.098478	-108.896565	NESE, Section 36, Township 2 North, Range 103 West
BKGD 2	HRL	40.098590	-108.895877	NESE, Section 36, Township 2 North, Range 103 West
BKGD 3	HRL	40.097618	-108.895599	NESE, Section 36, Township 2 North, Range 103 West
20210908_BG06	Kleinfelder	40.079499	-108.882823	SWSE, Section 6, Township 1 North, Range 102 West
20210908_BG07	Kleinfelder	40.079070	-108.882744	SWSE, Section 6, Township 1 North, Range 102 West
20210908_BG08	Kleinfelder	40.087282	-108.895985	SENE, Section 1, Township 1 North, Range 103 West
20210908_BG09	Kleinfelder	40.091837	-108.902727	NWNE, Section 1, Township 1 North, Range 103 West
20210908_BG10	Kleinfelder	40.091029	-108.887703	NENW, Section 6, Township 1 North, Range 102 West
20210908_BG11	Kleinfelder	40.087292	-108.888536	SENW, Section 6, Township 1 North, Range 102 West
20210908_BG12	Kleinfelder	40.086091	-108.880501	SENE, Section 6, Township 1 North, Range 102 West
20210908_BG13	Kleinfelder	40.086774	-108.880004	SENE, Section 6, Township 1 North, Range 102 West
EOW#2BG_01	Kleinfelder	40.092252	-108.898605	SESE, Section 36, Township 2 North, Range 103 West
EOW#3BG_01	Kleinfelder	40.091621	-108.897795	NENE, Section 1, Township 1 North, Range 103 West
20210916_Emerald C134_BG@3FT	Kleinfelder	40.087717	-108.894428	L2, Section 6, Township 1 North, Range 102 West
20220414_Emerald C138_BG01@40in	Kleinfelder	40.080785	-108.890262	SESW, Section 6, Township 1 North, Range 102 West
20220118_ACMcLaughlin 100_BG01@2ft	Kleinfelder	40.083384	-108.863926	NWSE, Section 5, Township 1 North, Range 102 West
20220414_AC McLaughlin 100_BG02@GS	Kleinfelder	40.088168	-108.876886	SENE, Section 6, Township 1 North, Range 102 West

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	BKGD 1 (HRL)	BKGD 2 (HRL)	BKGD 3 (HRL)	20220118_ACMcLaughlin100_BG01@2 (KLF)	20220414_ACMcLaughlin100_BG02@GS (KLF)	EOW#2BG_01 (KLF)	EOW#3BG_01 (KLF)	20210916_EmeraldC134_BG@3ft (KLF)	20220414_EmeraldC138_BG01@40in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	NM	NM	NM	NM	NM	ND	ND	NM	NM
GRO (C6-C10)		NM	NM	NM	NM	NM	ND	ND	NM	NM
DRO (C10-C28)		NM	NM	NM	NM	NM	ND	ND	NM	NM
ORO (C35)		NM	NM	NM	NM	NM	ND	ND	NM	NM
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	0.340	0.178	2.53	NM	14.0	2.11	0.544	0.186	4.69
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.315	0.158	0.26	2.17	43.5	0.242	3.15	2.48	0.797
pH (by saturated paste method)	6–8.3 pH units	8.35	8.66	7.89	NM	8.10	8.05	8.42	NM	7.71
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	0.185	0.235	NM	NM
Organic Compounds in Soils										
benzene	1.2	NM	NM	NM	NM	NM	ND	ND	NM	NM
toluene	490	NM	NM	NM	NM	NM	ND	ND	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	ND	ND	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	ND	ND	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	ND	ND	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	ND	ND	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	ND	ND	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	ND	ND	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	ND	ND	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	ND	ND	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	ND	ND	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	ND	ND	NM	NM
chrysene	110	NM	NM	NM	NM	NM	ND	ND	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	ND	ND	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	ND	ND	NM	NM
fluorene	240	NM	NM	NM	NM	NM	ND	ND	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	ND	ND	NM	NM
pyrene	180	NM	NM	NM	NM	NM	ND	ND	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	ND	ND	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	ND	ND	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	ND	ND	NM	NM
Metals in Soils										
arsenic	0.68	8.08	6.41	5.56	NM	NM	6.18	4.67	NM	8.34
barium	15000	NM	NM	NM	NM	NM	66.1	101	NM	NM
cadmium	71	NM	NM	NM	NM	NM	ND	0.252	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	ND	ND	NM	NM
copper	3100	NM	NM	NM	NM	NM	12.0	12.5	NM	NM
lead	400	NM	NM	NM	NM	NM	13.8	13.4	NM	NM
nickel	1500	NM	NM	NM	NM	NM	16.9	14.5	NM	NM
selenium	390	NM	NM	NM	NM	NM	1.84	1.33	NM	NM
silver	390	NM	NM	NM	NM	NM	0.0872	0.0939	NM	NM
zinc	23000	NM	NM	NM	NM	NM	71.8	59.2	NM	NM

Greater than ECMC Table 915-1 Standards

ND = not detected
NM = not measured

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	20210908_BG06@1ft (KLF)	20210908_BG06@3ft (KLF)	20210908_BG06@6ft10in (KLF)	20210908_BG07@1ft (KLF)	20210908_BG07@3ft (KLF)	20210908_BG07@7ft6in (KLF)	20210908_BG08@1ft (KLF)	20210908_BG08@3ft (KLF)	20210908_BG08@7ft1in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
GRO (C6-C10)		ND	ND	ND	ND	ND	ND	ND	ND	ND
DRO (C10-C28)		ND	ND	ND	ND	ND	ND	ND	ND	ND
ORO (C35)		ND	ND	ND	ND	ND	ND	ND	ND	ND
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	1.56	3.61	5.88	2.28	5.36	10.4	2.00	3.08	4.92
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.299	0.551	2.45	0.466	1.35	1.88	0.0876	0.206	0.286
pH (by saturated paste method)	6–8.3 pH units	8.52	8.29	8.47	9.04	8.34	8.41	7.94	8.12	8.16
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	NM	NM	NM	NM
Organic Compounds in Soils										
benzene	1.2	NM	NM	NM	NM	NM	NM	NM	NM	NM
toluene	490	NM	NM	NM	NM	NM	NM	NM	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	NM	NM	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	NM	NM	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	NM	NM	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	NM	NM	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
chrysene	110	NM	NM	NM	NM	NM	NM	NM	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluorene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
pyrene	180	NM	NM	NM	NM	NM	NM	NM	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	NM	NM	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	NM	NM	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	NM	NM	NM	NM
Metals in Soils										
arsenic	0.68	5.01	6.33	5.21	4.76	4.72	6.12	6.36	5.99	6.14
barium	15000	NM	NM	NM	NM	NM	NM	NM	NM	NM
cadmium	71	NM	NM	NM	NM	NM	NM	NM	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	NM	NM	NM	NM
copper	3100	NM	NM	NM	NM	NM	NM	NM	NM	NM
lead	400	NM	NM	NM	NM	NM	NM	NM	NM	NM
nickel	1500	NM	NM	NM	NM	NM	NM	NM	NM	NM
selenium	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
silver	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
zinc	23000	NM	NM	NM	NM	NM	NM	NM	NM	NM

Greater than ECMC Table 915-1 Standards

ND = not detected
NM = not measured

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	20210908_BG09@1ft (KLF)	20210908_BG09@3ft (KLF)	20210908_BG09@7ft7in (KLF)	20210908_BG10@1ft (KLF)	20210908_BG10@3ft (KLF)	20210908_BG10@7ft2in (KLF)	20210908_BG11@1ft (KLF)	20210908_BG11@3ft (KLF)	20210908_BG11@6ft8in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	ND	ND	ND	ND	ND	ND	ND	ND	ND
GRO (C6-C10)		ND	ND	ND	ND	ND	ND	ND	ND	ND
DRO (C10-C28)		ND	ND	ND	ND	ND	ND	ND	ND	ND
ORO (C35)		ND	ND	ND	ND	ND	ND	ND	ND	ND
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	2.29	4.22	9.01	0.244	3.24	5.18	1.72	1.64	2.45
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.182	0.466	0.880	0.120	0.189	0.512	0.00596	0.00951	0.0899
pH (by saturated paste method)	6–8.3 pH units	8.08	8.19	8.05	7.95	7.96	8.11	8.01	7.98	8.05
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	NM	NM	NM	NM
Organic Compounds in Soils										
benzene	1.2	NM	NM	NM	NM	NM	NM	NM	NM	NM
toluene	490	NM	NM	NM	NM	NM	NM	NM	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	NM	NM	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	NM	NM	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	NM	NM	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	NM	NM	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	NM	NM	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	NM	NM	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
chrysene	110	NM	NM	NM	NM	NM	NM	NM	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
fluorene	240	NM	NM	NM	NM	NM	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	NM	NM	NM	NM
pyrene	180	NM	NM	NM	NM	NM	NM	NM	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	NM	NM	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	NM	NM	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	NM	NM	NM	NM
Metals in Soils										
arsenic	0.68	5.43	5.67	5.11	5.06	6.46	6.50	5.76	5.52	5.41
barium	15000	NM	NM	NM	NM	NM	NM	NM	NM	NM
cadmium	71	NM	NM	NM	NM	NM	NM	NM	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	NM	NM	NM	NM
copper	3100	NM	NM	NM	NM	NM	NM	NM	NM	NM
lead	400	NM	NM	NM	NM	NM	NM	NM	NM	NM
nickel	1500	NM	NM	NM	NM	NM	NM	NM	NM	NM
selenium	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
silver	390	NM	NM	NM	NM	NM	NM	NM	NM	NM
zinc	23000	NM	NM	NM	NM	NM	NM	NM	NM	NM

Greater than ECMC Table 915-1 Standards

ND = not detected
NM = not measured

TABLE 2 - SOIL ANALYTICAL RESULTS
SCOUT ENERGY MANAGEMENT, LLC
RANGELY AREA BACKGROUND SAMPLING
RIO BLANCO COUNTY, COLORADO

Contaminant of Concern	Cleanup Concentration (mg/kg unless otherwise noted)	20210908_BG12@1ft (KLF)	20210908_BG12@3ft (KLF)	20210908_BG12@7ft8in (KLF)	20210908_BG13@1ft (KLF)	20210908_BG13@3ft (KLF)	20210908_BG13@7ft4in (KLF)
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500	ND	ND	ND	ND	ND	ND
GRO (C6-C10)		ND	ND	ND	ND	ND	ND
DRO (C10-C28)		ND	ND	ND	ND	ND	ND
ORO (C35)		ND	ND	ND	ND	ND	ND
Soils and Groundwater - liquid hydrocarbons including condensate and oil	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits	Below Visual Detection Limits
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	2.05	2.48	5.41	2.36	4.31	5.85
Sodium adsorption ratio (SAR) (by saturated paste method)	<6 SAR units	0.0198	0.0654	0.681	0.0472	0.327	0.736
pH (by saturated paste method)	6–8.3 pH units	8.06	8.08	8.29	8.06	8.23	8.29
Boron (hot water soluble soil extract)	2 mg/l	NM	NM	NM	NM	NM	NM
Organic Compounds in Soils							
benzene	1.2	NM	NM	NM	NM	NM	NM
toluene	490	NM	NM	NM	NM	NM	NM
ethylbenzene	5.8	NM	NM	NM	NM	NM	NM
xylenes (sum of o-, m- and p-isomers = total xylenes)	58	NM	NM	NM	NM	NM	NM
1,2,4-trimethylbenzene	30	NM	NM	NM	NM	NM	NM
1,3,5-trimethylbenzene	27	NM	NM	NM	NM	NM	NM
acenaphthene	360	NM	NM	NM	NM	NM	NM
anthracene	1800	NM	NM	NM	NM	NM	NM
benz(a)anthracene	1.1	NM	NM	NM	NM	NM	NM
benzo(b)fluoranthene	1.1	NM	NM	NM	NM	NM	NM
benzo(k)fluoranthene	11	NM	NM	NM	NM	NM	NM
benzo(a)pyrene	0.11	NM	NM	NM	NM	NM	NM
chrysene	110	NM	NM	NM	NM	NM	NM
dibenzo(a,h)anthracene	0.11	NM	NM	NM	NM	NM	NM
fluoranthene	240	NM	NM	NM	NM	NM	NM
fluorene	240	NM	NM	NM	NM	NM	NM
indeno(1,2,3-cd)pyrene	1.1	NM	NM	NM	NM	NM	NM
pyrene	180	NM	NM	NM	NM	NM	NM
1-methylnaphthalene	18	NM	NM	NM	NM	NM	NM
2-methylnaphthalene	24	NM	NM	NM	NM	NM	NM
naphthalene	2	NM	NM	NM	NM	NM	NM
Metals in Soils							
arsenic	0.68	5.71	4.97	4.16	6.60	6.05	7.19
barium	15000	NM	NM	NM	NM	NM	NM
cadmium	71	NM	NM	NM	NM	NM	NM
chromium (VI)	0.3	NM	NM	NM	NM	NM	NM
copper	3100	NM	NM	NM	NM	NM	NM
lead	400	NM	NM	NM	NM	NM	NM
nickel	1500	NM	NM	NM	NM	NM	NM
selenium	390	NM	NM	NM	NM	NM	NM
silver	390	NM	NM	NM	NM	NM	NM
zinc	23000	NM	NM	NM	NM	NM	NM

Greater than ECMC Table 915-1 Standards

ND = not detected
NM = not measured

APPENDIX A
LABORATORY ANALYTICAL RESULTS

KLEINFELDER 707 17th Street, Suite 3000, Denver, CO 80202 p | 303.237.6601 f | 303.237.6602

ANALYTICAL REPORT

January 04, 2021

HRL Compliance Solutions- CO

Sample Delivery Group:	L1298013
Samples Received:	12/17/2020
Project Number:	WHITING-EMERALD (BKG
Description:	Whitig Oil & Gas-Emerald Field(BKGDS)
Site:	EMERALD FIELD
Report To:	Kris Rowe 2385 F ½ Road Grand Junction, CO 81505

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

BKGD 1 L1298013-01 Solid

Collected by	Collected date/time	Received date/time
Matt Smith	12/16/20 10:30	12/17/20 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1596610	1	12/29/20 10:28	12/29/20 10:28	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1596673	1	12/31/20 14:00	12/31/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1597020	1	12/24/20 10:00	12/24/20 20:00	JRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1596935	5	12/23/20 19:05	12/23/20 22:22	LD	Mt. Juliet, TN

BKGD 2 L1298013-02 Solid

Collected by	Collected date/time	Received date/time
Matt Smith	12/16/20 11:30	12/17/20 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1596610	1	12/29/20 10:31	12/29/20 10:31	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1596673	1	12/31/20 14:00	12/31/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1597020	1	12/24/20 10:00	12/24/20 20:00	JRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1596935	5	12/23/20 19:05	12/23/20 22:38	LD	Mt. Juliet, TN

BKGD 3 L1298013-03 Solid

Collected by	Collected date/time	Received date/time
Matt Smith	12/16/20 12:15	12/17/20 10:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1596610	1	12/29/20 10:34	12/29/20 10:34	KMG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1596673	1	12/31/20 14:00	12/31/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1597020	1	12/24/20 10:00	12/24/20 20:00	JRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1596935	5	12/23/20 19:05	12/23/20 22:41	LD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward

Chris Ward
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.315		1	12/29/2020 10:28	WG1596610

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	T8	1	12/31/2020 19:46	WG1596673

Sample Narrative:

L1298013-01 WG1596673: 8.35 at 19.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	340		10.0	1	12/24/2020 20:00	WG1597020

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.08		1.00	5	12/23/2020 22:22	WG1596935

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.158		1	12/29/2020 10:31	WG1596610

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.66	T8	1	12/31/2020 19:46	WG1596673

Sample Narrative:

L1298013-02 WG1596673: 8.66 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	178		10.0	1	12/24/2020 20:00	WG1597020

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.41		1.00	5	12/23/2020 22:38	WG1596935

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.260		1	12/29/2020 10:34	WG1596610

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.89	T8	1	12/31/2020 19:46	WG1596673

Sample Narrative:

L1298013-03 WG1596673: 7.89 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2530		10.0	1	12/24/2020 20:00	WG1597020

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.56		1.00	5	12/23/2020 22:41	WG1596935

L1298001-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1298001-01 12/31/20 19:46 • (DUP) R3608876-2 12/31/20 19:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.92	7.92	1	0.000		1

Sample Narrative:

OS: 7.92 at 19.6C

DUP: 7.92 at 19.2C

L1298013-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1298013-01 12/31/20 19:46 • (DUP) R3608876-3 12/31/20 19:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.35	8.38	1	0.359		1

Sample Narrative:

OS: 8.35 at 19.2C

DUP: 8.38 at 19.3C

Laboratory Control Sample (LCS)

(LCS) R3608876-1 12/31/20 19:46

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.06 at 18.7C

Method Blank (MB)

(MB) R3607214-1 12/24/20 20:00

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Laboratory Control Sample (LCS)

(LCS) R3607214-2 12/24/20 20:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	483	486	101	85.0-115	

Method Blank (MB)

(MB) R3606850-1 12/23/20 22:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3606850-2 12/23/20 22:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.5	93.5	80.0-120	

L1298013-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1298013-01 12/23/20 22:22 • (MS) R3606850-5 12/23/20 22:31 • (MSD) R3606850-6 12/23/20 22:35

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	20.0	8.08	97.6	96.6	89.6	88.5	5	75.0-125			1.06	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	KY90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA

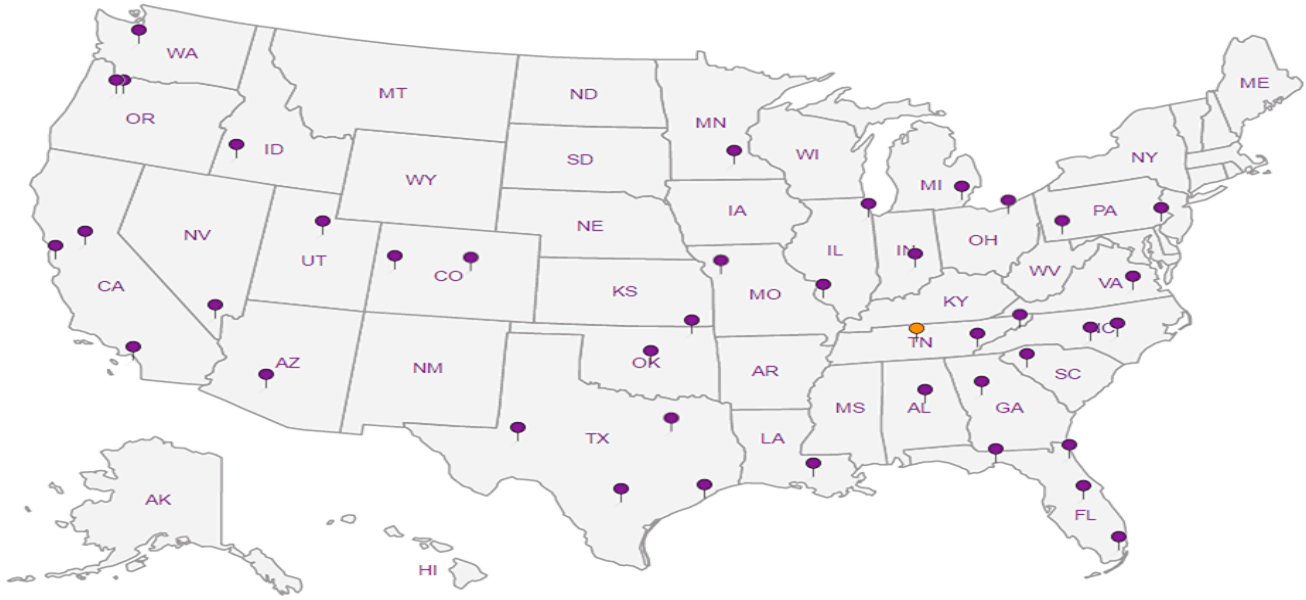
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Client:	Billing Info:
HRL Compliance Solutions Inc. 2385 F 1/2 RD Grand Junction, CO 81505	HRL Compliance Solutions 2385 F ½ Road Grand Junction, CO 81505 Quote #: HRLCSCO- 042015S
Report To: Kris Rowe/Matt Smith	E-Mail: Krowe@hrlcomp.com

Page ____of_____

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Ph: 615-758-5858
Ph: 800-767-585
Fax: 615-758-585

H056

Project Description:	City/State Collected:
Whiting Oil & Gas- Emerald Field (BKGDS)	COLORADO

Phone: 970-243-3271 Fax: 970-243-4380	Client Project #: Whiting - Emerald (BKGDS)	Lab Project #
Collected By: Matt Smith	Site/Facility ID: Emerald Field	P.O. #
Collected By (Signature): MS Immediately Packed on Ice N_____ Y_X___	*Rush* ? (lab must be notified) _____Same Day--------- (200%) ____ Next Day---------- (100%) _____Two Day----------(50%) _____Three Day---------(25%)	Date Results Needed: Standard 5 Day TAT Email? ___No _X_Yes Fax? _X_No ___Yes

L#
Table #
Acct #: HRLCSCO 129-8013
Template:
Prelogin:
TSR: Chris Ward
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. Of Cntrs	SAR/EC/pH	Arsenic									Rem/Contaminant	Sample #
BKGD 1	Grab	SS	0-12"	12/16/2020	10:30	1	X	X										-01
BKGD 2	Grab	SS	0-12"	12/16/2020	11:30	1	X	X										02
BKGD 3	Grab	SS	0-12"	12/16/2020	12:15	1	X	X										03

*Matrix SS-Soil GW-Groundwater WW-WasteWater DW-Drinking Water OT-Other_____

Remarks: Keep soil for possible additional analysis.

pH_____ Temp_____
Flow_____ Other_____

Hold #

Relinquished by (Sign)	Date:	Time:	Relinquished by (Sign)		Samples Returned Via __UPS ___FedEx Courier	Condition: (Lab Use)
Relinquished by (Sign)	Date: 12/16/20	Time: 1700	Relinquished by (Sign)		Temp: °C -5+1=6 # Bot	COC Seal Intact ___Y ____N
Relinquished by (Sign)	Date:	Time:	Received for lab by (Sign): MFappas		Date: 12-17-20 Time: 1030	pH Checked / NCF:

1676 2750 5160 3total

RAD SCREEN: <0.5 mR/hr

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

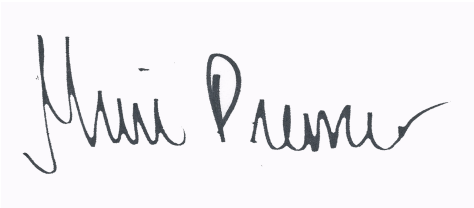
August 09, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Rangely Sampling
Work Order #2107461

Enclosed are the results of analyses for samples received by Summit Scientific on 07/30/21 11:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EOW#2BG_01	2107461-01	Soil	07/27/21 14:15	07/30/21 11:25
EOW#3BG_01	2107461-02	Soil	07/27/21 14:55	07/30/21 11:25

Summit Scientific

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

Summit Scientific

2107461

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Whiting Oil + Gas (from Kleinfelder)
Address: 707 17th St Suite 3000
City/State/Zip: Denver CO 80202
Phone: 970 309 6553
Sampler Name: JORDAN VEITH

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Rangely Sampling
Project Number: Pending

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	CAGCC 915-1								
1	EOW#2BG-01	7/27/2021	1415	3			X			X			X								
2	EOW#3BG-01	7/27/2021	1455	3			X			X			X								
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	7/27/2021 18:30	[signature]	7/30/21 1125
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard X
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 5
Samples Intact: (Yes) No

Notes:

2107461

Sample Receipt Checklist

S2 Work Order_____

Client: Whiting Oil + Gas Client Project ID: Rangely Sampling

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: 2819 2500 1200

[ ] [ ] [✓] [ ] [ ]

Matrix (check all that apply): [ ] Air [✓] Soil/Solid [ ] Water [ ] Other:_____ (Describe)

Temp (°C)	5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB	[signature]	7/30/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#2BG_01

2107461-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEH0009	08/02/21	08/05/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*99.4 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.6 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEH0010	08/02/21	08/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*86.1 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#2BG_01

2107461-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEH0001	08/02/21	08/03/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*61.9 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*46.3 %*	*40-150*		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.185**	0.0100	mg/L	1	BEH0004	08/02/21	08/03/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#2BG_01
2107461-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	**6.18**	0.210	mg/kg dry	1	BEH0003	08/02/21	08/03/21	EPA 6020B
Barium	**66.1**	0.419	"	"	"	"	"	"
Cadmium	ND	0.210	"	"	"	"	"	"
Copper	**12.0**	0.419	"	"	"	"	"	"
Lead	**13.8**	0.210	"	"	"	"	"	"
Nickel	**16.9**	0.419	"	"	"	"	"	"
Selenium	**1.84**	0.273	"	"	"	"	"	"
Silver	**0.0872**	0.0210	"	"	"	"	"	"
Zinc	**71.8**	0.419	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEH0080	08/05/21	08/06/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**381**	0.0524	mg/L dry	1	BEH0008	08/02/21	08/03/21	EPA 6020B	
Magnesium	**84.0**	0.0524	"	"	"	"	"	"	
Sodium	**20.0**	0.0524	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.242**	0.00100	units	1	BEH0077	08/05/21	08/05/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#2BG_01

2107461-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	**95.4**		%	1	BEH0005	08/02/21	08/03/21	Calculation

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.11**	0.0100	mmhos/cm	1	BEH0032	08/03/21	08/03/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **07/27/21 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.05**		pH Units	1	BEH0031	08/03/21	08/03/21	EPA 9045D	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#3BG_01

2107461-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEH0009	08/02/21	08/05/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.5 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEH0010	08/02/21	08/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*82.0 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#3BG_01

2107461-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEH0001	08/02/21	08/03/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*59.1 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*50.6 %*	*40-150*		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.235**	0.0100	mg/L	1	BEH0004	08/02/21	08/03/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#3BG_01

2107461-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	**4.67**	0.211	mg/kg dry	1	BEH0003	08/02/21	08/03/21	EPA 6020B
Barium	**101**	0.423	"	"	"	"	"	"
Cadmium	**0.252**	0.211	"	"	"	"	"	"
Copper	**12.5**	0.423	"	"	"	"	"	"
Lead	**13.4**	0.211	"	"	"	"	"	"
Nickel	**14.5**	0.423	"	"	"	"	"	"
Selenium	**1.33**	0.275	"	"	"	"	"	"
Silver	**0.0939**	0.0211	"	"	"	"	"	"
Zinc	**59.2**	0.423	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEH0080	08/05/21	08/06/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**22.0**	0.0528	mg/L dry	1	BEH0008	08/02/21	08/03/21	EPA 6020B	
Magnesium	**7.83**	0.0528	"	"	"	"	"	"	
Sodium	**67.5**	0.0528	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**3.15**	0.00100	units	1	BEH0077	08/05/21	08/05/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

EOW#3BG_01

2107461-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	**94.7**		%	1	BEH0005	08/02/21	08/03/21	Calculation

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.544**	0.0100	mmhos/cm	1	BEH0032	08/03/21	08/03/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **07/27/21 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.42**		pH Units	1	BEH0031	08/03/21	08/03/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0009 - EPA 5030 Soil MS										
Blank (BEH0009-BLK1)				Prepared: 08/02/21 Analyzed: 08/05/21						
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	*0.0421*		*"*	*0.0400*		*105*	*23-173*			
Surrogate: Toluene-d8	*0.0391*		*"*	*0.0400*		*97.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0368*		*"*	*0.0400*		*91.9*	*21-167*			
LCS (BEH0009-BS1)				Prepared: 08/02/21 Analyzed: 08/05/21						
Benzene	0.0651	0.0020	mg/kg	0.0750		86.8	70-130			
Toluene	0.0661	0.0050	"	0.0750		88.2	70-130			
Ethylbenzene	0.0819	0.0050	"	0.0750		109	70-130			
m,p-Xylene	0.162	0.010	"	0.150		108	70-130			
o-Xylene	0.0835	0.0050	"	0.0750		111	70-130			
1,2,4-Trimethylbenzene	0.0833	0.0050	"	0.0750		111	70-130			
1,3,5-Trimethylbenzene	0.0815	0.0050	"	0.0750		109	70-130			
Naphthalene	0.0778	0.0038	"	0.0750		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0429*		*"*	*0.0400*		*107*	*23-173*			
Surrogate: Toluene-d8	*0.0398*		*"*	*0.0400*		*99.4*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0361*		*"*	*0.0400*		*90.2*	*21-167*			
Matrix Spike (BEH0009-MS1)		**Source: 2107462-01**		Prepared: 08/02/21 Analyzed: 08/05/21						
Benzene	0.0561	0.0020	mg/kg	0.0750	ND	74.8	70-130			
Toluene	0.0553	0.0050	"	0.0750	ND	73.8	70-130			
Ethylbenzene	0.0659	0.0050	"	0.0750	ND	87.8	70-130			
m,p-Xylene	0.129	0.010	"	0.150	ND	85.7	70-130			
o-Xylene	0.0677	0.0050	"	0.0750	ND	90.3	70-130			
1,2,4-Trimethylbenzene	0.0628	0.0050	"	0.0750	ND	83.7	70-130			
1,3,5-Trimethylbenzene	0.0621	0.0050	"	0.0750	ND	82.8	70-130			
Naphthalene	0.0833	0.0038	"	0.0750	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0451*		*"*	*0.0400*		*113*	*23-173*			
Surrogate: Toluene-d8	*0.0394*		*"*	*0.0400*		*98.6*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0364*		*"*	*0.0400*		*90.9*	*21-167*			

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0009 - EPA 5030 Soil MS										
Matrix Spike Dup (BEH0009-MSD1)		**Source: 2107462-01**		Prepared: 08/02/21 Analyzed: 08/05/21						
Benzene	0.0551	0.0020	mg/kg	0.0750	ND	73.5	70-130	1.83	30	
Toluene	0.0536	0.0050	"	0.0750	ND	71.4	70-130	3.20	30	
Ethylbenzene	0.0640	0.0050	"	0.0750	ND	85.4	70-130	2.86	30	
m,p-Xylene	0.126	0.010	"	0.150	ND	83.8	70-130	2.29	30	
o-Xylene	0.0662	0.0050	"	0.0750	ND	88.3	70-130	2.19	30	
1,2,4-Trimethylbenzene	0.0609	0.0050	"	0.0750	ND	81.2	70-130	3.11	30	
1,3,5-Trimethylbenzene	0.0605	0.0050	"	0.0750	ND	80.7	70-130	2.59	30	
Naphthalene	0.0797	0.0038	"	0.0750	ND	106	70-130	4.42	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0440*		*"*	*0.0400*		*110*	*23-173*			
Surrogate: Toluene-d8	*0.0392*		*"*	*0.0400*		*98.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0368*		*"*	*0.0400*		*92.1*	*21-167*			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0010 - EPA 3550A										
Blank (BEH0010-BLK1)				Prepared: 08/02/21 Analyzed: 08/05/21						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BEH0010-BS1)				Prepared: 08/02/21 Analyzed: 08/05/21						
C10-C28 (DRO)	533	50	mg/kg	500		107	70-130			
Matrix Spike (BEH0010-MS1)		**Source: 2107462-01**		Prepared: 08/02/21 Analyzed: 08/05/21						
C10-C28 (DRO)	545	50	mg/kg	500	16.9	106	70-130			
Matrix Spike Dup (BEH0010-MSD1)		**Source: 2107462-01**		Prepared: 08/02/21 Analyzed: 08/05/21						
C10-C28 (DRO)	617	50	mg/kg	500	16.9	120	70-130	12.4	20	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0001 - EPA 5030 Soil MS										
Blank (BEH0001-BLK1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	*0.0180*		*"*	*0.0333*		*54.1*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0189*		*"*	*0.0333*		*56.6*	*40-150*			
LCS (BEH0001-BS1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Acenaphthene	0.0235	0.00500	mg/kg	0.0333		70.5	31-137			
Anthracene	0.0247	0.00500	"	0.0333		74.2	30-120			
Benzo (a) anthracene	0.0259	0.00500	"	0.0333		77.6	30-120			
Benzo (a) pyrene	0.0210	0.00500	"	0.0333		63.0	30-120			
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333		63.2	30-120			
Benzo (k) fluoranthene	0.0207	0.00500	"	0.0333		62.1	30-120			
Chrysene	0.0259	0.00500	"	0.0333		77.6	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.4	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333		74.9	30-120			
Fluorene	0.0240	0.00500	"	0.0333		72.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333		67.4	30-120			
Pyrene	0.0253	0.00500	"	0.0333		75.9	35-142			
1-Methylnaphthalene	0.0261	0.00500	"	0.0333		78.2	35-142			
2-Methylnaphthalene	0.0223	0.00500	"	0.0333		67.0	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0262*		*"*	*0.0333*		*78.5*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0255*		*"*	*0.0333*		*76.5*	*40-150*			

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0001 - EPA 5030 Soil MS										
Matrix Spike (BEH0001-MS1)		**Source: 2107453-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Acenaphthene	0.0215	0.00500	mg/kg	0.0333	ND	64.4	31-137			
Anthracene	0.0218	0.00500	"	0.0333	ND	65.3	30-120			
Benzo (a) anthracene	0.0217	0.00500	"	0.0333	ND	65.0	30-120			
Benzo (a) pyrene	0.0176	0.00500	"	0.0333	ND	52.9	30-120			
Benzo (b) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.1	30-120			
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120			
Chrysene	0.0217	0.00500	"	0.0333	ND	65.0	30-120			
Dibenz (a,h) anthracene	0.0188	0.00500	"	0.0333	ND	56.4	30-120			
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120			
Fluorene	0.0220	0.00500	"	0.0333	ND	65.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333	ND	56.7	30-120			
Pyrene	0.0210	0.00500	"	0.0333	ND	63.1	35-142			
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.4	15-130			
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.6	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0224*		*"*	*0.0333*		*67.3*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0228*		*"*	*0.0333*		*68.4*	*40-150*			
Matrix Spike Dup (BEH0001-MSD1)		**Source: 2107453-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Acenaphthene	0.0219	0.00500	mg/kg	0.0333	ND	65.8	31-137	2.15	30	
Anthracene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	5.68	30	
Benzo (a) anthracene	0.0235	0.00500	"	0.0333	ND	70.6	30-120	8.29	30	
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	8.76	30	
Benzo (b) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	8.38	30	
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	7.94	30	
Chrysene	0.0235	0.00500	"	0.0333	ND	70.5	30-120	8.25	30	
Dibenz (a,h) anthracene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	10.5	30	
Fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	30-120	5.97	30	
Fluorene	0.0226	0.00500	"	0.0333	ND	67.8	30-120	2.74	30	
Indeno (1,2,3-cd) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	10.2	30	
Pyrene	0.0235	0.00500	"	0.0333	ND	70.5	35-142	11.1	30	
1-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.1	15-130	5.49	50	
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.0	15-130	3.50	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0242*		*"*	*0.0333*		*72.6*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0238*		*"*	*0.0333*		*71.4*	*40-150*			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0004 - EPA 3050B										
Blank (BEH0004-BLK1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Boron	ND	0.0100	mg/L							
LCS (BEH0004-BS1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Boron	4.52	0.0100	mg/L	5.00		90.5	80-120			
Duplicate (BEH0004-DUP1)		**Source: 2107456-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Boron	0.100	0.0100	mg/L		0.0975			2.61	20	
Matrix Spike (BEH0004-MS1)		**Source: 2107456-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Boron	4.05	0.0100	mg/L	5.00	0.0975	79.0	75-125			
Matrix Spike Dup (BEH0004-MSD1)		**Source: 2107456-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Boron	4.17	0.0100	mg/L	5.00	0.0975	81.4	75-125	2.93	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0003 - EPA 3050B										
Blank (BEH0003-BLK1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Selenium	ND	0.260	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
LCS (BEH0003-BS1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Arsenic	43.0	0.200	mg/kg wet	40.0		108	80-120			
Barium	41.2	0.400	"	40.0		103	80-120			
Cadmium	2.10	0.200	"	2.00		105	80-120			
Copper	40.9	0.400	"	40.0		102	80-120			
Lead	20.5	0.200	"	20.0		103	80-120			
Nickel	39.5	0.400	"	40.0		98.7	80-120			
Selenium	4.07	0.260	"	4.00		102	80-120			
Silver	2.00	0.0200	"	2.00		99.8	80-120			
Zinc	43.1	0.400	"	40.0		108	80-120			
Duplicate (BEH0003-DUP1)		**Source: 2107456-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Arsenic	1.16	0.276	mg/kg dry		1.19			2.79	20	
Barium	107	0.552	"		96.6			10.1	20	
Cadmium	0.120	0.276	"		0.119			0.336	20	
Copper	4.52	0.552	"		4.53			0.255	20	
Lead	6.74	0.276	"		5.55			19.5	20	
Nickel	4.34	0.552	"		4.38			0.834	20	
Selenium	0.643	0.359	"		0.725			12.1	20	
Silver	0.0207	0.0276	"		0.0216			4.09	20	
Zinc	18.5	0.552	"		19.3			3.99	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0003 - EPA 3050B										
Matrix Spike (BEH0003-MS1)		**Source: 2107456-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Arsenic	57.9	0.276	mg/kg dry	55.2	1.19	103	75-125			
Barium	159	0.552	"	55.2	96.6	113	75-125			
Cadmium	2.87	0.276	"	2.76	0.119	99.8	75-125			
Copper	58.3	0.552	"	55.2	4.53	97.3	75-125			
Lead	31.3	0.276	"	27.6	5.55	93.1	75-125			
Nickel	56.6	0.552	"	55.2	4.38	94.5	75-125			
Selenium	5.60	0.359	"	5.52	0.725	88.3	75-125			
Silver	2.62	0.0276	"	2.76	0.0216	94.0	75-125			
Zinc	77.4	0.552	"	55.2	19.3	105	75-125			
Matrix Spike Dup (BEH0003-MSD1)		**Source: 2107456-01**		Prepared: 08/02/21 Analyzed: 08/03/21						
Arsenic	55.6	0.276	mg/kg dry	55.2	1.19	98.6	75-125	4.01	25	
Barium	147	0.552	"	55.2	96.6	90.6	75-125	7.96	25	
Cadmium	2.76	0.276	"	2.76	0.119	95.7	75-125	3.95	25	
Copper	55.0	0.552	"	55.2	4.53	91.3	75-125	5.81	25	
Lead	30.2	0.276	"	27.6	5.55	89.3	75-125	3.36	25	
Nickel	53.5	0.552	"	55.2	4.38	88.9	75-125	5.59	25	
Selenium	5.51	0.359	"	5.52	0.725	86.7	75-125	1.62	25	
Silver	2.50	0.0276	"	2.76	0.0216	89.7	75-125	4.69	25	
Zinc	74.0	0.552	"	55.2	19.3	99.1	75-125	4.42	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0080 - 3060A_Mod										
Blank (BEH0080-BLK1)				Prepared: 08/05/21 Analyzed: 08/06/21						
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BEH0080-BS1)				Prepared: 08/05/21 Analyzed: 08/06/21						
Chromium, Hexavalent	26.2	0.30	mg/kg wet	25.0		105	80-120			
Duplicate (BEH0080-DUP1)		**Source: 2108053-05**		Prepared: 08/05/21 Analyzed: 08/06/21						
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BEH0080-MS1)		**Source: 2108053-05**		Prepared: 08/05/21 Analyzed: 08/06/21						
Chromium, Hexavalent	30.2	0.30	mg/kg dry	29.6	ND	102	75-125			
Matrix Spike Dup (BEH0080-MSD1)		**Source: 2108053-05**		Prepared: 08/05/21 Analyzed: 08/06/21						
Chromium, Hexavalent	30.2	0.30	mg/kg dry	29.6	ND	102	75-125	0.196	20	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0008 - General Preparation										
Blank (BEH0008-BLK1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEH0008-BS1)				Prepared: 08/02/21 Analyzed: 08/03/21						
Calcium	5.62	0.0500	mg/L wet	5.00		112	70-130			
Magnesium	5.06	0.0500	"	5.00		101	70-130			
Sodium	5.05	0.0500	"	5.00		101	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0005 - General Preparation										
Duplicate (BEH0005-DUP1)		**Source: 2107333-07**		Prepared: 08/02/21 Analyzed: 08/03/21						
% Solids	93.1		%		92.7			0.444	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0032 - General Preparation										
Blank (BEH0032-BLK1)				Prepared & Analyzed: 08/03/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEH0032-BS1)				Prepared & Analyzed: 08/03/21						
Specific Conductance (EC)	0.139	0.0100	mmhos/cm	0.150		92.5	90-110			
Duplicate (BEH0032-DUP1)		**Source: 2107456-01**		Prepared & Analyzed: 08/03/21						
Specific Conductance (EC)	0.461	0.0100	mmhos/cm		0.461			0.0651	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Rangely Sampling Project Number: [none] Project Manager: Vince DeCianne	**Reported:** 08/09/21 12:29

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEH0031 - General Preparation										
LCS (BEH0031-BS1)				Prepared & Analyzed: 08/03/21						
pH	9.33		pH Units	9.21		101	95-105			
Duplicate (BEH0031-DUP1)		**Source: 2107456-01**		Prepared & Analyzed: 08/03/21						
pH	8.24		pH Units		8.23			0.121	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 14, 2022

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: AC McLaughlin 100 Background
Work Order #2201271

Enclosed are the results of analyses for samples received by Summit Scientific on 01/24/22 11:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Summit Scientific

2201271

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: AC McLaughlin 100 Background
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20220118-ACMclaughlin 100-B(2)010 2ft	1/18/2022	10:30	3			X			X						X					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:
	1/18/2022 1900		
Relinquished by:	Date/Time:	Received by: 1/24/22	Date/Time: 1100
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 3.8 Samples Intact: Yes No

Notes:

S2

S2 Work Order# 2201271

Sample Receipt Checklist

Client: Whiting Oil & Gas Client Project ID: AC McLaughlin 100 Background

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ ☐ ✓ ☐ ☐ Airbill #: _____

Matrix (check all that apply): ☐ Air ✓ Soil/Solid ☐ Water ☐ Other: _____ (Describe)

Temp (°C)	3.8

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB — **Custodian Printed Name or Initials**

1/24/22 — **Date/Time**

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2201271
Work Order Number: 2201467

March 11, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 1 sample(s) on 1/28/2022 for the analyses presented in the following report.

Conductivity by SM 2510B
pH by SM 4500H+B
Sample Moisture (Percent Moisture)
Sodium Adsorption Ratio
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Date: *03/11/2022*

CLIENT: Summit Scientific
Project: 2201271
Work Order: 2201467

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2201467-001	20220118_AC McLaughlin 100BG01@2	01/18/2022 12:00 AM	01/28/2022 11:59 AM
2201467-001	20220118_AC McLaughlin 100BG01@2	01/18/2022 12:00 AM	01/28/2022 11:59 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2201467**

Date: **3/11/2022**

CLIENT: Summit Scientific

Project: 2201271

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

The following preparation methods were performed per client request:

Boron was prepared using Hot Water Soluble Method provided by client.

Conductivity, Sodium Adsorption Ratio, and pH were prepared using Saturated Paste Method provided by client.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2201467**
Date Reported: **3/11/2022**

Client: Summit Scientific
Collection Date: 1/18/2022
Project: 2201271
Lab ID: 2201467-001
Matrix: Soil
Client Sample ID: 20220118_AC McLaughlin 100BG01@2ft

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sodium Adsorption Ratio				Batch ID: 35568		Analyst: AK
Sodium Adsorption Ratio (SAR)	2.17	0		mEq/L	1	2/17/2022 1:16:00 PM

Date: *3/11/2022*

Work Order: 2201467
CLIENT: Summit Scientific
Project: 2201271

QC SUMMARY REPORT

Sodium Adsorption Ratio

Sample ID: **MB-35568** SampType: **MBLK** Units: **µg/L** Prep Date: **3/2/2022** RunNo: **73700**
Client ID: **MBLKW** Batch ID: **35568** Analysis Date: **2/15/2022** SeqNo: **1508123**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	1,000									
Magnesium	ND	500									
Sodium	ND	1,000									

Sample ID: **LCS-35568** SampType: **LCS** Units: **µg/L** Prep Date: **3/2/2022** RunNo: **73700**
Client ID: **LCSW** Batch ID: **35568** Analysis Date: **2/15/2022** SeqNo: **1508124**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5,700	1,000	5,000	0	114	50	150				
Magnesium	5,100	500	5,000	0	102	50	150				
Sodium	5,240	1,000	5,000	0	105	50	150				

Sample ID: **2201452-005ADUP** SampType: **DUP** Units: **mEq/L** Prep Date: **3/2/2022** RunNo: **73700**
Client ID: **BATCH** Batch ID: **35568** Analysis Date: **2/15/2022** SeqNo: **1508783**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio (SAR)	0.0414	0						0.06270	40.9	30	R

Sample Log-In Check List

Client Name:	**SUMSCI**	Work Order Number:	**2201467**
Logged by:	**Clare Griggs**	Date Received:	**1/28/2022 11:59:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☑ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☑ No ☐
5. Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☑
6. Was an attempt made to cool the samples? Yes ☐ No ☑ NA ☐

Unknown prior to receipt.

7. Were all items received at a temperature of >2°C to 6°C * Yes ☐ No ☐ NA ☑
8. Sample(s) in proper container(s)? Yes ☑ No ☐
9. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
10. Are samples properly preserved? Yes ☑ No ☐
11. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☑
13. Did all samples containers arrive in good condition(unbroken)? Yes ☑ No ☐
14. Does paperwork match bottle labels? Yes ☑ No ☐
15. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
16. Is it clear what analyses were requested? Yes ☑ No ☐
17. Were all holding times able to be met? Yes ☑ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	11.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 1/26/22 Page: 1 of: 1

Laboratory Project No (internal): 2201467

Project Name: 2201271

Special Remarks:

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	B	Metals													Comments
1 20220118_AC McLaughlin 100BG01@ 2ft				x	x	x													SAR, EC, pH by saturated paste
2																			B by hot water soluble
3																			Metals As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn
4																			
5																			
6																			
7																			
8																			
9																			
10																			

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

Turn-around Time:
☒ Standard
☐ 3 Day
☐ 2 Day
☐ Next Day
Same Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	1/26/22 1007	x Justine Martz	1/28/22 12:06
Relinquished	Date/Time	Received	Date/Time
x		x	

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 1/26/22 Page: 1 of: 1

Laboratory Project No (internal): 2201467

Project Name: 2201271

Special Remarks: Report SAR only per PS 3/9/22 -CG

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	B	Metals													Comments
1	20220118_AC McLaughlin 100BG01@	2ft			x	x	x													SAR, EC, pH by saturated paste
2																				B by hot water soluble
3																				Metals As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn
4																				
5																				
6																				
7																				
8																				
9																				
10																				

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

Turn-around Time:
☒ Standard
☐ 3 Day
☐ 2 Day
☐ Next Day
Same Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	1/26/22 1007	x Justine Martz	1/28/22 12:06
Relinquished x	Date/Time	Received x	Date/Time

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 02, 2022

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: AC McLaughlin 100 Background #2

Work Order #2204264

Enclosed are the results of analyses for samples received by Summit Scientific on 04/18/22 10:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Whiting Oil & Gas retail Denver CO, 80215	Project: AC McLaughlin 100 Background #2 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 05/02/22 12:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20220414_ACMcLoughlin100_BG02@GS	2204264-01	Soil	04/14/22 12:20	04/18/22 10:40

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.

Summit Scientific

2204264

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Whiting Oil + Gas
Address: 707 17th St Ste 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: AC McLaughlin 100 Background 2
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	NH, EC, SAR								
1	20220414_AC McLaughlin 100_BG02_GAS	4/14/22	12:20	1			X			X			X								
2																					
3																					
4																					
5																					
6																					
7					4/14/2022																
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by: 4/18/22	Date/Time: 1040
Relinquished by:	Date/Time:	Received by:	Date/Time:

JV

Turn Around Time (Check)
~~Same Day~~ ___ 72 hours ___
24 hours ___ Standard ___
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 0.7
Samples Intact: Yes No

Notes:

www.s2scientific.com

S2

S2 Work Order# 2204264

Sample Receipt Checklist

Client: Whiting **Client Project ID:** AL McLaughlin 100 Background 2

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #:_____

✓				

Matrix (Check all that apply) Air [ ] Soil/Solid [✓] Water [ ] Other [ ]

Temp (°C) 0.7 Thermometer # Ø2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C [1]? **NOTE:** If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact [1]?	✓			
Was adequate sample volume provided [1]?	✓			
If custody seals are present, are they intact [1]?			✓	
Are samples due within 48 hours present?			✓	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe^{2+}), Hexavalent Chromium (Cr^{6+}, Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			✓	
Is a chain-of-custody (COC) form present and filled out completely [1]?	✓			
Does the COC agree with the number and type of sample bottles received [1]?	✓			
Do the sample IDs on the bottle labels match the COC [1]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the comments column – HCl, H_2SO_4, NaOH, HNO_3, etc.			✓	
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**

JB
Custodian Printed Name

4/18/22
Date/Time

Whiting Oil & Gas retail Denver CO, 80215	Project: AC McLaughlin 100 Background #2 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 05/02/22 12:57

20220414_ACMcLoughlin100_BG02@GS

2204264-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**124**	0.0541	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	**30.8**	0.0541	"	"	"	"	"	"	
Sodium	**2090**	0.0541	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**43.5**	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**92.4**		%	1	BFD0495	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**14.0**	0.0100	mmhos/cm	1	BFD0591	04/27/22	04/27/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.10**		pH Units	1	BFD0589	04/27/22	04/27/22	EPA 9045D	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0562 - General Preparation										
Blank (BFD0562-BLK1)				Prepared: 04/26/22 Analyzed: 05/02/22						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BFD0562-BS1)				Prepared: 04/26/22 Analyzed: 05/02/22						
Calcium	4.99	0.0500	mg/L wet	5.00		99.7	70-130			
Magnesium	5.39	0.0500	"	5.00		108	70-130			
Sodium	5.27	0.0500	"	5.00		105	70-130			

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0495 - General Preparation										
Duplicate (BFD0495-DUP1)		**Source: 2204254-01**		Prepared: 04/22/22 Analyzed: 04/26/22						
% Solids	79.3		%		79.1			0.239	20	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0591 - General Preparation										
Blank (BFD0591-BLK1)				Prepared & Analyzed: 04/27/22						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BFD0591-BS1)				Prepared & Analyzed: 04/27/22						
Specific Conductance (EC)	0.153	0.0100	mmhos/cm	0.150		102	95-105			
Duplicate (BFD0591-DUP1)		**Source: 2204254-01**		Prepared & Analyzed: 04/27/22						
Specific Conductance (EC)	2.40	0.0100	mmhos/cm		2.43			1.24	20	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0589 - General Preparation										
LCS (BFD0589-BS1)				Prepared & Analyzed: 04/27/22						
pH	9.12		pH Units	9.18		99.3	95-105			
Duplicate (BFD0589-DUP1)		**Source: 2204254-01**		Prepared & Analyzed: 04/27/22						
pH	7.68		pH Units		7.66			0.261	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 27, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Emerald C134 Closure

Work Order #2109288

Enclosed are the results of analyses for samples received by Summit Scientific on 09/17/21 10:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Emerald C134 Closure 20221740.001A Vince DeCianne	**Reported:** 09/27/21 13:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210916_EmeraldC134_WH@5ft	2109288-01	Soil	09/16/21 07:30	09/17/21 10:45
20210916_EmeraldC134_BG@3ft	2109288-02	Soil	09/16/21 07:45	09/17/21 10:45

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.

Summit Scientific 2109288

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Emerald C134 Closure
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210916_Emerald C134_WH@SP	9/16/2021	7:30	1			X			X					X	X					
2	20210916_Emerald C134_BG@3ft	9/16/2021	7:45	1			X			X					X	X					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/16/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/16/2021 14:30		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		[illegible] 9/17/21	1045
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 4.2 Samples Intact: Yes No

Notes:

2109288

Sample Receipt Checklist

S2 Work Order_____

Client: Whiting Client Project ID: Emerald C134 Closure

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: _____

[ ] [ ] [✓] [ ] [ ]

Matrix (check all that apply): [ ] Air [✓] Soil/Solid [ ] Water [ ] Other:_____ (Describe)

Temp (°C)	4.2

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB	[signature]	9/17/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

Whiting Oil & Gas retail Denver CO, 80215	Project: Emerald C134 Closure Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/27/21 13:46

20210916_EmeraldC134_WH@5ft

2109288-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**25.7**	0.0538	mg/L dry	1	BEI0469	09/22/21	09/25/21	EPA 6020B	
Magnesium	**12.2**	0.0538	"	"	"	"	"	"	
Sodium	**18.5**	0.0538	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.753**	0.00100	units	1	BEI0553	09/26/21	09/26/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**92.9**		%	1	BEI0487	09/22/21	09/23/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/21 07:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**5.42**	0.0100	mmhos/cm	1	BEI0474	09/22/21	09/22/21	EPA 120.1	

Whiting Oil & Gas retail Denver CO, 80215	Project: Emerald C134 Closure Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/27/21 13:46

20210916_EmeraldC134_BG@3ft

2109288-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**18.4**	0.0539	mg/L dry	1	BEI0469	09/22/21	09/25/21	EPA 6020B	
Magnesium	**6.05**	0.0539	"	"	"	"	"	"	
Sodium	**3.59**	0.0539	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.186**	0.00100	units	1	BEI0553	09/26/21	09/26/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**92.8**		%	1	BEI0487	09/22/21	09/23/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/16/21 07:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.48**	0.0100	mmhos/cm	1	BEI0474	09/22/21	09/22/21	EPA 120.1	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0469 - General Preparation										
Blank (BEI0469-BLK1)				Prepared: 09/22/21 Analyzed: 09/25/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0469-BS1)				Prepared: 09/22/21 Analyzed: 09/25/21						
Calcium	5.39	0.0500	mg/L wet	5.00		108	70-130			
Magnesium	5.49	0.0500	"	5.00		110	70-130			
Sodium	5.24	0.0500	"	5.00		105	70-130			

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0487 - General Preparation										
Duplicate (BEI0487-DUP1)		**Source: 2109283-01**		Prepared: 09/22/21 Analyzed: 09/23/21						
% Solids	88.9		%		88.5			0.461	20	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Emerald C134 Closure Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/27/21 13:46

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0474 - General Preparation										
Blank (BEI0474-BLK1)				Prepared & Analyzed: 09/22/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0474-BS1)				Prepared & Analyzed: 09/22/21						
Specific Conductance (EC)	0.155	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEI0474-DUP1)		**Source: 2109288-01**		Prepared & Analyzed: 09/22/21						
Specific Conductance (EC)	5.43	0.0100	mmhos/cm		5.42			0.0553	20	

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.

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 02, 2022

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Emerald C138 Background

Work Order #2204262

Enclosed are the results of analyses for samples received by Summit Scientific on 04/18/22 10:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Whiting Oil & Gas retail Denver CO, 80215	Project: Emerald C138 Background Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 05/02/22 12:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20220414_EmeraldC138_BG01@40in	2204262-01	Soil	04/14/22 08:40	04/18/22 10:40

Summit Scientific

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

Summit Scientific

2204262

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Whiting Oil and Gas
Address: 707 17th St, Ste 3000
City/State/Zip: Denver Co 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Emerald C138 Background
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	Arsenic	pH, SAR, EC							
1	20220414_Emerald C138_BS01@40m	4/14/2022	8:40	3			X			X			X	X							
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

4/14/2022

Relinquished by:	Date/Time:	Received by:	Date/Time:
[signature]			
Relinquished by:	Date/Time:	Received by: [signature]	Date/Time: 4/15/22 1040
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard ___
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 0.7
Samples Intact: Yes No

Notes:

www.s2scientific.com

S2

S2 Work Order# 2204262

Sample Receipt Checklist

Client: Whiting Client Project ID: Emerald C138 Background

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #:_____

✓				

Matrix (Check all that apply) Air [ ] Soil/Solid [✓] Water [ ] Other [ ]

Temp (°C) 0.7 Thermometer # Ø2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C [1]? **NOTE:** If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact [1]?	✓			
Was adequate sample volume provided [1]?	✓			
If custody seals are present, are they intact [1]?			✓	
Are samples due within 48 hours present?			✓	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe^{2+}), Hexavalent Chromium (Cr^{6+}, Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			✓	
Is a chain-of-custody (COC) form present and filled out completely [1]?	✓			
Does the COC agree with the number and type of sample bottles received [1]?	✓			
Do the sample IDs on the bottle labels match the COC [1]?	✓			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the comments column – HCl, H_2SO_4, NaOH, HNO_3, etc.			✓	
If samples are acid preserved for metals, is the pH ≤ 2 [1]? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**

JB
Custodian Printed Name

4/18/22
Date/Time

Whiting Oil & Gas retail Denver CO, 80215	Project: Emerald C138 Background Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 05/02/22 12:55

20220414_EmeraldC138_BG01@40in

2204262-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**8.34**	0.200	mg/kg dry	1	BFD0468	04/21/22	04/30/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**217**	0.0546	mg/L dry	1	BFD0562	04/26/22	05/02/22	EPA 6020B	
Magnesium	**412**	0.0546	"	"	"	"	"	"	
Sodium	**86.6**	0.0546	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.797**	0.00100	units	1	BFE0018	05/02/22	05/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**91.6**		%	1	BFD0495	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**4.69**	0.0100	mmhos/cm	1	BFD0591	04/27/22	04/27/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

Whiting Oil & Gas retail Denver CO, 80215	Project: Emerald C138 Background Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 05/02/22 12:55

20220414_EmeraldC138_BG01@40in

2204262-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.71**		pH Units	1	BFD0589	04/27/22	04/27/22	EPA 9045D	

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0468 - EPA 3050B										
Blank (BFD0468-BLK1)				Prepared: 04/21/22 Analyzed: 04/29/22						
Arsenic	ND	0.200	mg/kg wet							
LCS (BFD0468-BS1)				Prepared: 04/21/22 Analyzed: 04/29/22						
Arsenic	35.0	0.200	mg/kg wet	40.0		87.4	80-120			
Duplicate (BFD0468-DUP1)		**Source: 2204241-21**		Prepared: 04/21/22 Analyzed: 04/29/22						
Arsenic	2.71	0.200	mg/kg dry		2.97			9.24	20	
Matrix Spike (BFD0468-MS1)		**Source: 2204241-21**		Prepared: 04/21/22 Analyzed: 04/29/22						
Arsenic	42.8	0.200	mg/kg dry	46.5	2.97	85.6	75-125			
Matrix Spike Dup (BFD0468-MSD1)		**Source: 2204241-21**		Prepared: 04/21/22 Analyzed: 04/29/22						
Arsenic	41.9	0.200	mg/kg dry	46.5	2.97	83.7	75-125	2.03	25	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0562 - General Preparation										
Blank (BFD0562-BLK1)				Prepared: 04/26/22 Analyzed: 05/02/22						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BFD0562-BS1)				Prepared: 04/26/22 Analyzed: 05/02/22						
Calcium	4.99	0.0500	mg/L wet	5.00		99.7	70-130			
Magnesium	5.39	0.0500	"	5.00		108	70-130			
Sodium	5.27	0.0500	"	5.00		105	70-130			

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0495 - General Preparation										
Duplicate (BFD0495-DUP1)		**Source: 2204254-01**		Prepared: 04/22/22 Analyzed: 04/26/22						
% Solids	79.3		%		79.1			0.239	20	

Whiting Oil & Gas retail Denver CO, 80215	Project: Emerald C138 Background Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 05/02/22 12:55

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0591 - General Preparation										
Blank (BFD0591-BLK1)				Prepared & Analyzed: 04/27/22						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BFD0591-BS1)				Prepared & Analyzed: 04/27/22						
Specific Conductance (EC)	0.153	0.0100	mmhos/cm	0.150		102	95-105			
Duplicate (BFD0591-DUP1)		**Source: 2204254-01**		Prepared & Analyzed: 04/27/22						
Specific Conductance (EC)	2.40	0.0100	mmhos/cm		2.43			1.24	20	

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.

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0589 - General Preparation										
LCS (BFD0589-BS1)				Prepared & Analyzed: 04/27/22						
pH	9.12		pH Units	9.18		99.3	95-105			
Duplicate (BFD0589-DUP1)		**Source: 2204254-01**		Prepared & Analyzed: 04/27/22						
pH	7.68		pH Units		7.66			0.261	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 6
Work Order #2109132

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG06@1ft	2109132-01	Soil	09/08/21 10:00	09/09/21 10:20
20210908_BG06@3ft	2109132-02	Soil	09/08/21 10:02	09/09/21 10:20
20210908_BG06@6ft10in	2109132-03	Soil	09/08/21 10:04	09/09/21 10:20

Summit Scientific

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

Summit Scientific

2109132

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 6
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG06@~~0S~~ 1ft	9/8/2021	10:00	1			X			X				X							
2	20210908_BG06@~~2ft~~ 3ft	9/8/2021	10:02	1			X			X				X							
3	20210908_BG06@~~4ft~~ 6ft 10in	9/8/2021	10:04	1			X			X				X							
4	~~20210908_BG06@6ft~~																				
5	~~20210908_BG06@8ft~~																				
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by: John Bor	Date/Time: 9/9/21 1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 6.7 Samples Intact: (Yes) No

Notes:

2109132

Sample Receipt Checklist

S2 Work Order_____

Client: Whiting Client Project ID: Background 6

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: _____

[ ] [ ] [✓] [ ] [ ]

Matrix (check all that apply): [ ] Air [✓] Soil/Solid [ ] Water [ ] Other:_____ (Describe)

Temp (°C)	6.7

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB	[signature]	9/9/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

20210908_BG06@1ft
2109132-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.01**	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**76.7**	0.0521	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	**10.3**	0.0521	"	"	"	"	"	"	
Sodium	**10.5**	0.0521	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.299**	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**96.0**		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1.56**	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

20210908_BG06@1ft

2109132-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.52**		pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

20210908_BG06@3ft

2109132-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.33**	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**54.3**	0.0534	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	**2.58**	0.0534	"	"	"	"	"	"	
Sodium	**15.3**	0.0534	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.551**	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**93.6**		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**3.61**	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

20210908_BG06@3ft

2109132-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.29**		pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

20210908_BG06@6ft10in

2109132-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.21**	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**226**	0.0535	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	**8.40**	0.0535	"	"	"	"	"	"	
Sodium	**138**	0.0535	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**2.45**	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**93.4**		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**5.88**	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Background 6 20221740.001A Vince DeCianne	**Reported:** 09/20/21 12:54

20210908_BG06@6ft10in

2109132-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.47**		pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0371 - EPA 3050B										
Blank (BEI0371-BLK1)				Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0371-BS1)				Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	44.7	0.200	mg/kg wet	40.0		112	80-120			
Duplicate (BEI0371-DUP1)		**Source: 2109131-01**		Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	4.32	0.200	mg/kg dry		4.76			9.81	20	
Matrix Spike (BEI0371-MS1)		**Source: 2109131-01**		Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	53.8	0.200	mg/kg dry	42.1	4.76	116	75-125			
Matrix Spike Dup (BEI0371-MSD1)		**Source: 2109131-01**		Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	55.3	0.200	mg/kg dry	42.1	4.76	120	75-125	2.77	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0319 - General Preparation										
Blank (BEI0319-BLK1)				Prepared: 09/15/21 Analyzed: 09/17/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0319-BS1)				Prepared: 09/15/21 Analyzed: 09/17/21						
Calcium	4.93	0.0500	mg/L wet	5.00		98.6	70-130			
Magnesium	4.87	0.0500	"	5.00		97.4	70-130			
Sodium	4.77	0.0500	"	5.00		95.4	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0282 - General Preparation										
Duplicate (BEI0282-DUP1)		**Source: 2107097-07**		Prepared & Analyzed: 09/14/21						
% Solids	84.8		%		84.4			0.434	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0317 - General Preparation										
Blank (BEI0317-BLK1)				Prepared & Analyzed: 09/15/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0317-BS1)				Prepared & Analyzed: 09/15/21						
Specific Conductance (EC)	0.165	0.0100	mmhos/cm	0.150		110	90-110			
Duplicate (BEI0317-DUP1)		**Source: 2109131-01**		Prepared & Analyzed: 09/15/21						
Specific Conductance (EC)	2.25	0.0100	mmhos/cm		2.28			1.41	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 6 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:54

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0318 - General Preparation										
LCS (BEI0318-BS1)				Prepared & Analyzed: 09/15/21						
pH	9.28		pH Units	9.21		101	95-105			
Duplicate (BEI0318-DUP1)		**Source: 2109131-01**		Prepared & Analyzed: 09/15/21						
pH	9.04		pH Units		9.04			0.00	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

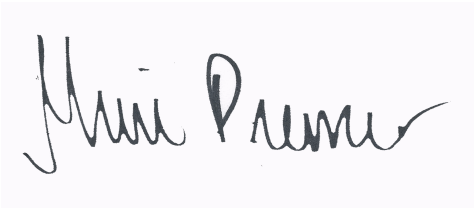
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 7
Work Order #2109131

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Background 7 20221740.001A Vince DeCianne	**Reported:** 09/20/21 12:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG07@1ft	2109131-01	Soil	09/08/21 10:10	09/09/21 10:20
20210908_BG07@3ft	2109131-02	Soil	09/08/21 10:12	09/09/21 10:20
20210908_BG08@7ft6in	2109131-03	Soil	09/08/21 10:14	09/09/21 10:20

Summit Scientific

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

Summit Scientific 2109131

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 7
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG07@~~3ft~~ 1ft	9/8/2021	10:10	1			X			X				X							
2	20210908_BG07@~~2ft~~ 3ft	9/8/2021	10:12	1			X			X				X							
3	20210908_BG07@~~1ft~~ 7ft(air)	9/8/2021	10:14	1			X			X				X							
4	~~20210908_BG07@6ft~~																				
5	~~20210908_BG07@8ft~~																				
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		[illegible]	9/9/21 1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 6.7 Samples Intact: (Yes) No

Notes:

Sample Receipt Checklist

S2 Work Order 2109131

Client: Whiting Client Project ID: Background 7

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other [ ] [ ] [✓] [ ] [ ] Airbill #:

Matrix (check all that apply): [ ] Air [✓] Soil/Solid [ ] Water [ ] Other: (Describe)

Temp (°C)	6.7

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB	[signature]	9/9/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

20210908_BG07@1ft
2109131-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**4.76**	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**72.7**	0.0526	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	**26.1**	0.0526	"	"	"	"	"	"	
Sodium	**18.2**	0.0526	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.466**	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**95.0**		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.28**	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

20210908_BG07@1ft

2109131-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**9.04**		pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

20210908_BG07@3ft
2109131-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**4.72**	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**72.6**	0.0575	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	**3.61**	0.0575	"	"	"	"	"	"	
Sodium	**43.5**	0.0575	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**1.35**	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**87.0**		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**5.36**	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

20210908_BG07@3ft

2109131-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.34**		pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

20210908_BG08@7ft6in

2109131-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.12**	0.200	mg/kg dry	1	BEI0371	09/16/21	09/19/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**84.0**	0.0578	mg/L dry	1	BEI0319	09/15/21	09/17/21	EPA 6020B	
Magnesium	**5.63**	0.0578	"	"	"	"	"	"	
Sodium	**66.1**	0.0578	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**1.88**	0.00100	units	1	BEI0397	09/19/21	09/19/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**86.6**		%	1	BEI0282	09/14/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**10.4**	0.0100	mmhos/cm	1	BEI0317	09/15/21	09/15/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

20210908_BG08@7ft6in

2109131-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.41**		pH Units	1	BEI0318	09/15/21	09/15/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0371 - EPA 3050B										
Blank (BEI0371-BLK1)				Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0371-BS1)				Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	44.7	0.200	mg/kg wet	40.0		112	80-120			
Duplicate (BEI0371-DUP1)		**Source: 2109131-01**		Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	4.32	0.200	mg/kg dry		4.76			9.81	20	
Matrix Spike (BEI0371-MS1)		**Source: 2109131-01**		Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	53.8	0.200	mg/kg dry	42.1	4.76	116	75-125			
Matrix Spike Dup (BEI0371-MSD1)		**Source: 2109131-01**		Prepared: 09/16/21 Analyzed: 09/19/21						
Arsenic	55.3	0.200	mg/kg dry	42.1	4.76	120	75-125	2.77	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0319 - General Preparation										
Blank (BEI0319-BLK1)				Prepared: 09/15/21 Analyzed: 09/17/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0319-BS1)				Prepared: 09/15/21 Analyzed: 09/17/21						
Calcium	4.93	0.0500	mg/L wet	5.00		98.6	70-130			
Magnesium	4.87	0.0500	"	5.00		97.4	70-130			
Sodium	4.77	0.0500	"	5.00		95.4	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0282 - General Preparation										
Duplicate (BEI0282-DUP1)		**Source: 2107097-07**		Prepared & Analyzed: 09/14/21						
% Solids	84.8		%		84.4			0.434	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0317 - General Preparation										
Blank (BEI0317-BLK1)				Prepared & Analyzed: 09/15/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0317-BS1)				Prepared & Analyzed: 09/15/21						
Specific Conductance (EC)	0.165	0.0100	mmhos/cm	0.150		110	90-110			
Duplicate (BEI0317-DUP1)		**Source: 2109131-01**		Prepared & Analyzed: 09/15/21						
Specific Conductance (EC)	2.25	0.0100	mmhos/cm		2.28			1.41	20	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 7 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:48

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0318 - General Preparation										
LCS (BEI0318-BS1)				Prepared & Analyzed: 09/15/21						
pH	9.28		pH Units	9.21		101	95-105			
Duplicate (BEI0318-DUP1)		**Source: 2109131-01**		Prepared & Analyzed: 09/15/21						
pH	9.04		pH Units		9.04			0.00	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

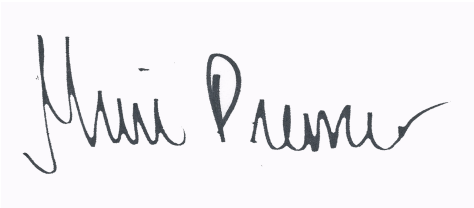
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 8
Work Order #2109130

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Background 8 20221740.001A Vince DeCianne	**Reported:** 09/20/21 12:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG08@1ft	2109130-01	Soil	09/08/21 11:15	09/09/21 10:20
20210908_BG08@3ft	2109130-02	Soil	09/08/21 11:17	09/09/21 10:20
20210908_BG08@7ft1in	2109130-03	Soil	09/08/21 11:20	09/09/21 10:20

Summit Scientific

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

Summit Scientific 2109130

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 8
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description (22)	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG08@~~0ft~~ 1ft	9/8/2021	11:15	1			X			X				X							
2	20210908_BG08@~~2ft~~ 3ft	9/8/2021	11:17	1			X			X				X							
3	20210908_BG08@~~4ft~~ 77.1in	9/8/2021	11:20	1			X			X				X							
4	~~20210908_BG08@6ft~~																				
5	~~20210908_BG08@8ft~~																				
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		[signature]	9/9/21 1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 7.5 Samples Intact: Yes No

Notes:

Sample Receipt Checklist

S2 Work Order 2109130

Client: Whiting Client Project ID: Background 8

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other [ ] [ ] [✓] [ ] [ ] Airbill #:

Matrix (check all that apply): [ ] Air [✓] Soil/Solid [ ] Water [ ] Other: (Describe)

Temp (°C)	7.5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB	[signature]	9/9/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

20210908_BG08@1ft
2109130-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.36**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**55.6**	0.0529	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**7.38**	0.0529	"	"	"	"	"	"	
Sodium	**2.62**	0.0529	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.0876**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**94.6**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.00**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

20210908_BG08@1ft

2109130-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.94**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

20210908_BG08@3ft
2109130-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.99**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**38.8**	0.0532	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**10.7**	0.0532	"	"	"	"	"	"	
Sodium	**5.61**	0.0532	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.206**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**94.0**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**3.08**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Background 8 20221740.001A Vince DeCianne	**Reported:** 09/20/21 12:44

20210908_BG08@3ft

2109130-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.12**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

20210908_BG08@7ft1in

2109130-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.14**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**88.4**	0.0542	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**20.7**	0.0542	"	"	"	"	"	"	
Sodium	**11.5**	0.0542	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.286**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**92.2**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**4.92**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

20210908_BG08@7ft1in

2109130-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.16**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0354 - EPA 3050B										
Blank (BEI0354-BLK1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0354-BS1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	44.3	0.200	mg/kg wet	40.0		111	80-120			
Duplicate (BEI0354-DUP1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	3.54	0.200	mg/kg dry		3.92			10.2	20	
Matrix Spike (BEI0354-MS1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	50.5	0.200	mg/kg dry	44.7	3.92	104	75-125			
Matrix Spike Dup (BEI0354-MSD1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	52.8	0.200	mg/kg dry	44.7	3.92	109	75-125	4.43	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0286 - General Preparation										
Blank (BEI0286-BLK1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0286-BS1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	4.84	0.0500	"	5.00		96.9	70-130			
Sodium	4.89	0.0500	"	5.00		97.7	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0270 - General Preparation										
Duplicate (BEI0270-DUP1)		**Source: 2108371-03**		Prepared: 09/13/21 Analyzed: 09/14/21						
% Solids	87.7		%		87.7			0.00	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0287 - General Preparation										
Blank (BEI0287-BLK1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0287-BS1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEI0287-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.217	0.0100	mmhos/cm		0.217			0.0461	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 8 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:44

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0288 - General Preparation										
LCS (BEI0288-BS1)				Prepared & Analyzed: 09/14/21						
pH	9.31		pH Units	9.21		101	95-105			
Duplicate (BEI0288-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
pH	7.92		pH Units		7.79			1.65	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 9
Work Order #2109129

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Background 9 20221740.001A Vince DeCianne	**Reported:** 09/20/21 12:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG09@1ft	2109129-01	Soil	09/08/21 11:45	09/09/21 10:20
20210908_BG09@3ft	2109129-02	Soil	09/08/21 11:47	09/09/21 10:20
20210908_BG09@7ft7in	2109129-03	Soil	09/08/21 11:49	09/09/21 10:20

Summit Scientific

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

Summit Scientific 2109129

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 9
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG09@~~6ft~~ 1ft	9/8/2021	11:45	1			X			X				X							
2	20210908_BG09@~~2ft~~ 3ft	9/8/2021	11:47	1			X			X				X							
3	20210908_BG09@~~4ft~~ ~~7ft~~ 7ft	9/8/2021	11:49	1			X			X				X							
4	~~20210908_BG09@6ft~~																				
5	~~20210908_BG09@8ft~~																				
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		John Bo 9/9/21	1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 7.5 Samples Intact: Yes No

Notes:

Sample Receipt Checklist

S2 Work Order 2109129

Client: Whiting Client Project ID: Background 9

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other [1] [ ] [✓] [ ] [ ] Airbill #: _____

Matrix (check all that apply): [ ] Air [✓] Soil/Solid [ ] Water [ ] Other: _____ (Describe)

Temp (°C)	7.5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB	[signature]	9/9/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

20210908_BG09@1ft
2109129-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.43**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**21.1**	0.0535	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**5.71**	0.0535	"	"	"	"	"	"	
Sodium	**3.66**	0.0535	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.182**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**93.5**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.29**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

20210908_BG09@1ft

2109129-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.08**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

20210908_BG09@3ft

2109129-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.67**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**42.6**	0.0539	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**12.2**	0.0539	"	"	"	"	"	"	
Sodium	**13.4**	0.0539	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.466**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**92.8**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**4.22**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

20210908_BG09@3ft

2109129-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.19**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

20210908_BG09@7ft7in

2109129-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.11**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**102**	0.0576	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**31.3**	0.0576	"	"	"	"	"	"	
Sodium	**39.6**	0.0576	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.880**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**86.8**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**9.01**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

20210908_BG09@7ft7in

2109129-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 11:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.05**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0354 - EPA 3050B										
Blank (BEI0354-BLK1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0354-BS1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	44.3	0.200	mg/kg wet	40.0		111	80-120			
Duplicate (BEI0354-DUP1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	3.54	0.200	mg/kg dry		3.92			10.2	20	
Matrix Spike (BEI0354-MS1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	50.5	0.200	mg/kg dry	44.7	3.92	104	75-125			
Matrix Spike Dup (BEI0354-MSD1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	52.8	0.200	mg/kg dry	44.7	3.92	109	75-125	4.43	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0286 - General Preparation										
Blank (BEI0286-BLK1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0286-BS1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	4.84	0.0500	"	5.00		96.9	70-130			
Sodium	4.89	0.0500	"	5.00		97.7	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0270 - General Preparation										
Duplicate (BEI0270-DUP1)		**Source: 2108371-03**		Prepared: 09/13/21 Analyzed: 09/14/21						
% Solids	87.7		%		87.7			0.00	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0287 - General Preparation										
Blank (BEI0287-BLK1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0287-BS1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEI0287-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.217	0.0100	mmhos/cm		0.217			0.0461	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 9 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:22

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0288 - General Preparation										
LCS (BEI0288-BS1)				Prepared & Analyzed: 09/14/21						
pH	9.31		pH Units	9.21		101	95-105			
Duplicate (BEI0288-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
pH	7.92		pH Units		7.79			1.65	20	

Summit Scientific

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

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

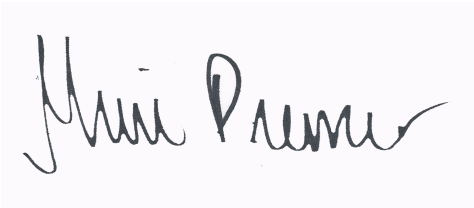
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 10
Work Order #2109128

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG10@1ft	2109128-01	Soil	09/08/21 12:30	09/09/21 10:20
20210908_BG10@3ft	2109128-02	Soil	09/08/21 12:32	09/09/21 10:20
20210908_BG10@7ft2in	2109128-03	Soil	09/08/21 12:34	09/09/21 10:20

Summit Scientific

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

Summit Scientific 2109128

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 10
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG10@~~0.5~~ 1ft	9/8/2021	12:30	1			X			X				X							
2	20210908_BG10@~~2ft~~ 3ft	9/8/2021	12:32	1			X			X				X							
3	20210908_BG10@~~4ft~~ 7ft 2in	9/8/2021	12:34	1			X			X				X							
4	~~20210908_BG10@6ft~~																				
5	~~20210908_BG10@8ft~~																				
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		John Bo 9/9/21	1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 7.5 Samples Intact: (Yes) No

Notes:

2109128

Sample Receipt Checklist

S2 Work Order_____

Client: Whiting Client Project ID: Background 10

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: _____

[ ] [ ] [✓] [ ] [ ]

Matrix (check all that apply): [ ] Air [✓] Soil/Solid [ ] Water [ ] Other:_____ (Describe)

Temp (°C)	7.5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

JB	[signature]	9/9/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

20210908_BG10@1ft
2109128-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.06**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**34.4**	0.0552	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**3.24**	0.0552	"	"	"	"	"	"	
Sodium	**2.74**	0.0552	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.120**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**90.6**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.244**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

20210908_BG10@1ft

2109128-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.95**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

20210908_BG10@3ft
2109128-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.46**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**69.9**	0.0554	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**9.82**	0.0554	"	"	"	"	"	"	
Sodium	**6.38**	0.0554	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.189**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**90.3**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**3.24**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

20210908_BG10@3ft

2109128-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.96**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

20210908_BG10@7ft2in
2109128-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.50**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**39.6**	0.0558	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**14.9**	0.0558	"	"	"	"	"	"	
Sodium	**14.9**	0.0558	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.512**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**89.6**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**5.18**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

20210908_BG10@7ft2in

2109128-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.11**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0354 - EPA 3050B										
Blank (BEI0354-BLK1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0354-BS1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	44.3	0.200	mg/kg wet	40.0		111	80-120			
Duplicate (BEI0354-DUP1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	3.54	0.200	mg/kg dry		3.92			10.2	20	
Matrix Spike (BEI0354-MS1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	50.5	0.200	mg/kg dry	44.7	3.92	104	75-125			
Matrix Spike Dup (BEI0354-MSD1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	52.8	0.200	mg/kg dry	44.7	3.92	109	75-125	4.43	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0286 - General Preparation										
Blank (BEI0286-BLK1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0286-BS1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	4.84	0.0500	"	5.00		96.9	70-130			
Sodium	4.89	0.0500	"	5.00		97.7	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0270 - General Preparation										
Duplicate (BEI0270-DUP1)		**Source: 2108371-03**		Prepared: 09/13/21 Analyzed: 09/14/21						
% Solids	87.7		%		87.7			0.00	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0287 - General Preparation										
Blank (BEI0287-BLK1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0287-BS1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEI0287-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.217	0.0100	mmhos/cm		0.217			0.0461	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 10 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:19

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0288 - General Preparation										
LCS (BEI0288-BS1)				Prepared & Analyzed: 09/14/21						
pH	9.31		pH Units	9.21		101	95-105			
Duplicate (BEI0288-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
pH	7.92		pH Units		7.79			1.65	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 11
Work Order #2109127

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Background 11 20221740.001A Vince DeCianne	**Reported:** 09/20/21 12:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG11@1ft	2109127-01	Soil	09/08/21 13:10	09/09/21 10:20
20210908_BG11@3ft	2109127-02	Soil	09/08/21 13:12	09/09/21 10:20
20210908_BG11@6ft8in	2109127-03	Soil	09/08/21 13:14	09/09/21 10:20

Summit Scientific

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

Summit Scientific 2109127

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 11
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG11@1ft	9/8/2021	13:10	1			X			X				X							
2	20210908_BG11@3ft	9/8/2021	13:12	1			X			X				X							
3	20210908_BG11@6ft8in	9/8/2021	13:14	1			X			X				X							
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		John Bu 9/9/21	1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 7.5 Samples Intact: Yes No

Notes:

Sample Receipt Checklist

S2 Work Order 2109127

Client: Whiting Client Project ID: Background 11

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ ☐ ✓ ☐ ☐ Airbill #: _____

Matrix (check all that apply): ☐ Air ✓ Soil/Solid ☐ Water ☐ Other: _____ (Describe)

Temp (°C)	7.5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

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

JB	[signature]	9/9/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

20210908_BG11@1ft
2109127-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.76**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**18.7**	0.0517	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**1.60**	0.0517	"	"	"	"	"	"	
Sodium	**0.0999**	0.0517	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.00596**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**96.8**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1.72**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

20210908_BG11@1ft

2109127-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.01**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

20210908_BG11@3ft
2109127-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.52**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**29.8**	0.0526	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**2.27**	0.0526	"	"	"	"	"	"	
Sodium	**0.200**	0.0526	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.00951**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**95.0**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1.64**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

20210908_BG11@3ft

2109127-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.98**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

20210908_BG11@6ft8in

2109127-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.41**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**149**	0.0536	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**10.5**	0.0536	"	"	"	"	"	"	
Sodium	**4.21**	0.0536	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.0899**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**93.3**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.45**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

20210908_BG11@6ft8in

2109127-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.05**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0354 - EPA 3050B										
Blank (BEI0354-BLK1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0354-BS1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	44.3	0.200	mg/kg wet	40.0		111	80-120			
Duplicate (BEI0354-DUP1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	3.54	0.200	mg/kg dry		3.92			10.2	20	
Matrix Spike (BEI0354-MS1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	50.5	0.200	mg/kg dry	44.7	3.92	104	75-125			
Matrix Spike Dup (BEI0354-MSD1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	52.8	0.200	mg/kg dry	44.7	3.92	109	75-125	4.43	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0286 - General Preparation										
Blank (BEI0286-BLK1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0286-BS1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	4.84	0.0500	"	5.00		96.9	70-130			
Sodium	4.89	0.0500	"	5.00		97.7	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0270 - General Preparation										
Duplicate (BEI0270-DUP1)		**Source: 2108371-03**		Prepared: 09/13/21 Analyzed: 09/14/21						
% Solids	87.7		%		87.7			0.00	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0287 - General Preparation										
Blank (BEI0287-BLK1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0287-BS1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEI0287-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.217	0.0100	mmhos/cm		0.217			0.0461	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 11 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:13

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0288 - General Preparation										
LCS (BEI0288-BS1)				Prepared & Analyzed: 09/14/21						
pH	9.31		pH Units	9.21		101	95-105			
Duplicate (BEI0288-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
pH	7.92		pH Units		7.79			1.65	20	

Summit Scientific

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

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

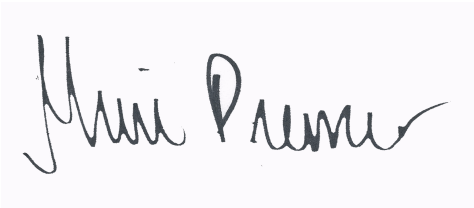
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 12
Work Order #2109126

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG12@1ft	2109126-01	Soil	09/08/21 13:50	09/09/21 10:20
20210908_BG12@3ft	2109126-02	Soil	09/08/21 13:52	09/09/21 10:20
20210908_BG12@7ft8in	2109126-03	Soil	09/08/21 13:54	09/09/21 10:20

Summit Scientific

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

Summit Scientific 2109126

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 12
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG12@1ft	9/8/2021	13:50	1			X			X				X							
2	20210908-BG12@3ft	9/8/2021	13:52	1			X			X				X							
3	20210908_BG12@7ft8in	9/8/2021	13:54	1			X			X				X							
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		9/9/21	1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 7.5 Samples Intact: Yes No

Notes:

Summit Scientific 2109126

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 12
Project Number: 20221740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908_BG12@1ft	9/8/2021	13:50	1			X			X				X							
2	20210908-BG12@3ft	9/8/2021	13:52	1			X			X				X							
3	20210908_BG12@7ft8in	9/8/2021	13:54	1			X			X				X							
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		9/9/21	1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 7.5 Samples Intact: Yes No

Notes:

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

20210908_BG12@1ft
2109126-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**5.71**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**140**	0.0534	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**4.77**	0.0534	"	"	"	"	"	"	
Sodium	**0.875**	0.0534	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.0198**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**93.7**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.05**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

20210908_BG12@1ft

2109126-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.06**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

20210908_BG12@3ft
2109126-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**4.97**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**90.7**	0.0536	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**4.83**	0.0536	"	"	"	"	"	"	
Sodium	**2.36**	0.0536	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.0654**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**93.3**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.48**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

20210908_BG12@3ft

2109126-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.08**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

20210908_BG12@7ft8in
2109126-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**4.16**	0.200	mg/kg dry	1	BEI0354	09/16/21	09/18/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**61.8**	0.0549	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**18.3**	0.0549	"	"	"	"	"	"	
Sodium	**23.7**	0.0549	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.681**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**91.0**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**5.41**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

20210908_BG12@7ft8in

2109126-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 13:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.29**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0354 - EPA 3050B										
Blank (BEI0354-BLK1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0354-BS1)				Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	44.3	0.200	mg/kg wet	40.0		111	80-120			
Duplicate (BEI0354-DUP1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	3.54	0.200	mg/kg dry		3.92			10.2	20	
Matrix Spike (BEI0354-MS1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	50.5	0.200	mg/kg dry	44.7	3.92	104	75-125			
Matrix Spike Dup (BEI0354-MSD1)		**Source: 2109029-02**		Prepared: 09/16/21 Analyzed: 09/18/21						
Arsenic	52.8	0.200	mg/kg dry	44.7	3.92	109	75-125	4.43	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0286 - General Preparation										
Blank (BEI0286-BLK1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0286-BS1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	4.84	0.0500	"	5.00		96.9	70-130			
Sodium	4.89	0.0500	"	5.00		97.7	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0270 - General Preparation										
Duplicate (BEI0270-DUP1)		**Source: 2108371-03**		Prepared: 09/13/21 Analyzed: 09/14/21						
% Solids	87.7		%		87.7			0.00	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0287 - General Preparation										
Blank (BEI0287-BLK1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0287-BS1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEI0287-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.217	0.0100	mmhos/cm		0.217			0.0461	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 12 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 12:04

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0288 - General Preparation										
LCS (BEI0288-BS1)				Prepared & Analyzed: 09/14/21						
pH	9.31		pH Units	9.21		101	95-105			
Duplicate (BEI0288-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
pH	7.92		pH Units		7.79			1.65	20	

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

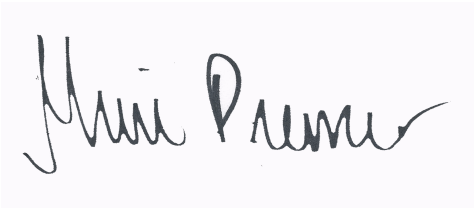
September 20, 2021

Vince DeCianne
Whiting Oil & Gas
retail
Denver, CO 80215

RE: Background 13
Work Order #2109125

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/21 10:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Project Number: Project Manager:	Background 13 20221740.001A Vince DeCianne	**Reported:** 09/20/21 11:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20210908_BG13@1ft	2109125-01	Soil	09/08/21 14:20	09/09/21 10:20
20210908_BG13@3ft	2109125-02	Soil	09/08/21 14:22	09/09/21 10:20
20210908_BG13@7ft4in	2109125-03	Soil	09/08/21 14:24	09/09/21 10:20

Summit Scientific

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

Summit Scientific 2109125

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Whiting Oil & Gas
Address: 707 17th Street, Suite 3000
City/State/Zip: Denver, CO 80202
Phone: 970-309-6553
Sampler Name: Jordan Veith

Project Manager: Vince DeCianne
E-Mail: jveith@kleinfelder.com
kyle.waggoner@whiting.com
Project Name: Background 13
Project Number: 20224740.001A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	COGCC Table 915-1	Arsenic, EC, pH, SAR	EC	SAR	pH	Arsenic			
1	20210908-BG13@1ft	9/8/2021	14:20	1			X			X				X							
2	20210908-BG13@3ft	9/8/2021	14:22	1			X			X				X							
3	20210908-BG13@7ft4in	9/8/2021	14:24	1			X			X				X							
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Jordan Veith 9/8/2021

Relinquished by:	Date/Time:	Received by:	Date/Time:
Jordan Veith	9/8/2021 1730		
Relinquished by:	Date/Time:	Received by:	Date/Time:
		[illegible] 9/9/21	1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___ 24 hours ___ Standard ___ 48 hours ___

Sample Integrity: Temperature Upon Receipt: 7.5 Samples Intact: Yes No

Notes:

Sample Receipt Checklist

S2 Work Order 2109125

Client: Whiting Client Project ID: Background 13

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ✓ Airbill #:

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

Temp (°C)	7.5

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact (1)?	✓			
Was adequate sample volume provided (1)?	✓			
If custody seals are present, are they intact (1)?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely (1)?	✓			
Does the COC agree with the number and type of sample bottles received (1)?	✓			
Do the sample IDs on the bottle labels match the COC (1)?	✓			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

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

JB	[signature]	9/9/21
Custodian Printed Name or Initials	**Signature of Custodian**	**Date/Time**

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

20210908_BG13@1ft
2109125-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.60**	0.200	mg/kg dry	1	BEI0251	09/13/21	09/16/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**224**	0.0542	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**4.95**	0.0542	"	"	"	"	"	"	
Sodium	**2.61**	0.0542	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.0472**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**92.3**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**2.36**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

20210908_BG13@1ft

2109125-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.06**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

20210908_BG13@3ft
2109125-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**6.05**	0.200	mg/kg dry	1	BEI0251	09/13/21	09/16/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**151**	0.0550	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**11.9**	0.0550	"	"	"	"	"	"	
Sodium	**15.5**	0.0550	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.327**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**90.9**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**4.31**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

20210908_BG13@3ft

2109125-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 14:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.23**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

20210908_BG13@7ft4in

2109125-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**7.19**	0.200	mg/kg dry	1	BEI0251	09/13/21	09/16/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**73.0**	0.0548	mg/L dry	1	BEI0286	09/14/21	09/16/21	EPA 6020B	
Magnesium	**14.5**	0.0548	"	"	"	"	"	"	
Sodium	**26.3**	0.0548	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.736**	0.00100	units	1	BEI0356	09/16/21	09/16/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**91.3**		%	1	BEI0270	09/13/21	09/14/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**5.85**	0.0100	mmhos/cm	1	BEI0287	09/14/21	09/14/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

20210908_BG13@7ft4in

2109125-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/08/21 14:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.29**		pH Units	1	BEI0288	09/14/21	09/14/21	EPA 9045D	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0251 - EPA 3050B										
Blank (BEI0251-BLK1)				Prepared: 09/13/21 Analyzed: 09/15/21						
Arsenic	ND	0.200	mg/kg wet							
LCS (BEI0251-BS1)				Prepared: 09/13/21 Analyzed: 09/15/21						
Arsenic	42.9	0.200	mg/kg wet	40.0		107	80-120			
Duplicate (BEI0251-DUP1)		**Source: 2108313-01**		Prepared: 09/13/21 Analyzed: 09/15/21						
Arsenic	0.696	0.200	mg/kg dry		0.623			11.0	20	
Matrix Spike (BEI0251-MS1)		**Source: 2108313-01**		Prepared: 09/13/21 Analyzed: 09/16/21						
Arsenic	52.1	0.200	mg/kg dry	49.4	0.623	104	75-125			
Matrix Spike Dup (BEI0251-MSD1)		**Source: 2108313-01**		Prepared: 09/13/21 Analyzed: 09/16/21						
Arsenic	52.7	0.200	mg/kg dry	49.4	0.623	105	75-125	1.16	25	

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0286 - General Preparation										
Blank (BEI0286-BLK1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BEI0286-BS1)				Prepared: 09/14/21 Analyzed: 09/16/21						
Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	4.84	0.0500	"	5.00		96.9	70-130			
Sodium	4.89	0.0500	"	5.00		97.7	70-130			

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0270 - General Preparation										
Duplicate (BEI0270-DUP1)		**Source: 2108371-03**		Prepared: 09/13/21 Analyzed: 09/14/21						
% Solids	87.7		%		87.7			0.00	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0287 - General Preparation										
Blank (BEI0287-BLK1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BEI0287-BS1)				Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.156	0.0100	mmhos/cm	0.150		104	90-110			
Duplicate (BEI0287-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
Specific Conductance (EC)	0.217	0.0100	mmhos/cm		0.217			0.0461	20	

Summit Scientific

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

S2

Whiting Oil & Gas retail Denver CO, 80215	Project: Background 13 Project Number: 20221740.001A Project Manager: Vince DeCianne	**Reported:** 09/20/21 11:58

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BEI0288 - General Preparation										
LCS (BEI0288-BS1)				Prepared & Analyzed: 09/14/21						
pH	9.31		pH Units	9.21		101	95-105			
Duplicate (BEI0288-DUP1)		**Source: 2109121-04**		Prepared & Analyzed: 09/14/21						
pH	7.92		pH Units		7.79			1.65	20	

Summit Scientific

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

Notes and Definitions

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