

K.P. Kauffman Company, Inc.

Amoco-Charter-Schneider #7 Flowline Release

Spill/Release Point ID: 479483
Weld County, Colorado

Site Investigation and Remediation Report

Submitted: May 7, 2021

1.0 INTRODUCTION

K.P. Kauffman Company, Inc. (KPK) has performed an investigation and remediation following the discovery of the Amoco-Charter-Schneider #7 flowline release (Spill/Release Point ID 479483) in Weld County, Colorado. The flowline release occurred on February 19, 2021, east northeast of the intersection of Weld County Road (WCR) 2 and WCR 17. The location of the flowline release is illustrated on Figure 1 which has been provided in Appendix A. KPK has performed excavation activities to further investigate and remediate the flowline release location, as well as completed necessary repairs to bring the flowline back into service. Based on completed site investigation and remediation activities performed, the soil impacts from flowline release location have been 1) delineated both vertically and horizontally and 2) removed and disposed of at a certified disposal location.

2.0 FIELD ACTIVITIES

2.1 Flowline Release Investigation

On, or about March 1, 2021 excavation of impacted soil as a result of the flowline release was completed by KPK. The excavation of contaminated soil created an area of approximately 70 feet (ft.) long, 10 ft. wide, and 5 ft. deep. The excavation area is illustrated in Figure 2 which has been provided in Appendix A. Photographs of the excavation have been provided in Appendix B. Top soil was present along the sidewalls of the excavation area from the surface to 1 ft. below ground surface (BGS). The top soil was underlain by sandy clay to the base of the excavation area. **Groundwater was not encountered during the excavation process.**

Prior to the collection of discrete soil samples, the sidewalls and floor of the excavation area were field screened using a photoionization detector (PID) equipped with a 10.8 electro-volt lamp. PID field screening did not detect any presence of volatile organic compounds (VOCs) in the soil, indicating that the contaminated soil had been fully excavated and that the soil impacts associated with the flowline release had been defined both vertically and horizontally. Removal of impacted soil was confirmed with soil sampling and analysis described below.

KPK removed 240 tons (200 cubic yards) of impacted soil from the flowline release location and hauled it to a certified disposal facility. Soil manifests for the contaminated soil have been included in Appendix C.

2.2 Soil Sampling

On May 1, 2021, KPK collected five (5) soil samples from the excavation area at a depth of 5 ft. BGS. The soil sample locations were chosen based on the results of PID field screening. Based on PID field screening producing no detection of VOCs from the excavation area, soil samples were collected from center sections of the side walls and floor, as a best representation of the entire excavation area. The soil sample locations are illustrated in Figure 2 which is included in Appendix A.

The collected soil samples were field screened for VOCs with a PID. The PID did not detect a presence of VOCs in any of the soil samples. The collected soil samples were screened for odors, staining and/or discoloration. None of the samples exhibited any hydrocarbon odor, staining or discoloration.

2.3 Analytical Results

The soil samples were handled with clean, new, nitrile gloves and placed in laboratory supplied sample containers and labeled. Collected soil samples were placed in a cooler with ice and delivered to a certified laboratory under chain-of-custody documentation. Per COGCC Rule, all collected soil samples were analyzed for the full suite of Table 915-1 analytes, including inorganics and metals.

The laboratory results indicated soil samples collected from the excavation area were either non detect or below the COGCC reporting limit based on thresholds established in Table 915-1, with the exception of arsenic. A background sample was collected (Sample ID: 35ft Surrounding (BG)) to show that arsenic is naturally occurring in high concentrations in the area of the flowline release location. The results of the background sample show native soils have arsenic concentrations comparable to the confirmation soil samples collected from the excavation area (i.e., samples collected from the excavation area had measured arsenic levels within 1.25x the collected background sample). The laboratory results have been summarized in Appendix D.

The laboratory analytical reports and chain-of-custody (COC) forms are included in Appendix E. Please note that the COC did not accurately capture all samples collected and that one sample was missing from the COC. The laboratory was able to catch the recording error and analyze the

missing sample. The COC was not corrected; however, all soil samples collected are accurately reported in the laboratory analysis report.

3.0 CONCLUSIONS AND RECOMMENDATIONS

On or about March 1, 2021 the excavation of contaminated soil at Amoco-Charter-Schneider #7 flowline release was completed to a depth of 5 ft. No groundwater was encountered during the excavation process. Five (5) discrete soil samples were collected and analyzed for analytes in Table 915-1 following the completion of excavation activities. The laboratory results indicated that only arsenic exceeded thresholds established in Table 915-1; however the analytical results of the collected background sample show that arsenic is naturally occurring above the threshold in Table 915-1.

Based on the analytical results of the soil samples, additional work at the flowline release location is not warranted at this time.

Appendix A: Location Maps



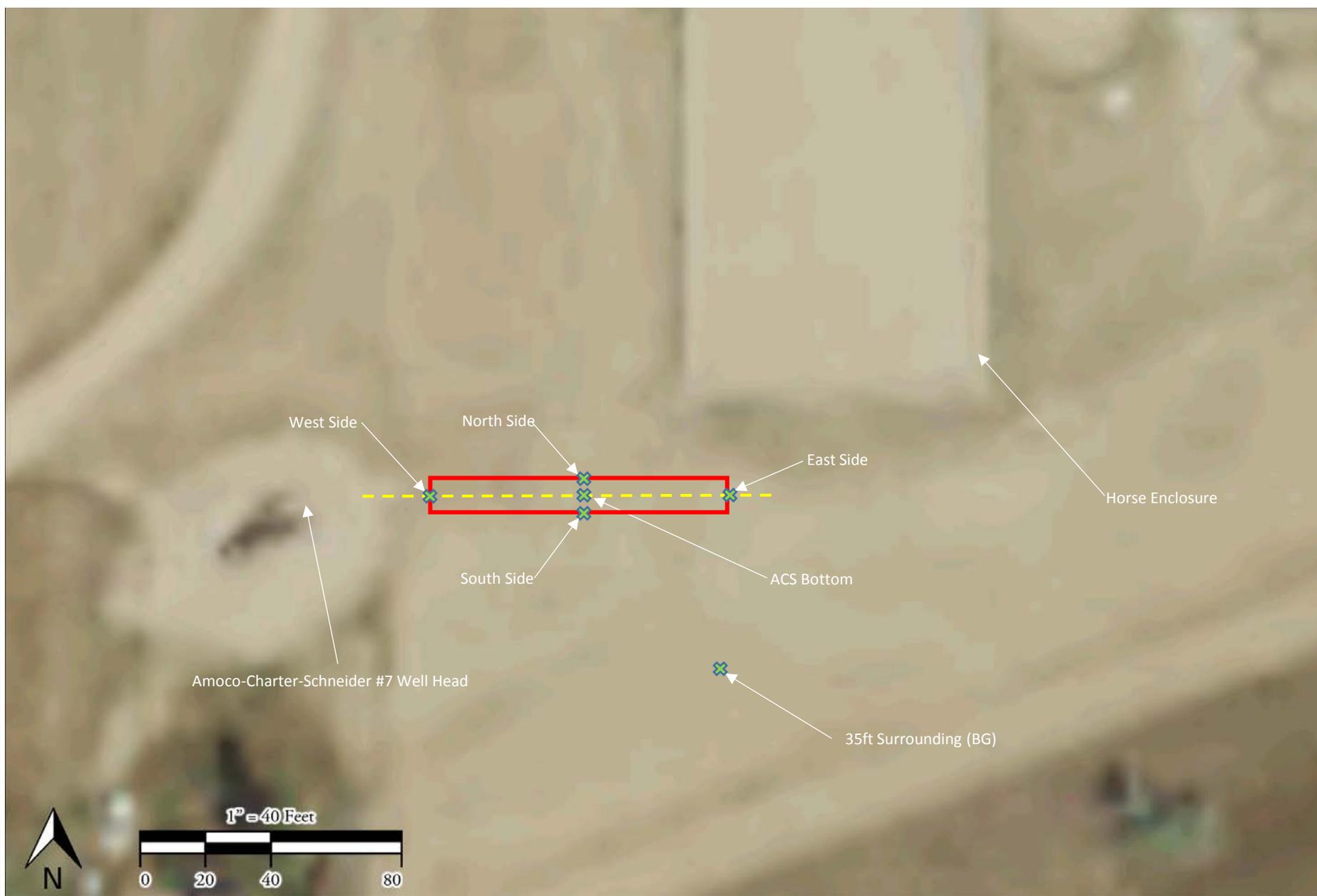
Date:	February 2021
Designed By:	K.P. Kauffman Co.
Drawn By:	MWK



K.P. Kauffman Company, Inc.
 1675 Broadway, Suite 2800
 Denver CO, 80202

K.P. Kauffman Company, Inc.
AMOCO-CHARTER-SCHNEIDER #7 Flowline Release
 SESW, Section 33, Township 1 North, Range 67 West
 Weld County, Colorado

Figure #1
 Site Map



Legend

- Limits of Excavation
- ✕ Soil Sample Location
- - - ACS #7 Flowline

Soil Sample Details:
Soil Samples Collected 02/26/2021

Sample ID	Latitude	Longitude	Depth (ft.)
North Side	40.00227	-104.8974	3
South Side	40.00226	-104.8974	3
East Side	40.00227	-104.8973	3
West Side	40.00227	-104.8975	3
ACS Bottom	40.10072	-104.9826	5
35ft Surrounding (BG)	40.00231	-104.8973	3

Date: May 2021

Designed By: K.P. Kauffman Co.

Drawn By: JRR



K.P. Kauffman Company, Inc.
1675 Broadway, Suite 2800
Denver CO, 80202

K.P. Kauffman Company, Inc.
AMOCO-CHARTER-SCHNEIDER #7 Flowline Release
SESW, Section 33, Township 1 North, Range 67 West
Weld County, Colorado

Figure #2
Soil Sample Location Map

Appendix B: Excavation Pictures

Photos of the ACS#7 Flowline Repair and Excavation



Appendix C: Soil Manifests

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

HAZARDOUS WASTE MANIFEST

Manifest Number: **4162**

Approval Number: FR16050

Expiration Date: 2/27/2020

Weighed: AMY B
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES:: PETROLEUM CONT SOIL DRILL CUTT
YARDS:: K P KAUFFMAN
PO#:: REPLACES # 2044796
Manifest#: 4162

DATE IN: 02/22/2021 TIME IN: 13:10:58
DATE OUT: 02/22/2021 TIME OUT: 13:10:58

INBOUND TICKET Number: 03-02045000

MANUAL GROSS WT. 44620 LB
STORED TARE WT. 20980 LB
NET WEIGHT 23640 LB

Qty Description Amount
11.82 ContSoil-E&P/Ton

Generator Information (generator to complete)

K P Kauffman Site Name: ACS #7
County Road 22 Address: _____

ton, CO City, State: _____

Zip: _____

Kauffman Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Consultant: _____
Soil Address: _____

E&P Exempt: Petroleum City, State: _____
Contaminated Soil Zip: _____

ards Tons Contact Person: _____

Phone #: _____ Fax: _____

The same material represented on the Special Waste Application identified by the above Special
as delivered to the transporter on the shipment date referenced below.

[Signature] 2-22-21
(type) Signature of Generator's Authorized Agent Shipment Date

Transporter Information (transporter to complete)

nan Well Service
County Road 22

pton, CO

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

I/WE THE UNDERSIGNED, CERTIFY THAT THE WASTE DELIVERED FOR DISPOSAL IS NON-HAZARDOUS SOLID WASTE MATERIALS.

Operating Hours: M-F 6am-5pm, Sat 6am-2pm
Phone: 303-673-9431

33-5670 I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

[Signature]
Name of Driver (print / type)

[Signature]
Signature of Driver

2-22-21
Date

Section 3

Destination Information (disposal facility to complete) 2045000

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes

PCSEP_T

Charge To

2140

Volume Received Ticket # 2045000
Yards _____ Tons 11.82 Other _____
Grid _____ Elevation _____

AB
Landfill Authorized Agent Name (print / type)

AB
Signature of Landfill's Authorized Agent

2-22-21
Date

The material delivered above was received at the landfill.

White: Landfill

Yellow: Generator

Pink: Transporter

Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

Weighed: JOYCE
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES:: PETROLEUM CONT SOIL DRILL CUTT
YARDS:: K P KAUFFMAN
PO#:: BY TON
Manifest#: 4163

DATE IN: 02/22/2021 TIME IN: 13:03:21
DATE OUT: 02/22/2021 TIME OUT: 13:03:21

INBOUND TICKET Number: 03-02044989

SCALE 1 GROSS WT. 47580 LB
STORED TARE WT. 20980 LB
NET WEIGHT 26600 LB

Qty Description Amount
13.30 ContSoil-E&P/Ton

X _____

I/WE THE UNDERSIGNED, CERTIFY THAT THE
WASTE DELIVERED FOR DISPOSAL IS
NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

RITCHIE Pendley
Name of Driver (print / type)

Ritchie Pendley
Signature of Driver

2-22-21
Date

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

AZARDOUS WASTE MANIFEST

Manifest Number: **4163**

Approval Number: FR16050

Expiration Date: 2/27/2020

Generator Information (generator to complete)

an _____ Site Name: ACS #7
Road 22 _____ Address: _____

O _____ City, State: _____
_____ Zip: _____

nan _____ Contact Person: _____

_____ Phone #: _____ Fax: _____

_____ Petroleum Contaminated Consultant: _____
_____ Address: _____

_____ Exempt: Petroleum City, State: _____
_____ Contaminated Soil Zip: _____

Tons Contact Person: _____

_____ Phone #: _____ Fax: _____

Material represented on the Special Waste Application identified by the above Special to the transporter on the shipment date referenced below.

Ritchie Pendley
Signature of Generator's Authorized Agent

2-22-21
Shipment Date

Transporter Information (transporter to complete)

Service _____
ad 22 _____

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T

Charge To 2140

Volume Received Ticket # 204498
Yards 10 Tons _____ Other _____
Grid _____ Elevation _____

Landfill Authorized Agent Name (print / type)

Signature of Landfill's Authorized Agent

2-22-21
Date

The material delivered above was received at the landfill.

White: Landfill Yellow: Generator Pink: Transporter Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

-HAZARDOUS WASTE MANIFEST

Manifest Number: **4165**
Approval Number: FR16050
Expiration Date: 2/27/2020

Weighed: AMY B
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES:: PETROLEUM CONT SOIL DRILL CUTT
YARDS:: K P KAUFFMAN
PO#:: BY TON
Manifest#: 4165

DATE IN: 02/23/2021 TIME IN: 08:48:53
DATE OUT: 02/23/2021 TIME OUT: 08:48:53

INBOUND TICKET Number: 03-02045366

SCALE 1 GROSS WT. 45640 LB
STORED TARE WT. 20980 LB
NET WEIGHT 24660 LB

Qty	Description	Amount
12.33	ContSoil-E&P/Ton	

Generator Information (generator to complete)

Kauffman Site Name: ACS #7
County Road 22 Address: _____
ton, CO City, State: _____
Zip: _____

Kauffman Contact Person: _____
Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Consultant: _____
Soil Address: _____

E&P Exempt: Petroleum City, State: _____
Contaminated Soil Zip: _____

Yards Tons Contact Person: _____
Phone #: _____ Fax: _____

the same material represented on the Special Waste Application identified by the above Special
has delivered to the transporter on the shipment date referenced below.

[Signature] Signature of Generator's Authorized Agent
2-23-21 Shipment Date

Transporter Information (transporter to complete)

man Well Service
County Road 22
pton, CO
Zip: 80021

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

I/WE THE UNDERSIGNED, CERTIFY THAT THE WASTE DELIVERED FOR DISPOSAL IS NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670 I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE Pendley Name of Driver (print / type) [Signature] Signature of Driver 2-23-21 Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T
Charge To 2140

Volume Received Ticket # 2045366
Yards _____ Tons 12.33 Other _____
Grid _____ Elevation _____

AD Landfill Authorized Agent Name (print / type) AB Signature of Landfill's Authorized Agent 2-23-21 Date

The material delivered above was received at the landfill.

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

HAZARDOUS WASTE MANIFEST

Manifest Number: **4180**

Approval Number: FR16050

Expiration Date: 2/27/2020

Generator Information (generator to complete)

Weighed: JOYCE
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

an _____ Site Name: ACS # 7
y Road 22 _____ Address: _____
_____ City, State: _____
CO _____ Zip: _____

ffman _____ Contact Person: _____
_____ Phone #: _____ Fax: _____

petroleum Contaminated _____ Consultant: _____
oil _____ Address: _____

&P Exempt: Petroleum _____ City, State: _____
Contaminated Soil _____ Zip: _____

ds Tons Contact Person: _____
_____ Phone #: _____ Fax: _____

The same material represented on the Special Waste Application identified by the above Special
delivered to the transporter on the shipment date referenced below.

1 Ritchie Pendley 2-23-21
(type) Signature of Generator's Authorized Agent Shipment Date

Transporter Information (transporter to complete)

an Well Service _____
ounty Road 22 _____
ton, CO _____

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

I/WE THE UNDERSIGNED, CERTIFY THAT THE WASTE DELIVERED FOR DISPOSAL IS NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE Pendley Ritchie Pendley 2-23-21
Name of Driver (print / type) Signature of Driver Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T
Charge To 2140

Volume Received 2045697 Ticket #
Yards _____ Tons 383 Other _____
Grid _____ Elevation _____

Landfill Authorized Agent Name (print / type) Signature of Landfill's Authorized Agent Date

The material delivered above was received at the landfill.

White: Landfill Yellow: Generator Pink: Transporter Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

-HAZARDOUS WASTE MANIFEST

Manifest Number: **4160**

Approval Number: FR16050

Expiration Date: 2/27/2020

Generator Information (generator to complete)

Kauffman Site Name: ACS #7
County Road 22 Address: _____

on, CO City, State: _____
_____ Zip: _____

Kauffman Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Consultant: _____
Soil Address: _____

E&P Exempt: Petroleum City, State: _____
Contaminated Soil Zip: _____

ards Tons Contact Person: _____
_____ Phone #: _____ Fax: _____

the same material represented on the Special Waste Application identified by the above Special as delivered to the transporter on the shipment date referenced below.

X _____

/ type) Ritchie Pendley Signature of Generator's Authorized Agent 2-26-21 Shipment Date

Transporter Information (transporter to complete)

nan Well Service
County Road 22

ton, CO

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

I/WE THE UNDERSIGNED, CERTIFY THAT THE WASTE DELIVERED FOR DISPOSAL IS NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE Pendley Name of Driver (print / type) Ritchie Pendley Signature of Driver 2-26-21 Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T
Charge To 2140

Volume Received 20471/2
Yards _____ Tons 2.16 Other _____
Grid _____ Elevation _____

AS Landfill Authorized Agent Name (print / type) AS Signature of Landfill's Authorized Agent 2-26-21 Date

The material delivered above was received at the landfill.

White: Landfill

Yellow: Generator

Pink: Transporter

Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

-HAZARDOUS WASTE MANIFEST

Manifest Number: **4266**
Approval Number: FR16050
Expiration Date: 2/27/2020

Weighed: AMY B
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES:: PETROLEUM CONT SOIL DRILL CUTT
YARDS:: K P KAUFFMAN
PO#:: BY TON
Manifest#: 4266

DATE IN: 02/26/2021 TIME IN: 15:34:25
DATE OUT: 02/26/2021 TIME OUT: 15:34:25

INBOUND TICKET Number: 03-02047202

SCALE 1 GROSS WT. 44960 LB
STORED TARE WT. 20980 LB
NET WEIGHT 23980 LB

Qty	Description	Amount
11.99	ContSoil-E&P/Ton	

Generator Information (generator to complete)

Kauffman
County Road 22
ton, CO
Site Name: ACS # 7
Address: _____
City, State: _____
Zip: _____

Kauffman
Contact Person: _____
Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Soil
Consultant: _____
Address: _____

E&P Exempt: Petroleum Contaminated Soil
City, State: _____
Zip: _____

Yards Tons
Contact Person: _____
Phone #: _____ Fax: _____

is the same material represented on the Special Waste Application identified by the above Special
was delivered to the transporter on the shipment date referenced below.

Ray / type) Signature of Generator's Authorized Agent
Rita Pendley Signature of Generator's Authorized Agent
2-26-21 Shipment Date

Transporter Information (transporter to complete)

Kauffman Well Service
County Road 22
upton, CO
1

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

I/WE THE UNDERSIGNED, CERTIFY THAT THE WASTE DELIVERED FOR DISPOSAL IS NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE Pendley Name of Driver (print / type)
Rita Pendley Signature of Driver
2-26-21 Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T
Charge To 2140

Volume Received Ticket # 2047202
Yards _____ Tons 11.99 Other _____
Grid _____ Elevation _____

AR Landfill Authorized Agent Name (print / type)
AR Signature of Landfill's Authorized Agent
2-26-21 Date

The material delivered above was received at the landfill.

Operating Hours: M-F 6am-5pm, Sat 6am-2pm
Phone: 303-673-9431

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

Weighed: JOYCE
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES: PETROLEUM CONT SOIL DRILL CUTT
YARDS: K P KAUFFMAN
PO#: BY TON
Manifest#: 4155

DATE IN: 02/24/2021 TIME IN: 13:26:46
DATE OUT: 02/24/2021 TIME OUT: 13:26:46

INBOUND TICKET Number: 03-02046332

SCALE 1 GROSS WT. 47060 LB
STORED TARE WT. 20980 LB
NET WEIGHT 26080 LB

Qty	Description	Amount
13.04	ContSoil-E&P/Ton	

X

I/WE THE UNDERSIGNED, CERTIFY THAT THE
WASTE DELIVERED FOR DISPOSAL IS
NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE RENDLEY
Name of Driver (print / type)

Ritchie Rendley
Signature of Driver

2-24-21
Date

AZARDOUS WASTE MANIFEST

Manifest Number: **4155**

Approval Number: FR16050

Expiration Date: 2/27/2020

Generator Information (generator to complete)

Site Name: ACS # 7
Address: _____
City, State: _____
Zip: _____

Contact Person: _____
Phone #: _____ Fax: _____

Contaminated Consultant: _____
Address: _____
empt: Petroleum City, State: _____
nated Soil Zip: _____

Tons Contact Person: _____
Phone #: _____ Fax: _____

Material represented on the Special Waste Application identified by the above Special the transporter on the shipment date referenced below.

Ritchie Rendley
Signature of Generator's Authorized Agent

2-24-21
Shipment Date

Transporter Information (transporter to complete)

Address: _____
City, State: _____
Zip: _____

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

Section 3

Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes: PCSEP_T
Charge To: 2140

Volume Received Ticket # 2046332
Yards 10 Tons _____ Other _____
Grid _____ Elevation _____

Landfill Authorized Agent Name (print / type)

Signature of Landfill's Authorized Agent

Date 2-24-21

The material delivered above was received at the landfill.

White: Landfill Yellow: Generator Pink: Transporter Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

HAZARDOUS WASTE MANIFEST

Manifest Number: **4154**
Approval Number: FR16050
Expiration Date: 2/27/2020

Generator Information (generator to complete)

Kauffman Site Name: ACS #7
County Road 22 Address: _____

on, CO City, State: _____

Kauffman Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Consultant: _____
Soil Address: _____

E&P Exempt: Petroleum City, State: _____
Contaminated Soil Zip: _____

Yards Tons Contact Person: _____

Phone #: _____ Fax: _____

I hereby warrant that the same material represented on the Special Waste Application identified by the above Special
has delivered to the transporter on the shipment date referenced below.
1 Ritchie Pendley 2-24-21

Signature of Generator's Authorized Agent Shipment Date

Transporter Information (transporter to complete)

man Well Service
County Road 22

pton, CO

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

Phone #: 303-833-5670
I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.
RITCHIE Pendley Ritchie Pendley 2-24-21

Name of Driver (print / type) Signature of Driver Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T
Charge To 2140

Volume Received Ticket # 2046193
Yards _____ Tons _____ Other _____
Grid _____ Elevation _____

AB AB 2-24-21

Landfill Authorized Agent Name (print / type) Signature of Landfill's Authorized Agent Date

The material delivered above was received at the landfill.
White: Landfill Yellow: Generator Pink: Transporter Gold: Consultant

Operating Hours: M-F 6am-5pm, Sat 6am-2pm
Phone: 303-673-9431

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

Weighed: JOYCE
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES:: PETROLEUM CONT SOIL DRILL CUTT
YARDS:: K P KAUFFMAN
PO#:: BY TON
Manifest#: 4268

DATE IN: 03/02/2021 TIME IN: 14:43:54
DATE OUT: 03/02/2021 TIME OUT: 14:43:54

INBOUND TICKET Number: 03-02048408

SCALE 1 GROSS WT. 49020 LB
STORED TARE WT. 20980 LB
NET WEIGHT 28040 LB

Qty Description Amount
14.02 ContSoil-E&P/Ton

X _____

Manifest Number: **4268**

Approval Number: FR16050

Expiration Date: 2/27/2020

HAZARDOUS WASTE MANIFEST

Generator Information (generator to complete)

_____ Site Name: ACS #7
_____ Address: _____
_____ City, State: _____
_____ Zip: _____

_____ Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated _____ Consultant: _____
Soil _____ Address: _____

E&P Exempt: Petroleum _____ City, State: _____
Contaminated Soil _____ Zip: _____

_____ Tons Contact Person: _____

Phone #: _____ Fax: _____

I hereby warrant that the same material represented on the Special Waste Application identified by the above Special Application was delivered to the transporter on the shipment date referenced below.

Ken _____ Ritchie Pendley 3-2-21
_____/type) Signature of Generator's Authorized Agent Shipment Date

Transporter Information (transporter to complete)

_____ man Well Service
_____ County Road 22

_____ nton, CO

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

I/WE THE UNDERSIGNED, CERTIFY THAT THE WASTE DELIVERED FOR DISPOSAL IS NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

Ritchie Pendley _____ Ritchie Pendley 3-2-21
Name of Driver (print / type) Signature of Driver Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T

Charge To 2140

Volume Received Ticket # 2042400
Yards _____ Tons 14.02 Other _____
Grid _____ Elevation _____

Landfill Authorized Agent Name (print / type) Signature of Landfill's Authorized Agent Date

The material delivered above was received at the landfill.

White: Landfill Yellow: Generator Pink: Transporter Gold: Consultant

Operating Hours: M-F 6am-5pm, Sat 6am-2pm
Phone: 303-673-9431

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

Weighed: JOYCE
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES:: PETROLEUM CONT SOIL DRILL CUTT
YARDS:: K P KAUFFMAN
PC#: BY TON
Manifest#: 4267

DATE IN: 03/02/2021 TIME IN: 13:28:41
DATE OUT: 03/02/2021 TIME OUT: 13:28:41

INBOUND TICKET Number: 03-02048333

SCALE 1 GROSS WT. 45920 LB
STORED TARE WT. 20980 LB
NET WEIGHT 24940 LB

Qty Description Amount
12.47 ContSoil-E&P/Ton

X _____

I/WE THE UNDERSIGNED, CERTIFY THAT THE
WASTE DELIVERED FOR DISPOSAL IS
NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

I herby warrant that the above material was picked up at the generator site
listed above and delivered without incident to the destination listed below.

RITCHIE Pendley
Name of Driver (print / type)

Ritchie Pendley
Signature of Driver

3-2-21
Date

Section 3

Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T
Charge To 2140

Volume Received Ticket # 2048333
Yards 10 Tons _____ Other _____
Grid _____ Elevation _____

Landfill Authorized Agent Name (print / type)

Signature of Landfill's Authorized Agent

Date

The material delivered above was received at the landfill.

White: Landfill

Yellow: Generator

Pink: Transporter

Gold: Consultant

Manifest Number: **4267**

Approval Number: FR16050

Expiration Date: 2/27/2020

HAZARDOUS WASTE MANIFEST

Generator Information (generator to complete)

man Site Name: ACS #7
nty Road 22 Address: _____
, CO City, State: _____
Zip: _____

uffman Contact Person: _____
Phone #: _____ Fax: _____

petroleum Contaminated Consultant: _____
oil Address: _____

&P Exempt: Petroleum City, State: _____
contaminated Soil Zip: _____

ds Tons Contact Person: _____
Phone #: _____ Fax: _____

same material represented on the Special Waste Application identified by the above Special
delivered to the transporter on the shipment date referenced below.

Ritchie Pendley 3-2-21
Signature of Generator's Authorized Agent Shipment Date

Transporter Information (transporter to complete)

Well Service
nty Road 22
, CO

Important Notice
Disposal facility below must be
notified in ADVANCE before
delivery of waste with SPECIAL
HANDLING instructions.

I herby warrant that the above material was picked up at the generator site
listed above and delivered without incident to the destination listed below.

RITCHIE Pendley
Name of Driver (print / type)

Ritchie Pendley
Signature of Driver

3-2-21
Date

Front Range Landfill
 FRONT RANGE LANDFILL
 PO Box 320
 Erie, CO 80516

-HAZARDOUS WASTE MANIFEST

Manifest Number: **4269**

Approval Number: FR16050

Expiration Date: 2/27/2020

Weighed: AMY B
 BILL TO: 2140
 K P KAUFFMAN COMPANY
 1675 BROADWAY STE 2800
 DENVER CO 80202-4519

Vehicle ID: KP_505
 Reference: FR16050
 Grid: FRL-WK1
 NOTES:: PETROLEUM CONT SOIL DRILL CUTT
 YARDS:: K P KAUFFMAN
 PO#:: BY TON
 Manifest#: 4269

DATE IN: 03/03/2021 TIME IN: 09:07:18
 DATE OUT: 03/03/2021 TIME OUT: 09:07:18

INBOUND TICKET Number: 03-02048614

SCALE 1 GROSS WT.	48120 LB
STORED TARE WT.	20980 LB
NET WEIGHT	27140 LB

Qty	Description	Amount
13.57	ContSoil-E&P/Ton	

Generator Information (generator to complete)

Kauffman Site Name: ACS #7
County Road 22 Address: _____

ton, CO City, State: _____
 _____ Zip: _____

Kauffman Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Consultant: _____
Soil Address: _____

E&P Exempt: Petroleum City, State: _____
Contaminated Soil Zip: _____

Yards Tons Contact Person: _____

Phone #: _____ Fax: _____

is the same material represented on the Special Waste Application identified by the above Special waste delivered to the transporter on the shipment date referenced below.

Pendley Signature of Generator's Authorized Agent 3-3-21 Shipment Date
 (print / type)

Transporter Information (transporter to complete)

ffman Well Service
County Road 22

upton, CO
1

Important Notice
 Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

I/WE THE UNDERSIGNED, CERTIFY THAT THE WASTE DELIVERED FOR DISPOSAL IS NON-HAZARDOUS SOLID WASTE MATERIALS.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE Pendley Signature of Driver 3-3-21 Date
 Name of Driver (print / type)

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
 1830 WCR 5 POB 320
 Erie, CO 80516
 Phone: 303-673-9431
 Fax: 303-673-9432

Waste Codes PCSEP_T

Charge To 2140

Volume Received Ticket # 2048614
 Yards _____ Tons 13.57 Other _____
 Grid _____ Elevation _____

As Signature of Landfill's Authorized Agent 3-3-21 Date
 Landfill Authorized Agent Name (print / type)

The material delivered above was received at the landfill.

White: Landfill Yellow: Generator Pink: Transporter Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

I-HAZARDOUS WASTE MANIFEST

Manifest Number: **4270**

Approval Number: FR16050

Expiration Date: 2/27/2020

Generator Information (generator to complete)

Kauffman
County Road 22
Site Name: ACS # 7
Address: _____

oton, CO
City, State: _____
Zip: _____

Kauffman
Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated
Soil
Consultant: _____
Address: _____

E&P Exempt: Petroleum
Contaminated Soil
City, State: _____
Zip: _____

Yards Tons
Contact Person: _____

Phone #: _____ Fax: _____

is the same material represented on the Special Waste Application identified by the above Special
was delivered to the transporter on the shipment date referenced below.

X _____
Signature of Generator's Authorized Agent: Ritchie Pendley 3-3-21
Shipment Date

Transporter Information (transporter to complete)

ffman Well Service
County Road 22
upton, CO
1

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

Name of Driver (print / type): RITCHIE Pendley
Signature of Driver: Ritchie Pendley
Date: 3-3-21

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes: PCSEP_T
Charge To: 2140

Volume Received Ticket # 2048608
Yards _____ Tons 11.81 Other _____
Grid _____ Elevation _____

Landfill Authorized Agent Name (print / type): AG
Signature of Landfill's Authorized Agent: AG
Date: 3-3-21

The material delivered above was received at the landfill.

White: Landfill

Yellow: Generator

Pink: Transporter

Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

-HAZARDOUS WASTE MANIFEST

Manifest Number: **4271**

Approval Number: FR16050

Expiration Date: 2/27/2020

Generator Information (generator to complete)

Weighed: AMY B
BILL TO: 2140
K P KAUFFMAN COMPANY
1675 BROADWAY STE 2800
DENVER CO 80202-4519

Kauffman Site Name: ACS #7
County Road 22 Address: _____

ton, CO City, State: _____

Zip: _____

Kauffman Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Consultant: _____
Soil Address: _____

E&P Exempt: Petroleum City, State: _____
Contaminated Soil Zip: _____

Yards Tons Contact Person: _____

Phone #: _____ Fax: _____

Vehicle ID: KP_505
Reference: FR16050
Grid: FRL-WK1
NOTES:: PETROLEUM CONT SOIL DRILL CUTT
YARDS:: K P KAUFFMAN
PO#:: BY TON
Manifest#: 4271

DATE IN: 03/03/2021 TIME IN: 11:48:52
DATE OUT: 03/03/2021 TIME OUT: 11:48:52

INBOUND TICKET Number: 03-02048756

SCALE 1 GROSS WT. 46120 LB
STORED TARE WT. 20980 LB
NET WEIGHT 25140 LB

Qty	Description	Amount
12.57	ContSoil-E&P/Ton	

is the same material represented on the Special Waste Application identified by the above Special was delivered to the transporter on the shipment date referenced below.

Day Ritchie Pendley 3-3-21

Signature of Generator's Authorized Agent Shipment Date

Transporter Information (transporter to complete)

ffman Well Service
County Road 22

upton, CO
1

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE Pendley Ritchie Pendley 3-3-21

Name of Driver (print / type) Signature of Driver Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T
Charge To 2140

Volume Received Ticket # 2048756
Yards _____ Tons 12.57 Other _____
Grid _____ Elevation _____

AB AB 3-3-21

Landfill Authorized Agent Name (print / type) Signature of Landfill's Authorized Agent Date

The material delivered above was received at the landfill.

White: Landfill Yellow: Generator Pink: Transporter Gold: Consultant

Front Range Landfill
FRONT RANGE LANDFILL
PO Box 320
Erie, CO 80516

-HAZARDOUS WASTE MANIFEST

Manifest Number: **4273**

Approval Number: FR16050

Expiration Date: 2/27/2020

Generator Information (generator to complete)

Kauffman Site Name: ACS # 7
County Road 22 Address: _____

ton, CO City, State: _____

Zip: _____

Kauffman Contact Person: _____

Fax: _____ Phone #: _____ Fax: _____

Petroleum Contaminated Consultant: _____
Soil Address: _____

E&P Exempt: Petroleum City, State: _____
Contaminated Soil Zip: _____

Yards Tons Contact Person: _____

Phone #: _____ Fax: _____

is the same material represented on the Special Waste Application identified by the above Special was delivered to the transporter on the shipment date referenced below.

Lay Peter Pendley 3-4-21

Signature of Generator's Authorized Agent Shipment Date

Transporter Information (transporter to complete)

ffman Well Service
County Road 22

upton, CO
1

Important Notice
Disposal facility below must be notified in ADVANCE before delivery of waste with SPECIAL HANDLING instructions.

Phone #: 303-833-5670

I hereby warrant that the above material was picked up at the generator site listed above and delivered without incident to the destination listed below.

RITCHIE Pendley 3-4-21

Name of Driver (print / type) Signature of Driver Date

Section 3 Destination Information (disposal facility to complete)

Front Range Landfill
1830 WCR 5 POB 320
Erie, CO 80516
Phone: 303-673-9431
Fax: 303-673-9432

Waste Codes PCSEP_T

Charge To 2140

Volume Received Ticket # 2044088
Yards _____ Tons 11.62 Other _____
Grid _____ Elevation _____

RITCHIE Pendley 3-4-21

Landfill Authorized Agent Name (print / type) Signature of Landfill's Authorized Agent Date

White: Landfill

Yellow: Generator

Pink: Transporter

Gold: Consultant

The material delivered above was received at the landfill.

Appendix D: Comparison of Results with Table 915-1 Standards

Appendix E: Laboratory Analysis

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 10, 2021

Max Knop

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: ACS #7 Flowline Release

Work Order #2103039

Enclosed are the results of analyses for samples received by Summit Scientific on 03/02/21 10:19. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', written in a cursive style.

Paul Shrewsbury

President



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Side	2103039-01	Soil	03/01/21 14:00	03/02/21 10:19
South Side	2103039-02	Soil	03/01/21 14:00	03/02/21 10:19
West Side	2103039-03	Soil	03/01/21 14:00	03/02/21 10:19
CS 7 35 ft Surrounding	2103039-04	Soil	03/01/21 14:00	03/02/21 10:19
ACS Bottom	2103039-05	Soil	03/01/21 14:00	03/02/21 10:19
East Side	2103039-06	Soil	03/01/21 14:00	03/02/21 10:19

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.

Sample Receipt Checklist

2103039

S2 Work Order _____

Client: KP KAUFFMAN Client Project ID: ACS 7 FLOWLINE RELEASE

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.	✓			
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.

RZ
Custodian Printed Name or Initials

RZ
Signature of Custodian

3/2/21
Date/Time



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

North Side
2103039-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEC0112	03/04/21	03/04/21	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: **03/01/21 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		111 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		113 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEC0113	03/04/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		50.7 %		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.



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

North Side
2103039-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0143	03/06/21	03/09/21	EPA 8270D SIM	
Anthracene	0.0480	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	0.00658	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00908	0.00500	"	"	"	"	"	"	

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.29	0.213	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Barium	182	0.425	"	"	"	"	"	"	
Boron	0.425	0.0100	mg/L	"	BEC0153	03/08/21	03/09/21	"	
Cadmium	ND	0.213	mg/kg dry	"	BEC0131	03/05/21	03/06/21	"	
Copper	13.4	0.425	"	"	"	"	"	"	
Lead	9.05	0.213	"	"	"	"	"	"	
Nickel	16.7	0.425	"	"	"	"	"	"	

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.



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

North Side
2103039-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.276	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Silver	0.0839	0.0213	"	"	"	"	"	"	
Zinc	42.8	0.425	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0197	03/10/21	03/10/21	EPA 7196A	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	389	0.0531	mg/L dry	1	BEC0156	03/08/21	03/09/21	EPA 6020B	
Magnesium	246	0.0531	"	"	"	"	"	"	
Sodium	304	0.0531	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.97	0.100	units	1	BEC0203	03/10/21	03/10/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.1		%	1	BEC0116	03/05/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, 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.



K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

North Side
2103039-01 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.59	0.0100	mmhos/cm	1	BEC0185	03/09/21	03/09/21	EPA 120.1	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15		pH Units	1	BEC0186	"	03/09/21	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.



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

South Side
2103039-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0112	03/04/21	03/04/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0113	03/04/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		81.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

South Side
2103039-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0143	03/06/21	03/09/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.09	0.220	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Barium	261	0.440	"	"	"	"	"	"	
Boron	0.441	0.0100	mg/L	"	BEC0153	03/08/21	03/09/21	"	
Cadmium	0.226	0.220	mg/kg dry	"	BEC0131	03/05/21	03/06/21	"	
Copper	18.8	0.440	"	"	"	"	"	"	
Lead	12.4	0.220	"	"	"	"	"	"	
Nickel	20.7	0.440	"	"	"	"	"	"	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

South Side
2103039-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.286	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Silver	0.0815	0.0220	"	"	"	"	"	"	
Zinc	65.8	0.440	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0197	03/10/21	03/10/21	EPA 7196A	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.2	0.0550	mg/L dry	1	BEC0156	03/08/21	03/09/21	EPA 6020B	
Magnesium	20.9	0.0550	"	"	"	"	"	"	
Sodium	55.5	0.0550	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.89	0.100	units	1	BEC0203	03/10/21	03/10/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.0		%	1	BEC0116	03/05/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

South Side
2103039-02 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.499	0.0100	mmhos/cm	1	BEC0185	03/09/21	03/09/21	EPA 120.1	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.50		pH Units	1	BEC0186	"	03/09/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

West Side
2103039-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0112	03/04/21	03/04/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0113	03/04/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

West Side
2103039-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0143	03/06/21	03/09/21	EPA 8270D SIM	
Anthracene	0.00623	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	10.5	0.212	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Barium	118	0.425	"	"	"	"	"	"	
Boron	0.498	0.0100	mg/L	"	BEC0153	03/08/21	03/09/21	"	
Cadmium	ND	0.212	mg/kg dry	"	BEC0131	03/05/21	03/06/21	"	
Copper	14.9	0.425	"	"	"	"	"	"	
Lead	12.8	0.212	"	"	"	"	"	"	
Nickel	11.6	0.425	"	"	"	"	"	"	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

West Side
2103039-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.276	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Silver	0.0731	0.0212	"	"	"	"	"	"	
Zinc	44.5	0.425	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0197	03/10/21	03/10/21	EPA 7196A	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	65.7	0.0531	mg/L dry	1	BEC0156	03/08/21	03/09/21	EPA 6020B	
Magnesium	27.6	0.0531	"	"	"	"	"	"	
Sodium	28.3	0.0531	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.739	0.100	units	1	BEC0203	03/10/21	03/10/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.2		%	1	BEC0116	03/05/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

West Side
2103039-03 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.648	0.0100	mmhos/cm	1	BEC0185	03/09/21	03/09/21	EPA 120.1	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.30		pH Units	1	BEC0186	"	03/09/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

CS 7 35 ft Surrounding
2103039-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0112	03/04/21	03/04/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0113	03/04/21	03/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

CS 7 35 ft Surrounding
2103039-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0143	03/06/21	03/09/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.03	0.225	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Barium	235	0.449	"	"	"	"	"	"	
Cadmium	0.295	0.225	"	"	"	"	"	"	
Boron	0.185	0.0100	mg/L	"	BEC0153	03/08/21	03/09/21	"	
Copper	26.8	0.449	mg/kg dry	"	BEC0131	03/05/21	03/06/21	"	
Lead	12.7	0.225	"	"	"	"	"	"	
Nickel	20.4	0.449	"	"	"	"	"	"	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

CS 7 35 ft Surrounding
2103039-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.292	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Silver	0.0870	0.0225	"	"	"	"	"	"	
Zinc	64.5	0.449	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0197	03/10/21	03/10/21	EPA 7196A	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.9	0.0562	mg/L dry	1	BEC0156	03/08/21	03/09/21	EPA 6020B	
Magnesium	18.8	0.0562	"	"	"	"	"	"	
Sodium	10.0	0.0562	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.332	0.100	units	1	BEC0203	03/10/21	03/10/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.0		%	1	BEC0116	03/05/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

CS 7 35 ft Surrounding
2103039-04 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.605	0.0100	mmhos/cm	1	BEC0185	03/09/21	03/09/21	EPA 120.1	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.47		pH Units	1	BEC0186	"	03/09/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

**ACS Bottom
2103039-05 (Soil)**

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0112	03/04/21	03/04/21	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: **03/01/21 14:00**

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

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0113	03/04/21	03/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

ACS Bottom
2103039-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0143	03/06/21	03/09/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.63	0.225	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Barium	260	0.451	"	"	"	"	"	"	
Cadmium	0.247	0.225	"	"	"	"	"	"	
Boron	0.309	0.0100	mg/L	"	BEC0153	03/08/21	03/09/21	"	
Copper	9.39	0.451	mg/kg dry	"	BEC0131	03/05/21	03/06/21	"	
Lead	6.10	0.225	"	"	"	"	"	"	
Nickel	9.12	0.451	"	"	"	"	"	"	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

ACS Bottom
2103039-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.293	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Silver	ND	0.0225	"	"	"	"	"	"	
Zinc	27.5	0.451	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0197	03/10/21	03/10/21	EPA 7196A	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	129	0.0563	mg/L dry	1	BEC0156	03/08/21	03/10/21	EPA 6020B	
Magnesium	52.8	0.0563	"	"	"	"	"	"	
Sodium	109	0.0563	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.04	0.100	units	1	BEC0203	03/10/21	03/10/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8		%	1	BEC0116	03/05/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

ACS Bottom
2103039-05 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.25	0.0100	mmhos/cm	1	BEC0185	03/09/21	03/09/21	EPA 120.1	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.19		pH Units	1	BEC0186	"	03/09/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

East Side
2103039-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0112	03/04/21	03/04/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		115 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0113	03/04/21	03/05/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		88.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

East Side
2103039-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0143	03/06/21	03/09/21	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: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.90	0.222	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Barium	350	0.443	"	"	"	"	"	"	
Boron	0.364	0.0100	mg/L	"	BEC0153	03/08/21	03/09/21	"	
Cadmium	0.263	0.222	mg/kg dry	"	BEC0131	03/05/21	03/06/21	"	
Copper	19.2	0.443	"	"	"	"	"	"	
Lead	12.3	0.222	"	"	"	"	"	"	
Nickel	19.4	0.443	"	"	"	"	"	"	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

East Side
2103039-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.288	mg/kg dry	1	BEC0131	03/05/21	03/06/21	EPA 6020B	
Silver	0.0944	0.0222	"	"	"	"	"	"	
Zinc	61.5	0.443	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0197	03/10/21	03/10/21	EPA 7196A	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	57.4	0.0554	mg/L dry	1	BEC0156	03/08/21	03/10/21	EPA 6020B	
Magnesium	31.7	0.0554	"	"	"	"	"	"	
Sodium	73.4	0.0554	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.93	0.100	units	1	BEC0203	03/10/21	03/10/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.3		%	1	BEC0116	03/05/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

East Side
2103039-06 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.769	0.0100	mmhos/cm	1	BEC0185	03/09/21	03/09/21	EPA 120.1	

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

Date Sampled: **03/01/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BEC0186	"	03/09/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEC0112 - EPA 5030 Soil MS

Blank (BEC0112-BLK1)

Prepared & Analyzed: 03/04/21

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0454</i>		<i>"</i>	<i>0.0400</i>		<i>114</i>		<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0426</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>		<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>		<i>21-167</i>			

LCS (BEC0112-BS1)

Prepared & Analyzed: 03/04/21

Benzene	0.0793	0.0020	mg/kg	0.100		79.3		70-130			
Toluene	0.111	0.0050	"	0.100		111		70-130			
Ethylbenzene	0.106	0.0050	"	0.100		106		70-130			
m,p-Xylene	0.210	0.010	"	0.200		105		70-130			
o-Xylene	0.104	0.0050	"	0.100		104		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0434</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>		<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>		<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0419</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>		<i>21-167</i>			

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEC0113 - EPA 3550A

Blank (BEC0113-BLK1)

Prepared & Analyzed: 03/04/21

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							

LCS (BEC0113-BS1)

Prepared & Analyzed: 03/04/21

C10-C28 (DRO)	433	50	mg/kg	500	86.6	70-130				
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Matrix Spike (BEC0113-MS1)

Source: 2103081-01

Prepared & Analyzed: 03/04/21

C10-C28 (DRO)	413	50	mg/kg	500	13.1	80.0	70-130			
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Matrix Spike Dup (BEC0113-MSD1)

Source: 2103081-01

Prepared & Analyzed: 03/04/21

C10-C28 (DRO)	400	50	mg/kg	500	13.1	77.3	70-130	3.32	20	
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEC0143 - EPA 5030 Soil MS

Blank (BEC0143-BLK1)

Prepared: 03/06/21 Analyzed: 03/09/21

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	"								
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0164</i>		<i>"</i>	<i>0.0333</i>		<i>49.1</i>		<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0165</i>		<i>"</i>	<i>0.0333</i>		<i>49.4</i>		<i>40-150</i>			

LCS (BEC0143-BS1)

Prepared: 03/06/21 Analyzed: 03/09/21

Acenaphthene	0.0337	0.00500	mg/kg	0.0333	101	31-137
Anthracene	0.0351	0.00500	"	0.0333	105	30-120
Benzo (a) anthracene	0.0339	0.00500	"	0.0333	102	30-120
Benzo (a) pyrene	0.0354	0.00500	"	0.0333	106	30-120
Benzo (b) fluoranthene	0.0394	0.00500	"	0.0333	118	30-120
Benzo (k) fluoranthene	0.0388	0.00500	"	0.0333	116	30-120
Chrysene	0.0334	0.00500	"	0.0333	100	30-120
Dibenz (a,h) anthracene	0.0220	0.00500	"	0.0333	66.1	30-120
Fluoranthene	0.0317	0.00500	"	0.0333	95.1	30-120
Fluorene	0.0321	0.00500	"	0.0333	96.4	30-120
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	61.6	30-120
Pyrene	0.0296	0.00500	"	0.0333	88.8	35-142
1-Methylnaphthalene	0.0303	0.00500	"	0.0333	90.9	35-142
2-Methylnaphthalene	0.0329	0.00500	"	0.0333	98.7	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0202</i>		<i>"</i>	<i>0.0333</i>	<i>60.5</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0202</i>		<i>"</i>	<i>0.0333</i>	<i>60.6</i>	<i>40-150</i>

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEC0143 - EPA 5030 Soil MS

Matrix Spike (BEC0143-MS1)	Source: 2103035-01			Prepared: 03/06/21 Analyzed: 03/09/21					
Acenaphthene	0.0306	0.00500	mg/kg	0.0333	ND	91.9	31-137		
Anthracene	0.0324	0.00500	"	0.0333	ND	97.1	30-120		
Benzo (a) anthracene	0.0308	0.00500	"	0.0333	ND	92.5	30-120		
Benzo (a) pyrene	0.0332	0.00500	"	0.0333	ND	99.7	30-120		
Benzo (b) fluoranthene	0.0374	0.00500	"	0.0333	ND	112	30-120		
Benzo (k) fluoranthene	0.0369	0.00500	"	0.0333	ND	111	30-120		
Chrysene	0.0310	0.00500	"	0.0333	ND	93.0	30-120		
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.0	30-120		
Fluoranthene	0.0301	0.00500	"	0.0333	ND	90.4	30-120		
Fluorene	0.0290	0.00500	"	0.0333	ND	87.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0182	0.00500	"	0.0333	ND	54.6	30-120		
Pyrene	0.0272	0.00500	"	0.0333	ND	81.7	35-142		
1-Methylnaphthalene	0.0291	0.00500	"	0.0333	ND	87.3	15-130		
2-Methylnaphthalene	0.0318	0.00500	"	0.0333	ND	95.5	15-130		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0195</i>		"	<i>0.0333</i>		<i>58.4</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0191</i>		"	<i>0.0333</i>		<i>57.4</i>	<i>40-150</i>		

Matrix Spike Dup (BEC0143-MSD1)	Source: 2103035-01			Prepared: 03/06/21 Analyzed: 03/09/21					
Acenaphthene	0.0315	0.00500	mg/kg	0.0333	ND	94.5	31-137	2.80	30
Anthracene	0.0324	0.00500	"	0.0333	ND	97.1	30-120	0.0227	30
Benzo (a) anthracene	0.0311	0.00500	"	0.0333	ND	93.2	30-120	0.746	30
Benzo (a) pyrene	0.0333	0.00500	"	0.0333	ND	99.8	30-120	0.0972	30
Benzo (b) fluoranthene	0.0378	0.00500	"	0.0333	ND	114	30-120	1.17	30
Benzo (k) fluoranthene	0.0376	0.00500	"	0.0333	ND	113	30-120	1.87	30
Chrysene	0.0312	0.00500	"	0.0333	ND	93.5	30-120	0.539	30
Dibenz (a,h) anthracene	0.0201	0.00500	"	0.0333	ND	60.4	30-120	2.31	30
Fluoranthene	0.0293	0.00500	"	0.0333	ND	87.8	30-120	2.97	30
Fluorene	0.0302	0.00500	"	0.0333	ND	90.7	30-120	4.18	30
Indeno (1,2,3-cd) pyrene	0.0187	0.00500	"	0.0333	ND	56.0	30-120	2.55	30
Pyrene	0.0278	0.00500	"	0.0333	ND	83.4	35-142	2.06	30
1-Methylnaphthalene	0.0293	0.00500	"	0.0333	ND	87.9	15-130	0.744	50
2-Methylnaphthalene	0.0312	0.00500	"	0.0333	ND	93.7	15-130	1.89	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0192</i>		"	<i>0.0333</i>		<i>57.6</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0184</i>		"	<i>0.0333</i>		<i>55.1</i>	<i>40-150</i>		

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BEC0131 - EPA 3050B

Blank (BEC0131-BLK1)

Prepared & Analyzed: 03/05/21

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 (BEC0131-BS1)

Prepared & Analyzed: 03/05/21

Arsenic	44.7	0.200	mg/kg wet	40.0	112	80-120
Barium	40.6	0.400	"	40.0	101	80-120
Cadmium	2.09	0.200	"	2.00	105	80-120
Copper	41.6	0.400	"	40.0	104	80-120
Lead	20.0	0.200	"	20.0	100	80-120
Nickel	41.3	0.400	"	40.0	103	80-120
Selenium	3.37	0.260	"	4.00	84.3	80-120
Silver	1.98	0.0200	"	2.00	99.0	80-120
Zinc	45.8	0.400	"	40.0	115	80-120

Duplicate (BEC0131-DUP1)

Source: 2103039-01

Prepared: 03/05/21 Analyzed: 03/06/21

Arsenic	6.75	0.213	mg/kg dry	6.29	7.13	30
Barium	178	0.425	"	182	2.31	30
Cadmium	0.166	0.213	"	0.160	4.09	30
Copper	14.3	0.425	"	13.4	6.43	30
Lead	10.2	0.213	"	9.05	11.8	30
Nickel	18.4	0.425	"	16.7	9.74	30
Selenium	ND	0.276	"	ND		30
Silver	0.0899	0.0213	"	0.0839	6.79	30
Zinc	46.8	0.425	"	42.8	8.97	30

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control

Summit Scientific

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

Batch BEC0131 - EPA 3050B

Matrix Spike (BEC0131-MS1)		Source: 2103039-01			Prepared: 03/05/21		Analyzed: 03/06/21	
Arsenic	50.0	0.213	mg/kg dry	42.5	6.29	103	75-125	
Barium	220	0.425	"	42.5	182	88.8	75-125	
Cadmium	2.15	0.213	"	2.13	0.160	93.4	75-125	
Copper	55.1	0.425	"	42.5	13.4	98.2	75-125	
Lead	27.6	0.213	"	21.3	9.05	87.4	75-125	
Nickel	58.4	0.425	"	42.5	16.7	97.9	75-125	
Selenium	3.32	0.276	"	4.25	ND	78.2	75-125	
Silver	2.02	0.0213	"	2.13	0.0839	91.1	75-125	
Zinc	94.4	0.425	"	42.5	42.8	121	75-125	

Matrix Spike Dup (BEC0131-MSD1)		Source: 2103039-01			Prepared: 03/05/21		Analyzed: 03/06/21		
Arsenic	51.9	0.213	mg/kg dry	42.5	6.29	107	75-125	3.80	25
Barium	222	0.425	"	42.5	182	94.3	75-125	1.07	25
Cadmium	2.26	0.213	"	2.13	0.160	99.0	75-125	5.38	25
Copper	57.2	0.425	"	42.5	13.4	103	75-125	3.69	25
Lead	28.5	0.213	"	21.3	9.05	91.6	75-125	3.19	25
Nickel	61.8	0.425	"	42.5	16.7	106	75-125	5.72	25
Selenium	3.84	0.276	"	4.25	ND	90.2	75-125	14.4	25
Silver	2.10	0.0213	"	2.13	0.0839	94.9	75-125	3.92	25
Zinc	86.7	0.425	"	42.5	42.8	103	75-125	8.45	25

Batch BEC0153 - EPA 3050B

Blank (BEC0153-BLK1)					Prepared: 03/08/21		Analyzed: 03/09/21	
Boron	ND	0.0100	mg/L					

LCS (BEC0153-BS1)					Prepared: 03/08/21		Analyzed: 03/09/21	
Boron	5.20	0.0100	mg/L	5.00		104	80-120	

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control

Summit Scientific

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

Batch BEC0153 - EPA 3050B

Duplicate (BEC0153-DUP1)		Source: 2103035-01			Prepared: 03/08/21		Analyzed: 03/09/21		
Boron	0.441	0.0100	mg/L		0.428			2.92	20
Matrix Spike (BEC0153-MS1)		Source: 2103035-01			Prepared: 03/08/21		Analyzed: 03/09/21		
Boron	5.17	0.0100	mg/L	5.00	0.428	94.8	75-125		
Matrix Spike Dup (BEC0153-MSD1)		Source: 2103035-01			Prepared: 03/08/21		Analyzed: 03/09/21		
Boron	5.39	0.0100	mg/L	5.00	0.428	99.3	75-125	4.24	25

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BEC0197 - 3060A Mod

Blank (BEC0197-BLK1)

Prepared & Analyzed: 03/10/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEC0197-BS1)

Prepared & Analyzed: 03/10/21

Chromium, Hexavalent 23.9 0.30 mg/kg wet 25.0 95.6 80-120

Duplicate (BEC0197-DUP1)

Source: 2102366-03

Prepared & Analyzed: 03/10/21

Chromium, Hexavalent ND 0.30 mg/kg wet ND 20

Matrix Spike (BEC0197-MS1)

Source: 2102366-03

Prepared & Analyzed: 03/10/21

Chromium, Hexavalent 23.5 0.30 mg/kg wet 25.0 ND 94.0 75-125

Matrix Spike Dup (BEC0197-MSD1)

Source: 2102366-03

Prepared & Analyzed: 03/10/21

Chromium, Hexavalent 23.4 0.30 mg/kg wet 25.0 ND 93.8 75-125 0.213 20

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

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

Summit Scientific

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

Batch BEC0156 - General Preparation

Blank (BEC0156-BLK1)

Prepared: 03/08/21 Analyzed: 03/09/21

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BEC0156-BS1)

Prepared: 03/08/21 Analyzed: 03/09/21

Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	5.65	0.0500	"	5.00		113	70-130			
Sodium	5.32	0.0500	"	5.00		106	70-130			

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BEC0116 - General Preparation

Duplicate (BEC0116-DUP1)

Source: 2103038-01

Prepared & Analyzed: 03/05/21

% Solids	91.6		%		91.5			0.109		20	
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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BEC0185 - General Preparation

Blank (BEC0185-BLK1)

Prepared & Analyzed: 03/09/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEC0185-BS1)

Prepared & Analyzed: 03/09/21

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 90-110

Duplicate (BEC0185-DUP1)

Source: 2103035-01

Prepared & Analyzed: 03/09/21

Specific Conductance (EC) 0.983 0.0100 mmhos/cm 0.996 1.32 20

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 14:32

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

Summit Scientific

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

Batch BEC0186 - General Preparation

LCS (BEC0186-BS1)

Prepared & Analyzed: 03/09/21

pH 9.20 pH Units 9.21 99.9 95-105

Duplicate (BEC0186-DUP1)

Source: 2103035-01

Prepared & Analyzed: 03/09/21

pH 8.58 pH Units 8.58 0.00 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: ACS #7 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 14:32

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