



Incident Investigation and Soil Sampling Report

Dubois Tank Battery Release On June 11, 2021

**NENW, Section 7, T9N R52W
Padroni (7.5 Minute) Quadrangle**

**Padroni West Field
Logan County, Colorado**

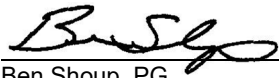
Prepared for:
**Citation Oil and Gas Corporation
14077 Cutten Road
Houston, TX 77069**

Prepared by:
**Absaroka Energy and
Environmental Solutions, LLC.
Buffalo, WY 82834**



CIT.CO.0549.01

August 17th, 2021



Ben Shoup, PG
Principal



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1 INTRODUCTION

Citation Oil & Gas Corp. (Citation) contracted Absaroka Energy and Environmental Solutions, LLC (AE2), to conduct site investigations, release delineation, and to prepare this Incident Investigation Report for the Dubois Tank Battery Release (June 11, 2021). The release initiated when a check valve on the injection pump failed, allowing fluids to bypass the pump and overtop the storage tanks on location. Citation initially estimated 158 barrels (bbl) of produced water and ten (10) bbl of oil (Table 1) were released. Most of the released fluids were captured within the secondary containment area. Four (4) bbl of produced water and four (4) bbl of oil migrated outside of containment and flowed approximately 115 feet south. An approximate total of 5,545 square feet (0.127 acres) of surface area was affected. The affected lands are privately owned by Norma Dickinson.

The following report outlines the details of the events subsequent to the incident, as well as site background, hydrogeology, surface and groundwater receptors, and remedial activities. Maps and other reference materials are also included.

Table 1: Spill Volume Estimates.

<i>Volume Released to Environment</i>	<i>Initial Volume Recovered</i>	<i>Initial Volume Unrecovered</i>
10 bbl crude oil (4 bbl outside of containment)	10 bbl crude oil	0 bbl crude oil
158 bbl produced water (4 bbl outside of containment)	158 bbl produced water	0 bbl produced water
0 mcf gas	0 mcf gas	0 mcf gas

1.1 Site Description and Location

The Dubois Tank Battery Release (Release) occurred in Citation’s Padroni West Field, located approximately 10 miles north of Sterling, within Logan County, Colorado (**Appendix A**). A check valve on the injection pump failed, allowing fluids to bypass the pump and overtop the storage tanks on location, resulting in a release. Fluids released from the leak then filled and overtopped containment, affecting surface lands in the NENW of Section 7, T9N R52W (see **Appendix B**). Four (4) bbl of produced water and four (4) bbl of oil migrated outside of containment and flowed approximately 115 feet south. An approximate total of 5,545 square feet (0.127 acres) of surface area was affected (Site).

The release location may be accessed by turning north onto County Road 113 from Colorado Highway 138, approximately 8.5 miles northeast of Sterling, Colorado. Travel approximately 2.8 miles north to County Road 48 and turn west. Continue approximately 5.6 miles west before arriving at the Dubois Tank Battery.

Dubois Tank Battery Release

1.2 Contact Information

Pertinent contact information regarding the release and follow-up reporting are shown in Table 2.

Table 2: Contact Information.

<i>Contact</i>	<i>Person</i>	<i>Address</i>	<i>Phone No.</i>
Responsible Party	Citation Oil & Gas Corp.	14077 Cutten Road Houston, TX 77069	281-891-1000
Citation Director of EHS & Regulatory	Bob Redweik	14077 Cutten Road Houston, TX 77069	281-891-1550
Citation – Padroni West Field Foreman	Geoffrey Wolf	14077 Cutten Road Houston, TX 77069	719-340-4637
Citation Environmental Contractor	Ben Shoup Absaroka Energy and Environmental Solutions, LLC	112 High Street Buffalo, WY 82834	855-684-5891
Landowner	Norma Dickinson	22808 County Road 37 Sterling, CO 80751	970-580-1547

1.3 Historic Land Use

The Site is located in a rural setting within the Padroni West Field, Logan County, Colorado. Historic land use for the area includes agriculture and grazing of pastureland by livestock. In addition, the land is currently and has historically been used for oil/gas exploration and production operations.

1.4 Background – Spill and Initial Response

The following summary table (3) outlines the details of the events that immediately followed the release, including descriptions of the affected area. A map illustrating the extent of the affected area is provided in **Appendix B**. This summary is based on best available data as provided by Citation personnel, and information documented by the AE2 onsite responders.

Table 3: Incident chronology.

<i>Date - Time</i>	<i>Event</i>
6/11/21 – 8:45	Fluid release discovered. All wells associated with the Dubois Tank Battery shut in.
6/11/21 – 9:00	Geoffrey Wolf (Citation -Forman) notifies Norma Dickinson (Landowner)
6/11/21 – 9:00	Geoffrey Wolf (Citation -Forman) notifies Bob Redweik (Citation – Director EHS & Regulatory).
6/11/21 – 10:00	Vac truck arrives on location to begin recovery of released fluids.
6/11/21 – 10:45	Geoffrey Wolf (Citation -Forman) notifies Robert Young (COGCC)
6/11/21 – 13:40	Geoffrey Wolf (Citation -Forman) notifies Kim Schure (COGCC)
6/14/21	AE2 notifies the Logan County Emergency Manager – Jerry Casebolt

Dubois Tank Battery Release

<i>Date - Time</i>	<i>Event</i>
6/16/21	AE2 notifies the NE Region CPW Liaison - Brandon Marette
6/14/21-6/18/21	Crews excavated all visually impacted soil and cleaned tank exteriors.
6/23/21	AE2 arrives onsite, completes delineation of affected spill area, and collect soil samples.

2 HYDROGEOLOGICAL AND BIOLOGICAL CONDITIONS

2.1 Geology

Site geology is comprised of the Eocene - Oligocene White River Group, an unconformity bound sequence of terrestrial sourced volcanoclastic sedimentary rock, composed primarily of tuffaceous mudstone and siltstone. The group includes additional sequences, typically minor fluvial channel sandstones, freshwater lacustrine limestone, and tuff beds (Larson and Evanoff, 1998). The formation thickens to the north of the project area (USGS, 1979).

2.2 Soil

Surface soil textures across the Site were observed to vary from clay loam to sandy loam. Soil characteristics observed at the Site were compared to the Natural Resources Conservation Service's Web Soil Survey to determine soil type. Soils within the Site consist of one primary soil series, Norka-Ulysses loams. These soils occur on 1 – 3% hillslopes at elevations between 3,600 and 4,100 feet with mean annual precipitation of 15 to 19 inches, mean annual air temperature of 46 to 50 degrees Fahrenheit, and a frost-free period of 120 to 150 days. Norka-Ulysses loams occur along valley sides and hills. These soils are loamy and well drained. Typical water table depth is over 80 inches (NRCS 2021).

2.3 Hydrogeology

2.3.1 Groundwater

Depth to groundwater in bearing zones is estimated to be greater than 200 feet below ground surface (BGS). A water well record search identified six water wells located within 0.5 miles of the Site (Table 4) (CO DWR, 2021). Water well permit number 128396, located 746 feet northeast of the release, reported a well depth of 320 feet BGS with a static water level of 60 feet BGS. Water well permit number 31236 is located 1,141 feet north of the release and reported a well depth of 250 feet BGS with a static water level of 40 feet BGS. The other four (4) water wells identified in the records search are much closer to a nearby irrigation ditch and are not representative of conditions at the Site.

Dubois Tank Battery Release

Table 4: Water wells within 0.5-mile radius of affected spill area. Taken from CO DWR (2021).

Well Permit Number	Date Completed	Applicant	Proximity To Release (FT)	Static Water Depth (FT)	Well Depth (FT)
128396	4/6/1983	Stanley Fluharty	746	60	320
31236	7/6/1967	W E & Elizabeth Dickinson	1,141	40	250
24320	June, 1965	A E Sindt	2,068	9	245
281467	7/27/2011	Norma K Dickinson	2,271	9	32
84421	6/26/1976	W E Dickinson	2,283	16.5	41
281223	1940's	Norma K Dickinson	2,322	-	240

2.3.2 Surface Water

The closest surface water is the North Sterling Outlet Canal, located approximately 1,050 feet south of the release (**Appendix A**). As indicated by field observations, no released fluids migrated into the North Sterling Outlet Canal or any surface waters.

2.4 CPW High Priority Habitat Review

The Site is located within CPW designated High Priority Habitat – Mule Deer Severe Winter Range. Brandon Marette (CPW Liaison, NE Region) was notified of the release on 6/16/21.

3 SOIL SAMPLING

3.1 Methods

3.1.1 Sampling Methods

AE2 collected soil samples to assist in delineating the areas affected by the release and provide data pertaining to the extent of the fluid's impacts. Soil samples were collected using methods that are commensurate with industry-standard practices and regulatory standards.

Prior to each sampling location, a stainless-steel trowel was decontaminated using Alconox® solution, distilled water, and paper towels. The trowel was used to place samples into laboratory provided containers and the samples were then immediately placed on ice. The coordinates of the sample locations were recorded. Photos were taken of each sampling location (**Appendix F**). A chain of custody was then completed with the sample ID, date and time of collection, requested analyses, and pertinent account information. No preservatives were used for the samples. The stainless-steel trowel was decontaminated using Alconox® solution, distilled water, and paper towels. Nitrile gloves were changed after the collection of each sample.

Sampling personnel donned modified Level D personal protective equipment (PPE) consisting of flame resistant clothing, nitrile gloves, safety glasses, steel-toe boots, hard hat, and a 4-gas meter.

3.1.2 Sampling Equipment

Sampling equipment included the following:

- Gallon Ziploc® bags
- Laboratory-provided sample containers
- Permanent marker
- Stainless-steel trowel
- Alconox® solution (in spray bottle)
- Distilled water (in spray bottle)
- Paper towels
- Camera
- GPS unit
- Laboratory chain of custody and shipping information

3.1.3 Sample Analysis

Following sample collection, a cooler containing the samples and the chain of custody was delivered by AE2 personnel to Summit Scientific, Inc. for analysis (see **Appendix E** – Laboratory Analytical Report) at the following location:

Summit Scientific
4653 Table Mountain Drive
Golden, CO 80403

Samples were analyzed for all constituents listed in COGCC Table 915-1.

3.2 Release Delineation and Soil Sampling

The surficial extent of the spill was visually delineated as evidenced by the remediation activities already undertaken by Citation. A GPS receiver was used to record the boundaries of the spill-affected area (see **Appendix B**).

A total of ten (10) soil samples were collected to identify and delineate soil impacts from the Release and compare them to background soil conditions (see **Appendices B** and **C**). All soil samples were collected on June 23, 2021.

3.2.1 Spill-Affected Soil Samples

Soil samples were collected from within the spill-affected area to identify the full extent of soil impacts. A total of eight (8) soil samples were collected within the affected area for this purpose. Soil samples CIT-DB-SS-02 and CIT-DB-SS-04 were collected and held pending the results of the other samples.

3.2.2 Background Reference Samples

Two (2) background soil samples were collected for baseline reference and comparison of analyzed parameters to the other soil samples (excluding TPH). Both samples were collected from non-impacted soils adjacent to the Release site (see **Appendix B**). CIT-DB-SS-BG-02 was held pending the results of the other samples.

4 SUMMARY OF RESULTS AND RECOMMENDATIONS

The following section provides the results of the laboratory analyses and any additional recommended actions.

4.1 Soil Sample Analytical Results

Six (6) soil samples were analyzed for full COGCC Table 915-1 constituents. **Appendix D** summarizes all soil sample results that were reported in the analytical report (**Appendix E**).

The following conclusions can be made based on the soil sample results:

- Samples CIT-DB-SS-03, CIT-DB-SS-05, CIT-DB-SS-07, and CIT-DB-SS-08 are above maximum residential soil screening level (RSSL) for total petroleum hydrocarbons (TPH). The highest TPH level was CIT-DB-SS-05 at 1,190 mg/kg.
- Samples CIT-DB-SS-01, CIT-DB-SS-03, CIT-DB-SS-05, and CIT-DB-SS-07 are above the maximum RSSL for pH. The highest pH result was CIT-DB-SS-07 at 8.50.
- All samples are above the maximum RSSL for arsenic, ranging from 1.79-2.98 mg/kg.
- CIT-DB-SS-01 is above the maximum RSSL for boron – hot water soluble at 3.23 mg/kg.

4.2 Recommendations

The results of CIT-DB-SS-BG-01 indicate that background soil concentrations of arsenic are above the maximum RSSL values listed in COGCC Table 915-1. The background pH value of 8.21 is below the maximum RSSL value of 8.30 but within 4% of the highest pH result from the affected area, 8.50. AE2 recommends that the arsenic and pH exceedances identified in the spill-affected soil samples be

Dubois Tank Battery Release

disregarded due their close comparability to background concentrations and consistency with expected and known naturally occurring concentrations.

AE2 recommends that the elevated TPH and boron – hot water soluble sample locations be allowed to attenuate *in-situ*. Soil additives such as fertilizer or organic matter may be added to catalyse microbial and chemical remedial activity. Samples CIT-DB-SS-03, CIT-DB-SS-05, CIT-DB-SS-07, and CIT-DB-SS-08 will be resampled for TPH and sample CIT-DB-SS-01 will be resampled for boron – hot water soluble at approximately 180 days of natural attenuation. If approved, this release will be transferred to a Form 27 remediation project. Updates of remediation activity via Form 27 will be provided to the COGCC quarterly.

References



- CO DWR, 2021. Water Well Permit Search. Colorado Department of Water Resources. <https://dwr.state.co.us/Tools/WellPermits>. Retrieved August 2021.
- Larson, E., and Evanoff, E., 1998, Taphostratigraphy and source of the tuffs of the White River Sequence, Geologic Society of America, Special Paper 325, pp 1-14.
- NRCS, 2021. Custom Soil Resource Report for Logan County, Colorado. Version 8, Web Soil Survey, Natural Resources Conservation Service, U.S. Dept. of Agriculture, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Retrieved August 2021.
- USGS, 1979. Geologic Map of Colorado: U.S. Geological Survey Special Geologic Map, scale 1:500,000, by Tweto and Ogden, <https://mrdata.usgs.gov/geology/state/sgmc2-unit.php?unit=COKpu;0>. Retrieved June 2021.

APPENDICES

Appendix A – Project Location Map



Map Key

-  Township Boundary
-  Section Boundary



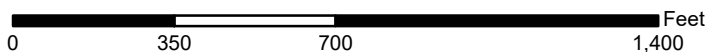
112 High Street
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www.absarokasolutions.com

CIT.CO.0549.01

**Dubois Tank Battery
Project Location**

Logan County, State of Colorado



Coordinate System: WGS 1984 UTM Zone 13N








Date: 8/17/2021

Scale: 1:5,000

N

Appendix B – Delineation and Sampling Map

Map Key

-  Soil Grab Samples
-  Soil Background Sample
-  Surface Spill Area
-  Township Boundary
-  Section Boundary



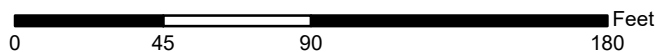
112 High Street
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**Dubois Tank Battery
Soil Sample Locations**

Logan County, State of Colorado



Coordinate System: WGS 1984 UTM Zone 13N



Date: 8/13/2021

Scale: 1:700

Appendix C – Soil Sample Summary

Soil Sampling Summary Table

**Citation Oil & Gas Corp.
Dubois Tank Battery Soil Sampling
Logan County, Colorado**

Sample ID	Date Sampled	Time Sampled	Sample Interval (Inches)	Latitude	Longitude	EC Screening (μS/cm)	PID Screening (PPM VOCs)	Soil Texture
CIT_DB_BG_01	6/23/2021	10:30	0-6	40.774431	-103.220190	0.30	0.0	Sandy Loam
CIT_DB_BG_02	6/23/2021	10:35	0-6	40.774465	-103.2201330	0.24	0.1	Sandy Clay Loam
CIT_DB_SS_01	6/23/2021	10:45	12-18	40.774531	-103.221002	1.21	0.2	Sandy Clay Loam
CIT_DB_SS_02	6/26/2021	10:50	0-6	40.774513	-103.221039	0.51	0.2	Sandy Clay Loam
CIT_DB_SS_03	6/23/2021	11:00	0-6	40.774450	-103.220987	0.18	11.6	Sandy Clay Loam
CIT_DB_SS_04	6/23/2021	11:10	0-6	40.774321	-103.221056	0.08	2.7	Sandy Clay Loam
CIT_DB_SS_05	6/23/2021	11:20	0-6	40.774466	-103.220926	0.12	11.4	Sandy Clay Loam
CIT_DB_SS_06	6/23/2021	11:25	0-6	40.774611	-103.220899	0.67	14.1	Sandy Clay Loam
CIT_DB_SS_07	6/23/2021	11:30	0-6	40.774296	-103.220956	0.43	2.5	Sandy Clay Loam
CIT_DB_SS_08	6/23/2021	13:20	0-6	40.774728	-103.221171	0.79	0.9	Sandy Clay Loam

Appendix D – Soil Sample Analytical Data Summary

Soil Analytical Data Summary Table

**Citation Oil & Gas Corp.
Dubois Tank Battery Soil Sampling
Logan County, Colorado**

Sample ID	Sample Interval	Date Sampled	Concentration (mg/kg)										Unitless			
			Benzene	Toluene	Ethylbenzene	Xylenes (Total)	1,3,5 Trimethylbenzene	1,2,4 Trimethylbenzene	Naphthalene	GRO	DRO	ORO	TPH	EC (mmhos/cm)	SAR	pH
COGCC Table 915-1 Concentration Levels (RSSL)			1.2	490	5.8	58	27	30	2	NA	NA	NA	500	<4	<6	6-8.3
Soil Samples																
CIT-DB-SS-BG-01	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.62	13.80	8.21
CIT-DB-SS-01	12-18"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.154	1.30	8.33
CIT-DB-SS-03	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	710	290	1000	1.50	5.32	8.41
CIT-DB-SS-05	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	840	350	1190	1.19	4.30	8.41
CIT-DB-SS-07	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	510	220	730	0.645	3.48	8.50
CIT-DB-SS-08	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	470	210	680	3.47	3.79	6.79

Sample ID	Sample Interval	Date Sampled	PAH Concentration (mg/kg)												1-Methylnaphthalene	2-Methylnaphthalene
			Acenaphthene	Anthracene	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b)fluoranthene	Benzo (k)fluoranthene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Pyrene		
COGCC Table 915-1 Concentration Levels (RSSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Soil Samples																
CIT-DB-SS-BG-01	0-6"	6/23/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIT-DB-SS-01	12-18"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIT-DB-SS-03	0-6"	6/23/2021	0.0160	ND	0.0239	ND	ND	ND	0.0263	ND	ND	0.0104	ND	ND	0.0432	0.0210
CIT-DB-SS-05	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIT-DB-SS-07	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIT-DB-SS-08	0-6"	6/23/2021	ND	ND	ND	ND	ND	ND	0.0112	ND	ND	ND	ND	0.0203	ND	ND

Sample ID	Sample Interval	Date Sampled	Total Metals mg/kg										mg/L
			Arsenic	Barium	Cadmium	Copper	Lead	Nickel	Selenium	Silver	Zinc	Chromium (Hexavalent)	Boron - Hot Water Soluble
COGCC Table 915-1 Concentration Levels (RSSL)			0.68	15000	71.00	3100	400	1500	390	390	23000	0.3	2
Soil Samples													
CIT-DB-SS-BG-01	0-6"	6/23/2021	1.94	166	ND	8.14	9.68	6.39	0.691	0.0360	34.8	ND	1.26
CIT-DB-SS-01	12-18"	6/23/2021	2.98	162	ND	8.10	9.67	8.00	1.17	0.0509	29.7	ND	3.23
CIT-DB-SS-03	0-6"	6/23/2021	2.62	165	ND	7.40	8.39	6.73	0.674	0.0360	27.1	ND	0.767
CIT-DB-SS-05	0-6"	6/23/2021	2.62	166	ND	7.34	9.16	6.63	0.824	0.0351	28.8	ND	0.816
CIT-DB-SS-07	0-6"	6/23/2021	2.88	199	ND	8.88	9.62	8.52	0.899	0.0441	35.0	ND	0.706
CIT-DB-SS-08	0-6"	6/23/2021	1.79	132	ND	9.15	4.88	4.55	0.802	ND	50.4	ND	0.931

mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
ND - Analytical result is not detected above the reporting limit
COGCC - Colorado Oil and Gas Conservation Commission

GRO - Gasoline Range Organics
DRO - Diesel Range Organics (C10-C28)
ORO - Oil Range Organics (C28-C36)
TPH - Total Petroleum Hydrocarbons (Combined GRO/DRO/ORO)

SAR - Sodium Adsorption Ratio
NA - Not Analyzed
BGS - Below Ground Surface
EC - Electrical Conductivity

RSSL = Residential Soil Screening Level

Appendix E – Soil Sample Analytical Data

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 02, 2021

Max Moran

Absaroka Solutions

112 High Street

Buffalo, WY 82834

RE: Dubois Battery Spill Support

Work Order #2106448

Enclosed are the results of analyses for samples received by Summit Scientific on 06/24/21 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CIT_DB_SS_BG_01	2106448-01	Soil	06/23/21 10:30	06/24/21 16:15
CIT_DB_SS_01	2106448-03	Soil	06/23/21 10:45	06/24/21 16:15
CIT_DB_SS_03	2106448-05	Soil	06/23/21 11:00	06/24/21 16:15
CIT_DB_SS_05	2106448-07	Soil	06/23/21 11:20	06/24/21 16:15
CIT_DB_SS_07	2106448-09	Soil	06/23/21 11:30	06/24/21 16:15
CIT_DB_SS_08	2106448-10	Soil	06/23/21 13:20	06/24/21 16:15

Summit Scientific

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

Summit Scientific

S₂

2106448

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

Client: Absaroka Energy and Environmental Solutions

Project Manager: Max Moran

Address: 112 High ST.

E-Mail: max.moran@absarokasolutions.com

City/State/Zip: Buffalo, WY, 82834



Phone: 720-352-5326

Project Name: Dubois Battery Spill Support

Sampler Name: Tyler Scherden

Project Number: CIT.CO.0549.01

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Full 915 Suite	EC	SAR	pH	Boron*	Metals		
1	CIT_DB_SS_BG_01	6/23/21	1030	3			X							X	X	X	X	X		
2	CIT_DB_SS_BG_02	6/23/21	1035	3			X													HOLD
3	CIT_DB_SS_01	6/23/21	1045	3			X						X							
4	CIT_DB_SS_02	6/23/21	1050	3			X						X							
5	CIT_DB_SS_03	6/23/21	1100	3			X						X							
6	CIT_DB_SS_04	6/23/21	1110	3			X													HOLD
7	CIT_DB_SS_05	6/23/21	1120	3			X						X							
8	CIT_DB_SS_06	6/23/21	1125	3			X													HOLD
9	CIT_DB_SS_07	6/23/21	1130	3			X						X							
10	CIT_DB_SS_08	6/23/21	1320	3			X						X							

Relinquished by: 	Date/Time: 6/23/21 1600	Received by: 	Date/Time: 6/24/21 1615	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard _____ 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>5</u> Samples Intact: <u>Yes</u> No	Notes: *HWS - Hot Water Soluble
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 210644P

Client: Absaroka Client Project ID: Dubois Battery Spill Support

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

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

Temp (°C)	<u>5</u>
-----------	----------

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

CB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

6/24/21
Date/Time



Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_BG_01
2106448-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.26	0.0100	mg/L	1	BEF0605	06/30/21	07/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.94	0.213	mg/kg dry	1	BEF0608	06/30/21	07/01/21	EPA 6020B	
Barium	166	0.426	"	"	"	"	"	"	
Cadmium	ND	0.213	"	"	"	"	"	"	
Copper	8.14	0.426	"	"	"	"	"	"	
Lead	9.68	0.213	"	"	"	"	"	"	
Nickel	6.39	0.426	"	"	"	"	"	"	
Selenium	0.691	0.277	"	"	"	"	"	"	
Silver	0.0360	0.0213	"	"	"	"	"	"	
Zinc	34.8	0.426	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

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

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	103	0.0533	mg/L dry	1	BEF0580	06/29/21	07/01/21	EPA 6020B	
Magnesium	19.7	0.0533	"	"	"	"	"	"	
Sodium	584	0.0533	"	"	"	"	"	"	

Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support
Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_BG_01
2106448-01 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.8	0.00100	units	1	BEG0047	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.8		%	1	BEF0604	06/30/21	07/01/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.62	0.0100	mmhos/cm	1	BEF0603	06/30/21	06/30/21	EPA 120.1	

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

Date Sampled: **06/23/21 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.21		pH Units	1	BEF0602	06/30/21	06/30/21	EPA 9045D	

Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support
Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_01
2106448-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0542	06/25/21	06/25/21	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: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		143 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0532	06/25/21	06/27/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_01
2106448-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0143	07/08/21	07/13/21	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: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	3.23	0.0100	mg/L	1	BEF0605	06/30/21	07/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_01
2106448-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.98	0.225	mg/kg dry	1	BEF0608	06/30/21	07/01/21	EPA 6020B	
Barium	162	0.449	"	"	"	"	"	"	
Cadmium	ND	0.225	"	"	"	"	"	"	
Copper	8.10	0.449	"	"	"	"	"	"	
Lead	9.67	0.225	"	"	"	"	"	"	
Nickel	8.00	0.449	"	"	"	"	"	"	
Selenium	1.17	0.292	"	"	"	"	"	"	
Silver	0.0509	0.0225	"	"	"	"	"	"	
Zinc	29.7	0.449	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

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

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14.7	0.0562	mg/L dry	1	BEF0580	06/29/21	07/01/21	EPA 6020B	
Magnesium	5.83	0.0562	"	"	"	"	"	"	
Sodium	23.2	0.0562	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.30	0.00100	units	1	BEG0047	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Absaroka Solutions
 112 High Street
 Buffalo WY, 82834

Project: Dubois Battery Spill Support
 Project Number: CIT.CO.0549.01
 Project Manager: Max Moran

Reported:
 08/02/21 11:20

CIT_DB_SS_01
2106448-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	89.0	%	1	BEF0604	06/30/21	07/01/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.154	0.0100	mmhos/cm	1	BEF0603	06/30/21	06/30/21	EPA 120.1	

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

Date Sampled: **06/23/21 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.33		pH Units	1	BEF0602	06/30/21	06/30/21	EPA 9045D	

Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_03
2106448-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0542	06/25/21	06/25/21	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: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		118 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	710	50	mg/kg	1	BEF0532	06/25/21	06/27/21	EPA 8015M	
C28-C36 (ORO)	290	50	"	"	"	"	"	"	

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_03
2106448-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0160	0.00500	mg/kg	1	BEG0143	07/08/21	07/14/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0239	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0263	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0104	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0432	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0210	0.00500	"	"	"	"	"	"	

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		36.5 %	40-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10		20.5 %	40-150		"	"	"	"	S-02

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.767	0.0100	mg/L	1	BEF0605	06/30/21	07/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_03
2106448-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.62	0.233	mg/kg dry	1	BEF0608	06/30/21	07/01/21	EPA 6020B	
Barium	165	0.467	"	"	"	"	"	"	
Cadmium	ND	0.233	"	"	"	"	"	"	
Copper	7.40	0.467	"	"	"	"	"	"	
Lead	8.39	0.233	"	"	"	"	"	"	
Nickel	6.73	0.467	"	"	"	"	"	"	
Selenium	0.674	0.303	"	"	"	"	"	"	
Silver	0.0360	0.0233	"	"	"	"	"	"	
Zinc	27.1	0.467	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

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

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	92.9	0.0583	mg/L dry	1	BEF0580	06/29/21	07/01/21	EPA 6020B	
Magnesium	18.0	0.0583	"	"	"	"	"	"	
Sodium	214	0.0583	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.32	0.00100	units	1	BEG0047	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Absaroka Solutions
 112 High Street
 Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
 08/02/21 11:20

CIT_DB_SS_03
2106448-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.7	%	1	BEF0604	06/30/21	07/01/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.50	0.0100	mmhos/cm	1	BEF0603	06/30/21	06/30/21	EPA 120.1	

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

Date Sampled: **06/23/21 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.41		pH Units	1	BEF0602	06/30/21	06/30/21	EPA 9045D	

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_05
2106448-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0542	06/25/21	06/25/21	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: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		125 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	840	50	mg/kg	1	BEF0532	06/25/21	06/27/21	EPA 8015M	
C28-C36 (ORO)	350	50	"	"	"	"	"	"	

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_05
2106448-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0143	07/08/21	07/14/21	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: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		23.9 %	40-150		"	"	"	"	S-02

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.816	0.0100	mg/L	1	BEF0605	06/30/21	07/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
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CIT_DB_SS_05
2106448-07 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.62	0.220	mg/kg dry	1	BEF0608	06/30/21	07/01/21	EPA 6020B
Barium	166	0.440	"	"	"	"	"	"
Cadmium	ND	0.220	"	"	"	"	"	"
Copper	7.34	0.440	"	"	"	"	"	"
Lead	9.16	0.220	"	"	"	"	"	"
Nickel	6.63	0.440	"	"	"	"	"	"
Selenium	0.824	0.286	"	"	"	"	"	"
Silver	0.0351	0.0220	"	"	"	"	"	"
Zinc	28.8	0.440	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

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

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	67.4	0.0550	mg/L dry	1	BEF0580	06/29/21	07/01/21	EPA 6020B	
Magnesium	13.6	0.0550	"	"	"	"	"	"	
Sodium	148	0.0550	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.30	0.00100	units	1	BEG0047	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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CIT_DB_SS_05
2106448-07 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	90.9	%	1	BEF0604	06/30/21	07/01/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.19	0.0100	mmhos/cm	1	BEF0603	06/30/21	06/30/21	EPA 120.1	

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

Date Sampled: **06/23/21 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.41		pH Units	1	BEF0602	06/30/21	06/30/21	EPA 9045D	

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Project: Dubois Battery Spill Support
Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_07
2106448-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0542	06/25/21	06/25/21	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: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.7 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	510	50	mg/kg	1	BEF0532	06/25/21	06/27/21	EPA 8015M	
C28-C36 (ORO)	220	50	"	"	"	"	"	"	

Date Sampled: **06/23/21 11:30**

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

PAH by EPA Method 8270D SIM

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Project Manager: Max Moran

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CIT_DB_SS_07
2106448-09 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0143	07/08/21	07/14/21	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: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		33.5 %	40-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10		18.9 %	40-150		"	"	"	"	S-02

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.706	0.0100	mg/L	1	BEF0605	06/30/21	07/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_07
2106448-09 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.88	0.240	mg/kg dry	1	BEF0608	06/30/21	07/01/21	EPA 6020B
Barium	199	0.481	"	"	"	"	"	"
Cadmium	ND	0.240	"	"	"	"	"	"
Copper	8.88	0.481	"	"	"	"	"	"
Lead	9.62	0.240	"	"	"	"	"	"
Nickel	8.52	0.481	"	"	"	"	"	"
Selenium	0.899	0.313	"	"	"	"	"	"
Silver	0.0441	0.0240	"	"	"	"	"	"
Zinc	35.0	0.481	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

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

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	48.0	0.0601	mg/L dry	1	BEF0580	06/29/21	07/01/21	EPA 6020B	
Magnesium	10.3	0.0601	"	"	"	"	"	"	
Sodium	102	0.0601	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.48	0.00100	units	1	BEG0047	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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CIT_DB_SS_07
2106448-09 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.2	%	1	BEF0604	06/30/21	07/01/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.645	0.0100	mmhos/cm	1	BEF0603	06/30/21	06/30/21	EPA 120.1	

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

Date Sampled: **06/23/21 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.50		pH Units	1	BEF0602	06/30/21	06/30/21	EPA 9045D	

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Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_08
2106448-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEF0542	06/25/21	06/25/21	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: **06/23/21 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		114 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.0 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	470	50		mg/kg	1	BEF0532	06/25/21	06/27/21	EPA 8015M	
C28-C36 (ORO)	210	50		"	"	"	"	"	"	

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		101 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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CIT_DB_SS_08
2106448-10 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0143	07/08/21	07/14/21	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	0.0112	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	0.0203	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	41.1 %	40-150			"	"	"	"	
Surrogate: Fluoranthene-d10	33.4 %	40-150			"	"	"	"	S-02

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.931	0.0100	mg/L	1	BEF0605	06/30/21	07/01/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_08
2106448-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.79	0.211	mg/kg dry	1	BEF0608	06/30/21	07/01/21	EPA 6020B	
Barium	132	0.422	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
Copper	9.15	0.422	"	"	"	"	"	"	
Lead	4.88	0.211	"	"	"	"	"	"	
Nickel	4.55	0.422	"	"	"	"	"	"	
Selenium	0.802	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
Zinc	50.4	0.422	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

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

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	339	0.0527	mg/L dry	1	BEF0580	06/29/21	07/01/21	EPA 6020B	
Magnesium	42.1	0.0527	"	"	"	"	"	"	
Sodium	278	0.0527	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.79	0.00100	units	1	BEG0047	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support
Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

CIT_DB_SS_08
2106448-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.9		%	1	BEF0604	06/30/21	07/01/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.47	0.0100	mmhos/cm	1	BEF0603	06/30/21	06/30/21	EPA 120.1	

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

Date Sampled: **06/23/21 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.79		pH Units	1	BEF0602	06/30/21	06/30/21	EPA 9045D	

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEF0542 - EPA 5030 Soil MS

Blank (BEF0542-BLK1)

Prepared & Analyzed: 06/25/21

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>0.0339</i>		<i>"</i>	<i>0.0400</i>		<i>84.8</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0494</i>		<i>"</i>	<i>0.0400</i>		<i>124</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0330</i>		<i>"</i>	<i>0.0400</i>		<i>82.5</i>		<i>21-167</i>		

LCS (BEF0542-BS1)

Prepared & Analyzed: 06/25/21

Benzene	0.123	0.0020	mg/kg	0.150		82.0		70-130		
Toluene	0.128	0.0050	"	0.150		85.0		70-130		
Ethylbenzene	0.134	0.0050	"	0.150		89.3		70-130		
m,p-Xylene	0.265	0.010	"	0.300		88.2		70-130		
o-Xylene	0.131	0.0050	"	0.150		87.4		70-130		
1,2,4-Trimethylbenzene	0.146	0.0050	"	0.150		97.1		70-130		
1,3,5-Trimethylbenzene	0.151	0.0050	"	0.150		101		70-130		
Naphthalene	0.150	0.0038	"	0.150		100		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0378</i>		<i>"</i>	<i>0.0400</i>		<i>94.4</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0368</i>		<i>"</i>	<i>0.0400</i>		<i>92.0</i>		<i>21-167</i>		

Matrix Spike (BEF0542-MS1)

Source: 2106425-01

Prepared & Analyzed: 06/25/21

Benzene	0.122	0.0020	mg/kg	0.150	ND	81.4		70-130		
Toluene	0.111	0.0050	"	0.150	ND	74.2		70-130		
Ethylbenzene	0.118	0.0050	"	0.150	ND	78.5		70-130		
m,p-Xylene	0.224	0.010	"	0.300	ND	74.6		70-130		
o-Xylene	0.111	0.0050	"	0.150	ND	73.8		70-130		
1,2,4-Trimethylbenzene	0.120	0.0050	"	0.150	ND	79.9		70-130		
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.150	ND	86.9		70-130		
Naphthalene	0.132	0.0038	"	0.150	ND	88.3		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0437</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0350</i>		<i>"</i>	<i>0.0400</i>		<i>87.4</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0369</i>		<i>"</i>	<i>0.0400</i>		<i>92.3</i>		<i>21-167</i>		

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEF0542 - EPA 5030 Soil MS

Matrix Spike Dup (BEF0542-MSD1)	Source: 2106425-01			Prepared & Analyzed: 06/25/21						
Benzene	0.123	0.0020	mg/kg	0.150	ND	81.8	70-130	0.564	30	
Toluene	0.124	0.0050	"	0.150	ND	82.5	70-130	10.7	30	
Ethylbenzene	0.130	0.0050	"	0.150	ND	86.4	70-130	9.48	30	
m,p-Xylene	0.254	0.010	"	0.300	ND	84.6	70-130	12.6	30	
o-Xylene	0.126	0.0050	"	0.150	ND	84.0	70-130	12.9	30	
1,2,4-Trimethylbenzene	0.132	0.0050	"	0.150	ND	88.2	70-130	9.92	30	
1,3,5-Trimethylbenzene	0.138	0.0050	"	0.150	ND	92.1	70-130	5.77	30	
Naphthalene	0.152	0.0038	"	0.150	ND	101	70-130	13.5	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0374</i>		<i>"</i>	<i>0.0400</i>		<i>93.5</i>	<i>21-167</i>			

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112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

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

Batch BEF0532 - EPA 3550A

Blank (BEF0532-BLK1)

Prepared: 06/25/21 Analyzed: 06/27/21

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

LCS (BEF0532-BS1)

Prepared: 06/25/21 Analyzed: 06/27/21

C10-C28 (DRO)	504	50	mg/kg	500	101	70-130				
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Matrix Spike (BEF0532-MS1)

Source: 2106412-01

Prepared: 06/25/21 Analyzed: 06/27/21

C10-C28 (DRO)	474	50	mg/kg	500	14.6	91.9	70-130			
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Matrix Spike Dup (BEF0532-MSD1)

Source: 2106412-01

Prepared: 06/25/21 Analyzed: 06/27/21

C10-C28 (DRO)	480	50	mg/kg	500	14.6	93.0	70-130	1.22	20	
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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

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 BEG0143 - EPA 5030 Soil MS

Blank (BEG0143-BLK1)

Prepared: 07/08/21 Analyzed: 07/12/21

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>0.0214</i>		"	<i>0.0333</i>		<i>64.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0283</i>		"	<i>0.0333</i>		<i>84.8</i>	<i>40-150</i>			

LCS (BEG0143-BS1)

Prepared: 07/08/21 Analyzed: 07/12/21

Acenaphthene	0.0269	0.00500	mg/kg	0.0333		80.8	31-137			
Anthracene	0.0301	0.00500	"	0.0333		90.4	30-120			
Benzo (a) anthracene	0.0304	0.00500	"	0.0333		91.3	30-120			
Benzo (a) pyrene	0.0294	0.00500	"	0.0333		88.2	30-120			
Benzo (b) fluoranthene	0.0365	0.00500	"	0.0333		110	30-120			
Benzo (k) fluoranthene	0.0325	0.00500	"	0.0333		97.4	30-120			
Chrysene	0.0283	0.00500	"	0.0333		85.0	30-120			
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333		48.5	30-120			
Fluoranthene	0.0278	0.00500	"	0.0333		83.4	30-120			
Fluorene	0.0287	0.00500	"	0.0333		86.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333		45.1	30-120			
Pyrene	0.0276	0.00500	"	0.0333		82.8	35-142			
1-Methylnaphthalene	0.0244	0.00500	"	0.0333		73.2	35-142			
2-Methylnaphthalene	0.0225	0.00500	"	0.0333		67.5	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0245</i>		"	<i>0.0333</i>		<i>73.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0316</i>		"	<i>0.0333</i>		<i>94.9</i>	<i>40-150</i>			

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

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 BEG0143 - EPA 5030 Soil MS

Matrix Spike (BEG0143-MS1)	Source: 2106438-03			Prepared: 07/08/21 Analyzed: 07/12/21					
Acenaphthene	0.0300	0.00500	mg/kg	0.0333	ND	90.1	31-137		
Anthracene	0.0319	0.00500	"	0.0333	ND	95.8	30-120		
Benzo (a) anthracene	0.0312	0.00500	"	0.0333	ND	93.5	30-120		
Benzo (a) pyrene	0.0297	0.00500	"	0.0333	ND	89.1	30-120		
Benzo (b) fluoranthene	0.0364	0.00500	"	0.0333	ND	109	30-120		
Benzo (k) fluoranthene	0.0323	0.00500	"	0.0333	ND	96.9	30-120		
Chrysene	0.0291	0.00500	"	0.0333	ND	87.3	30-120		
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333	ND	50.8	30-120		
Fluoranthene	0.0290	0.00500	"	0.0333	ND	87.0	30-120		
Fluorene	0.0302	0.00500	"	0.0333	ND	90.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0157	0.00500	"	0.0333	ND	47.2	30-120		
Pyrene	0.0284	0.00500	"	0.0333	ND	85.1	35-142		
1-Methylnaphthalene	0.0275	0.00500	"	0.0333	ND	82.5	15-130		
2-Methylnaphthalene	0.0243	0.00500	"	0.0333	ND	72.8	15-130		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0258</i>		"	<i>0.0333</i>		<i>77.5</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0316</i>		"	<i>0.0333</i>		<i>94.7</i>	<i>40-150</i>		

Matrix Spike Dup (BEG0143-MSD1)	Source: 2106438-03			Prepared: 07/08/21 Analyzed: 07/12/21					
Acenaphthene	0.0280	0.00500	mg/kg	0.0333	ND	84.0	31-137	7.00	30
Anthracene	0.0309	0.00500	"	0.0333	ND	92.6	30-120	3.48	30
Benzo (a) anthracene	0.0298	0.00500	"	0.0333	ND	89.5	30-120	4.41	30
Benzo (a) pyrene	0.0286	0.00500	"	0.0333	ND	85.7	30-120	3.83	30
Benzo (b) fluoranthene	0.0353	0.00500	"	0.0333	ND	106	30-120	3.03	30
Benzo (k) fluoranthene	0.0318	0.00500	"	0.0333	ND	95.3	30-120	1.76	30
Chrysene	0.0283	0.00500	"	0.0333	ND	85.0	30-120	2.69	30
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333	ND	47.9	30-120	5.88	30
Fluoranthene	0.0287	0.00500	"	0.0333	ND	86.0	30-120	1.18	30
Fluorene	0.0283	0.00500	"	0.0333	ND	84.8	30-120	6.63	30
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333	ND	45.2	30-120	4.37	30
Pyrene	0.0282	0.00500	"	0.0333	ND	84.5	35-142	0.741	30
1-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130	10.8	50
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130	11.4	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0224</i>		"	<i>0.0333</i>		<i>67.3</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0310</i>		"	<i>0.0333</i>		<i>93.1</i>	<i>40-150</i>		

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

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

Summit Scientific

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

Batch BEF0605 - EPA 3050B

Blank (BEF0605-BLK1)

Prepared: 06/30/21 Analyzed: 07/01/21

Boron ND 0.0100 mg/L

LCS (BEF0605-BS1)

Prepared: 06/30/21 Analyzed: 07/01/21

Boron 5.17 0.0100 mg/L 5.00 103 80-120

Duplicate (BEF0605-DUP1)

Source: 2106380-06

Prepared: 06/30/21 Analyzed: 07/01/21

Boron 0.466 0.0100 mg/L 0.508 8.69 20

Matrix Spike (BEF0605-MS1)

Source: 2106380-06

Prepared: 06/30/21 Analyzed: 07/01/21

Boron 5.63 0.0100 mg/L 5.00 0.508 102 75-125

Matrix Spike Dup (BEF0605-MSD1)

Source: 2106380-06

Prepared: 06/30/21 Analyzed: 07/01/21

Boron 5.70 0.0100 mg/L 5.00 0.508 104 75-125 1.24 25

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEF0608 - EPA 3050B

Blank (BEF0608-BLK1)

Prepared: 06/30/21 Analyzed: 07/01/21

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 (BEF0608-BS1)

Prepared: 06/30/21 Analyzed: 07/01/21

Arsenic	40.2	0.200	mg/kg wet	40.0	101	80-120
Barium	38.4	0.400	"	40.0	96.0	80-120
Cadmium	1.85	0.200	"	2.00	92.7	80-120
Copper	37.4	0.400	"	40.0	93.5	80-120
Lead	18.1	0.200	"	20.0	90.3	80-120
Nickel	37.7	0.400	"	40.0	94.3	80-120
Selenium	3.96	0.260	"	4.00	99.1	80-120
Silver	1.84	0.0200	"	2.00	91.8	80-120
Zinc	40.0	0.400	"	40.0	100	80-120

Duplicate (BEF0608-DUP1)

Source: 2106448-01

Prepared: 06/30/21 Analyzed: 07/01/21

Arsenic	1.91	0.213	mg/kg dry	1.94	1.17	20
Barium	172	0.426	"	166	3.18	20
Cadmium	0.177	0.213	"	0.172	2.99	20
Copper	8.70	0.426	"	8.14	6.67	20
Lead	10.1	0.213	"	9.68	3.83	20
Nickel	6.84	0.426	"	6.39	6.75	20
Selenium	0.744	0.277	"	0.691	7.42	20
Silver	0.0361	0.0213	"	0.0360	0.460	20
Zinc	37.0	0.426	"	34.8	6.26	20

Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BEF0608 - EPA 3050B

Matrix Spike (BEF0608-MS1)

Source: 2106448-01

Prepared: 06/30/21 Analyzed: 07/01/21

Arsenic	41.7	0.213	mg/kg dry	42.6	1.94	93.4	75-125			
Barium	211	0.426	"	42.6	166	106	75-125			
Cadmium	2.07	0.213	"	2.13	0.172	89.3	75-125			
Copper	46.4	0.426	"	42.6	8.14	89.7	75-125			
Lead	26.4	0.213	"	21.3	9.68	78.6	75-125			
Nickel	44.5	0.426	"	42.6	6.39	89.5	75-125			
Selenium	4.77	0.277	"	4.26	0.691	95.7	75-125			
Silver	1.88	0.0213	"	2.13	0.0360	86.6	75-125			
Zinc	79.3	0.426	"	42.6	34.8	104	75-125			

Matrix Spike Dup (BEF0608-MSD1)

Source: 2106448-01

Prepared: 06/30/21 Analyzed: 07/01/21

Arsenic	43.1	0.213	mg/kg dry	42.6	1.94	96.7	75-125	3.31	25
Barium	212	0.426	"	42.6	166	106	75-125	0.0416	25
Cadmium	2.11	0.213	"	2.13	0.172	91.1	75-125	1.89	25
Copper	47.3	0.426	"	42.6	8.14	91.9	75-125	1.99	25
Lead	33.6	0.213	"	21.3	9.68	112	75-125	23.8	25
Nickel	46.5	0.426	"	42.6	6.39	94.0	75-125	4.24	25
Selenium	4.67	0.277	"	4.26	0.691	93.5	75-125	2.00	25
Silver	1.92	0.0213	"	2.13	0.0360	88.4	75-125	1.99	25
Zinc	82.2	0.426	"	42.6	34.8	111	75-125	3.59	25

Summit Scientific

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



Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BEF0552 - 3060A Mod

Blank (BEF0552-BLK1)

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEF0552-BS1)

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent 22.0 0.30 mg/kg wet 25.0 88.0 80-120

Duplicate (BEF0552-DUP1)

Source: 2106414-01

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEF0552-MS1)

Source: 2106414-01

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent 22.1 0.30 mg/kg dry 25.4 ND 87.0 75-125

Matrix Spike Dup (BEF0552-MSD1)

Source: 2106414-01

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent 22.0 0.30 mg/kg dry 25.4 ND 86.4 75-125 0.692 20

Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

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

Summit Scientific

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

Batch BEF0580 - General Preparation

Blank (BEF0580-BLK1)

Prepared: 06/29/21 Analyzed: 07/01/21

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

LCS (BEF0580-BS1)

Prepared: 06/29/21 Analyzed: 07/01/21

Calcium	5.23	0.0500	mg/L wet	5.00	105	70-130				
Magnesium	5.64	0.0500	"	5.00	113	70-130				
Sodium	5.09	0.0500	"	5.00	102	70-130				

Summit Scientific

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Absaroka Solutions
 112 High Street
 Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
 Project Manager: Max Moran

Reported:
 08/02/21 11:20

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 BEF0604 - General Preparation

Duplicate (BEF0604-DUP1)	Source: 2106380-06		Prepared: 06/30/21 Analyzed: 07/01/21		
% Solids	92.7	%	92.9	0.197	20

Summit Scientific

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Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

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 BEF0603 - General Preparation

Blank (BEF0603-BLK1)

Prepared & Analyzed: 06/30/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEF0603-BS1)

Prepared & Analyzed: 06/30/21

Specific Conductance (EC) 0.140 0.0100 mmhos/cm 0.150 93.6 90-110

Duplicate (BEF0603-DUP1)

Source: 2106448-01

Prepared & Analyzed: 06/30/21

Specific Conductance (EC) 3.62 0.0100 mmhos/cm 3.62 0.110 20

Summit Scientific

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



Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01

Project Manager: Max Moran

Reported:
08/02/21 11:20

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

Summit Scientific

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

Batch BEF0602 - General Preparation

LCS (BEF0602-BS1)

Prepared & Analyzed: 06/30/21

pH 9.27 pH Units 9.21 101 95-105

Duplicate (BEF0602-DUP1)

Source: 2106448-01

Prepared & Analyzed: 06/30/21

pH 8.22 pH Units 8.21 0.122 20

Summit Scientific

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



Absaroka Solutions
112 High Street
Buffalo WY, 82834

Project: Dubois Battery Spill Support

Project Number: CIT.CO.0549.01
Project Manager: Max Moran

Reported:
08/02/21 11:20

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
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

Appendix F – Photolog



Photographic Log

Dubois Tank Battery Site Sampling and Delineation (June 2021)

Table of Contents

OVERVIEW	1
DELINEATION AND SOIL SAMPLING	7

OVERVIEW



Photo No 1:

Description:
Dubois Tank
Battery facing
southwest. Note
that the hazy photo
quality is a result of
wildfire smoke.



Photo No 2:

Description:
Dubois Tank
Battery facing
southeast.



Photo No 3:
Description:
Dubois Tank
Battery facing
northeast.



Photo No 4:
Description:
Dubois Tank
Battery facing
northwest.



Photo No 5:

Description:
Release origin from the top of southeastern tank (Right tank pictured).



Photo No 6:

Description:
Release flow path facing east. Photo from western side of earthen berm displaying release origin tank and in-containment pooling area.



Photo No 7:

Description:
Release flow north,
small pipe in
bottom of frame
demonstrates
breach point on
earthen berm.



Photo No 8:

Description:
Release flow path
facing southeast.
Photo
demonstrates the
tank battery
boundary and
extent of the
release pooling
area.



Photo No 9:

Description:
Release flow path facing southeast. Flow path to pooled area and staining on fencing at approximately ten (10) inches in height.



Photo No 10:

Description:
Release flow path facing north. Final pooling area from release.



Photo No 11:

Description:
Release flow path facing west. Final pooling area from release, furthest extent of pooling to the south.



Photo No 12:

Description:
Release flow path facing south. Photograph taken from fence line that is the northern boundary pooling area, facing downstream toward the pooling area.

DELINEATION AND SOIL SAMPLING



Photo No 13:

Description:
Sampling of
CIT_DB_SS_01
occurred in
foreground of photo.



Photo No 14:

Description:
Sampling location of
CIT_DB_SS_03.
Sample collected on
northern side of
pooling area.



Photo No 15:

Description:
Sampling location of
CIT_DB_SS_05.
Sample collected in
center of pooling
location.



Photo No 16:

Description:
Sampling location of
CIT_DB_SS_07.
Sample collected in
southern portion of
pooling area.



Photo No 17:

Description:
Sampling location of
CIT_DB_SS_08.
Sample was collected
within containment,
north of pumphouse.



Photo No 18:

Description:
Sampling location of
CIT_DB_SS_BG_01.
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