

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 28, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Hoffman B33-19 Tank Battery

Work Order #2408221

Enclosed are the results of analyses for samples received by Summit Scientific on 08/20/24 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury

President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2408221-01	Soil	08/20/24 09:15	08/20/24 17:40
PWV01-B@6'	2408221-02	Soil	08/20/24 10:10	08/20/24 17:40
SEP01-DL01@3.5'	2408221-06	Soil	08/20/24 09:28	08/20/24 17:40
SEP01-DL02@3.5'	2408221-07	Soil	08/20/24 09:30	08/20/24 17:40
BKG01@0-6"	2408221-10	Soil	08/20/24 14:27	08/20/24 17:40
BKG01@2.5'	2408221-11	Soil	08/20/24 14:29	08/20/24 17:40
BKG01@3.5'	2408221-12	Soil	08/20/24 14:31	08/20/24 17:40
BKG01@6'	2408221-13	Soil	08/20/24 14:33	08/20/24 17:40

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4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page of
2408221	

Client: PDC / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 119th Ave		Project Manager: Karen Olson		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80020		E-Mail: karen.olson@chevron.com		Project Name/Location: Hoffman B33-11 Tank Battery	
Phone: 303-487-1228		Project Name: Hoffman B33-11 Tank Battery		AFE#: PX-900 268	
Sampler Name: Ryan Yavinsky / Loren Bohannon		Project Number:		PO/Billing Codes:	
				Contact: Karen Olson Debert Paul	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4	Full 915 suite	HOVD		915-metals	pH, EC, SAR	BODN	
1	AST01e0-6"	8/20/24	0915	3			3			X					X							
2	PW01-B06'		1010												X							
3	PW01-E02.5'		1013														X					
4	PW01-S02.5'		1015															X				
5	PW01-W02.5'		1007																X			
6	SEP01-0101e3.5'		0928												X							
7	SEP01-0102e3.5'		0930												X							
8	N-PW01-E02.5'		1518																X			
9	W-PW01-W02.5'		1508																X			
10	BK601e0-6"		1427																	X	X	X
11	BK601e2.5'		1429																			
12	BK601e3.5'		1431																			
13	BK601e6'	I	1433	I																		
14	PW01-N02.5'	I	1008	I															X			
15																						

Relinquished by: Date/Time: 8/20/24 1730	Received by: Tasman Lockbox Date/Time: 8/20/24 1730	TAT Business Days	Field DO	Notes:
		Same Day	Field EC	
Relinquished by: Tasman Lockbox Date/Time: 8/20/24 1740	Received by: Date/Time: 8/20/24 1740	1 Day	Field ORP	
		2 Days	Field pH	
Relinquished by: Date/Time:	Received by: Date/Time:	3 Days	Field Temp.	
		Standard	X Field Turb.	
Temperature Upon Receipt: 11.1	Corrected Temperature: 0	IR gun #: 1	HNO3 lot #:	



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

AST01@0-6"
2408221-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0595	08/21/24	08/22/24	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: **08/20/24 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0386	96.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0598	08/21/24	08/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	14.0	112 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - Hoffman B33-19 Tank Battery

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AST01@0-6"
2408221-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0628	08/22/24	08/22/24	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: **08/20/24 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0156	46.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0188	56.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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AST01@0-6"
2408221-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.02	0.200	mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B
Barium	30.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.51	0.400	"	"	"	"	"	"
Lead	4.47	0.200	"	"	"	"	"	"
Nickel	2.62	0.400	"	"	"	"	"	"
Silver	0.0247	0.0200	"	"	"	"	"	"
Zinc	11.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	419	0.0500	mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	67.5	0.0500	"	"	"	"	"	"	
Sodium	120	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.43	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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08/28/24 09:17

AST01@0-6"
2408221-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	95.5			%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.74	0.0100		mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.77			pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

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PWV01-B@6'
2408221-02 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0595	08/21/24	08/22/24	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: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0409	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0598	08/21/24	08/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.1	113 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: [none]
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PWV01-B@6'
2408221-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0628	08/22/24	08/22/24	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: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0151	45.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	50.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

PWV01-B@6'
2408221-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.70	0.200	mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B	
Barium	26.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.62	0.400	"	"	"	"	"	"	
Lead	3.26	0.200	"	"	"	"	"	"	
Nickel	2.00	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	8.47	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.3	0.0500	mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	25.5	0.0500	"	"	"	"	"	"	
Sodium	52.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.82	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

PWV01-B@6'
2408221-02 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	186		%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.626	0.0100	mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18		pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL01@3.5'
2408221-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0595	08/21/24	08/22/24	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: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0420	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0389	97.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0598	08/21/24	08/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.4	115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL01@3.5'
2408221-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0628	08/22/24	08/22/24	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: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0201	60.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0214	64.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL01@3.5'
2408221-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.45	0.179	mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B	
Barium	63.2	0.357	"	"	"	"	"	"	
Cadmium	ND	0.179	"	"	"	"	"	"	
Copper	5.95	0.357	"	"	"	"	"	"	
Lead	7.55	0.179	"	"	"	"	"	"	
Nickel	3.95	0.357	"	"	"	"	"	"	
Silver	0.0304	0.0179	"	"	"	"	"	"	
Zinc	18.8	0.357	"	"	"	"	"	"	
Selenium	ND	0.232	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.8	0.0500	mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	13.8	0.0500	"	"	"	"	"	"	
Sodium	4.27	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.159	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL01@3.5'
2408221-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	86.9			%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.237	0.0100		mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL02@3.5'
2408221-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0595	08/21/24	08/22/24	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: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0383	95.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0598	08/21/24	08/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.1	113 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL02@3.5'
2408221-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0628	08/22/24	08/22/24	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: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0233	69.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0253	75.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL02@3.5'
2408221-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.93	0.200	mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B	
Barium	68.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.48	0.400	"	"	"	"	"	"	
Lead	4.83	0.200	"	"	"	"	"	"	
Nickel	3.92	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	14.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.9	0.0500	mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	15.4	0.0500	"	"	"	"	"	"	
Sodium	8.53	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.313	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

SEP01-DL02@3.5'
2408221-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.3		%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.289	0.0100	mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.00		pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

**BKG01@0-6''
2408221-10 (Soil)**

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.90	0.200		mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B	
Barium	53.6	0.400		"	"	"	"	"	"	
Cadmium	0.224	0.200		"	"	"	"	"	"	
Copper	5.61	0.400		"	"	"	"	"	"	
Lead	7.77	0.200		"	"	"	"	"	"	
Nickel	3.93	0.400		"	"	"	"	"	"	
Silver	0.0391	0.0200		"	"	"	"	"	"	
Zinc	22.0	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	28.4	0.0500		mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	40.8	0.0500		"	"	"	"	"	"	
Sodium	336	0.0500		"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

**BKG01@0-6''
2408221-10 (Soil)**

Summit Scientific

Calculated Analysis

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.46	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.15	0.0100	mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 14:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

BKG01@2.5'
2408221-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.21	0.200	mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B	
Barium	27.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.98	0.400	"	"	"	"	"	"	
Lead	4.95	0.200	"	"	"	"	"	"	
Nickel	2.32	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	12.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	37.4	0.0500	mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	44.4	0.0500	"	"	"	"	"	"	
Sodium	338	0.0500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

BKG01@2.5'
2408221-11 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.85	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.8		%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.13	0.0100	mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 14:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

BKG01@3.5'
2408221-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.33	0.200	mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B	
Barium	77.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.02	0.400	"	"	"	"	"	"	
Lead	7.58	0.200	"	"	"	"	"	"	
Nickel	4.70	0.400	"	"	"	"	"	"	
Silver	0.0390	0.0200	"	"	"	"	"	"	
Zinc	18.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	15.8	0.0500	mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	110	0.0500	"	"	"	"	"	"	
Sodium	345	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

BKG01@3.5'
2408221-12 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.77	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.14	0.0100	mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 14:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.00		pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

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6855 W. 119th Ave.
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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

BKG01@6'
2408221-13 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0584	08/21/24	08/23/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.61	0.200	mg/kg dry	1	BHH0589	08/21/24	08/22/24	EPA 6020B	
Barium	60.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.26	0.400	"	"	"	"	"	"	
Lead	7.19	0.200	"	"	"	"	"	"	
Nickel	4.11	0.400	"	"	"	"	"	"	
Silver	0.0398	0.0200	"	"	"	"	"	"	
Zinc	18.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0574	08/21/24	08/21/24	EPA 7196A	

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

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	39.7	0.0500	mg/L dry	1	BHH0604	08/21/24	08/26/24	EPA 6020B	
Magnesium	58.1	0.0500	"	"	"	"	"	"	
Sodium	363	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

BKG01@6'
2408221-13 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.59	0.00100	units	1	BHH0815	08/27/24	08/27/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.2		%	1	BHH0612	08/21/24	08/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.13	0.0100	mmhos/cm	1	BHH0606	08/21/24	08/28/24	EPA 120.1	

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

Date Sampled: **08/20/24 14:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.92		pH Units	1	BHH0605	08/21/24	08/28/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0595 - EPA 5030 Soil MS

Blank (BHH0595-BLK1)

Prepared & Analyzed: 08/21/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	50-150			

LCS (BHH0595-BS1)

Prepared & Analyzed: 08/21/24

Benzene	0.0988	0.0020	mg/kg	0.100		98.8	70-130			
Toluene	0.0991	0.0050	"	0.100		99.1	70-130			
Ethylbenzene	0.0995	0.0050	"	0.100		99.5	70-130			
m,p-Xylene	0.200	0.010	"	0.200		100	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.0963	0.0050	"	0.100		96.3	70-130			
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100		95.8	70-130			
Naphthalene	0.0966	0.0038	"	0.100		96.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150			

Matrix Spike (BHH0595-MS1)

Source: 2408123-08

Prepared: 08/21/24 Analyzed: 08/22/24

Benzene	0.0887	0.0020	mg/kg	0.100	ND	88.7	70-130			
Toluene	0.0882	0.0050	"	0.100	ND	88.2	70-130			
Ethylbenzene	0.0877	0.0050	"	0.100	ND	87.7	70-130			
m,p-Xylene	0.178	0.010	"	0.200	ND	89.0	70-130			
o-Xylene	0.0906	0.0050	"	0.100	ND	90.6	70-130			
1,2,4-Trimethylbenzene	0.0839	0.0050	"	0.100	ND	83.9	70-130			
1,3,5-Trimethylbenzene	0.0855	0.0050	"	0.100	ND	85.5	70-130			
Naphthalene	0.0731	0.0038	"	0.100	ND	73.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0407		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	50-150			

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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		

Batch BHH0595 - EPA 5030 Soil MS

Matrix Spike Dup (BHH0595-MSD1)	Source: 2408123-08			Prepared: 08/21/24 Analyzed: 08/22/24						
Benzene	0.0892	0.0020	mg/kg	0.100	ND	89.2	70-130	0.573	30	
Toluene	0.0872	0.0050	"	0.100	ND	87.2	70-130	1.13	30	
Ethylbenzene	0.0886	0.0050	"	0.100	ND	88.6	70-130	1.02	30	
m,p-Xylene	0.180	0.010	"	0.200	ND	89.8	70-130	0.923	30	
o-Xylene	0.0902	0.0050	"	0.100	ND	90.2	70-130	0.498	30	
1,2,4-Trimethylbenzene	0.0811	0.0050	"	0.100	ND	81.1	70-130	3.38	30	
1,3,5-Trimethylbenzene	0.0823	0.0050	"	0.100	ND	82.3	70-130	3.79	30	
Naphthalene	0.0731	0.0038	"	0.100	ND	73.1	70-130	0.0821	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0382</i>		<i>"</i>	<i>0.0400</i>		<i>95.6</i>	<i>50-150</i>			

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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0598 - EPA 3550A

Blank (BHH0598-BLK1)

Prepared: 08/21/24 Analyzed: 08/22/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	14.0		"	12.5		112	30-150				

LCS (BHH0598-BS1)

Prepared: 08/21/24 Analyzed: 08/22/24

C10-C28 (DRO)	451	50	mg/kg	500		90.1	70-130				
Surrogate: <i>o</i> -Terphenyl	14.3		"	12.5		115	30-150				

Matrix Spike (BHH0598-MS1)

Source: 2408123-08

Prepared: 08/21/24 Analyzed: 08/22/24

C10-C28 (DRO)	468	50	mg/kg	500	29.8	87.6	70-130				
Surrogate: <i>o</i> -Terphenyl	14.5		"	12.5		116	30-150				

Matrix Spike Dup (BHH0598-MSD1)

Source: 2408123-08

Prepared: 08/21/24 Analyzed: 08/22/24

C10-C28 (DRO)	463	50	mg/kg	500	29.8	86.6	70-130	1.03	20		
Surrogate: <i>o</i> -Terphenyl	14.3		"	12.5		114	30-150				

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0628 - EPA 5030 Soil MS

Blank (BHH0628-BLK1)

Prepared & Analyzed: 08/22/24

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>0.0212</i>		<i>"</i>	<i>0.0333</i>		<i>63.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0198</i>		<i>"</i>	<i>0.0333</i>		<i>59.3</i>	<i>40-150</i>			

LCS (BHH0628-BS1)

Prepared & Analyzed: 08/22/24

Acenaphthene	0.0222	0.00500	mg/kg	0.0333		66.5	31-137			
Anthracene	0.0204	0.00500	"	0.0333		61.3	30-120			
Benzo (a) anthracene	0.0229	0.00500	"	0.0333		68.6	30-120			
Benzo (a) pyrene	0.0192	0.00500	"	0.0333		57.6	30-120			
Benzo (b) fluoranthene	0.0290	0.00500	"	0.0333		86.9	30-120			
Benzo (k) fluoranthene	0.0199	0.00500	"	0.0333		59.6	30-120			
Chrysene	0.0318	0.00500	"	0.0333		95.3	30-120			
Dibenz (a,h) anthracene	0.0176	0.00500	"	0.0333		52.7	30-120			
Fluoranthene	0.0212	0.00500	"	0.0333		63.7	30-120			
Fluorene	0.0211	0.00500	"	0.0333		63.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333		53.2	30-120			
Pyrene	0.0254	0.00500	"	0.0333		76.1	35-142			
1-Methylnaphthalene	0.0205	0.00500	"	0.0333		61.5	35-142			
2-Methylnaphthalene	0.0202	0.00500	"	0.0333		60.6	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0205</i>		<i>"</i>	<i>0.0333</i>		<i>61.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0219</i>		<i>"</i>	<i>0.0333</i>		<i>65.7</i>	<i>40-150</i>			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0628 - EPA 5030 Soil MS

Matrix Spike (BHH0628-MS1)	Source: 2408221-01			Prepared & Analyzed: 08/22/24							
Acenaphthene	0.0205	0.00500	mg/kg	0.0333	ND	61.6	31-137				
Anthracene	0.0179	0.00500	"	0.0333	ND	53.7	30-120				
Benzo (a) anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120				
Benzo (a) pyrene	0.0167	0.00500	"	0.0333	ND	50.1	30-120				
Benzo (b) fluoranthene	0.0155	0.00500	"	0.0333	ND	46.6	30-120				
Benzo (k) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.6	30-120				
Chrysene	0.0293	0.00500	"	0.0333	ND	88.0	30-120				
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.7	30-120				
Fluoranthene	0.0201	0.00500	"	0.0333	ND	60.2	30-120				
Fluorene	0.0194	0.00500	"	0.0333	ND	58.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0152	0.00500	"	0.0333	ND	45.6	30-120				
Pyrene	0.0206	0.00500	"	0.0333	ND	61.9	35-142				
1-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.7	15-130				
2-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.5	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0189</i>		<i>"</i>	<i>0.0333</i>		<i>56.8</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0209</i>		<i>"</i>	<i>0.0333</i>		<i>62.7</i>	<i>40-150</i>				

Matrix Spike Dup (BHH0628-MSD1)	Source: 2408221-01			Prepared & Analyzed: 08/22/24							
Acenaphthene	0.0188	0.00500	mg/kg	0.0333	ND	56.5	31-137	8.65	30		
Anthracene	0.0179	0.00500	"	0.0333	ND	53.8	30-120	0.195	30		
Benzo (a) anthracene	0.0227	0.00500	"	0.0333	ND	68.1	30-120	2.27	30		
Benzo (a) pyrene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	0.635	30		
Benzo (b) fluoranthene	0.0140	0.00500	"	0.0333	ND	41.9	30-120	10.6	30		
Benzo (k) fluoranthene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	5.25	30		
Chrysene	0.0292	0.00500	"	0.0333	ND	87.7	30-120	0.312	30		
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120	0.616	30		
Fluoranthene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	5.92	30		
Fluorene	0.0184	0.00500	"	0.0333	ND	55.3	30-120	4.89	30		
Indeno (1,2,3-cd) pyrene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	1.75	30		
Pyrene	0.0202	0.00500	"	0.0333	ND	60.7	35-142	1.99	30		
1-Methylnaphthalene	0.0158	0.00500	"	0.0333	ND	47.5	15-130	15.8	50		
2-Methylnaphthalene	0.0156	0.00500	"	0.0333	ND	46.9	15-130	16.9	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0160</i>		<i>"</i>	<i>0.0333</i>		<i>47.9</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0199</i>		<i>"</i>	<i>0.0333</i>		<i>59.6</i>	<i>40-150</i>				

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0584 - EPA 3050B

Blank (BHH0584-BLK1)

Prepared: 08/21/24 Analyzed: 08/23/24

Boron ND 2.00 mg/L

LCS (BHH0584-BS1)

Prepared: 08/21/24 Analyzed: 08/23/24

Boron 5.17 2.00 mg/L 5.00 103 80-120

Duplicate (BHH0584-DUP1)

Source: 2408218-01

Prepared: 08/21/24 Analyzed: 08/23/24

Boron 0.138 2.00 mg/L 0.143 3.21 20

Matrix Spike (BHH0584-MS1)

Source: 2408218-01

Prepared: 08/21/24 Analyzed: 08/23/24

Boron 4.99 2.00 mg/L 4.96 0.143 97.7 75-125

Matrix Spike Dup (BHH0584-MSD1)

Source: 2408218-01

Prepared: 08/21/24 Analyzed: 08/23/24

Boron 4.98 2.00 mg/L 4.96 0.143 97.5 75-125 0.161 25

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0589 - EPA 3050B

Blank (BHH0589-BLK1)

Prepared: 08/21/24 Analyzed: 08/22/24

Arsenic	ND	0.181	mg/kg wet							
Barium	ND	0.362	"							
Cadmium	ND	0.181	"							
Copper	ND	0.362	"							
Lead	ND	0.181	"							
Nickel	ND	0.362	"							
Silver	ND	0.0181	"							
Zinc	ND	0.362	"							
Selenium	ND	0.236	"							

LCS (BHH0589-BS1)

Prepared: 08/21/24 Analyzed: 08/22/24

Arsenic	34.4	0.200	mg/kg wet	36.8	93.6	80-120
Barium	35.4	0.400	"	36.8	96.2	80-120
Cadmium	1.77	0.200	"	1.84	96.4	80-120
Copper	39.4	0.400	"	36.8	107	80-120
Lead	18.1	0.200	"	18.4	98.4	80-120
Nickel	37.1	0.400	"	36.8	101	80-120
Silver	1.78	0.0200	"	1.84	96.7	80-120
Zinc	36.6	0.400	"	36.8	99.5	80-120
Selenium	4.09	0.260	"	3.68	111	80-120

Duplicate (BHH0589-DUP1)

Source: 2408221-01

Prepared: 08/21/24 Analyzed: 08/22/24

Arsenic	1.97	0.200	mg/kg dry	2.02	2.71	20
Barium	35.1	0.400	"	30.8	12.9	20
Cadmium	0.152	0.200	"	0.145	4.45	20
Copper	6.05	0.400	"	5.51	9.31	20
Lead	5.01	0.200	"	4.47	11.5	20
Nickel	2.73	0.400	"	2.62	4.19	20
Silver	0.0275	0.0200	"	0.0247	10.6	20
Zinc	12.2	0.400	"	11.6	5.11	20
Selenium	ND	0.260	"	ND		20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0589 - EPA 3050B

Matrix Spike (BHH0589-MS1)	Source: 2408221-01			Prepared: 08/21/24 Analyzed: 08/22/24								
Arsenic	39.1	0.200	mg/kg dry	39.4	2.02	94.2	75-125					
Barium	70.1	0.400	"	39.4	30.8	99.9	75-125					
Cadmium	2.06	0.200	"	1.97	0.145	97.5	75-125					
Copper	36.8	0.400	"	39.4	5.51	79.4	75-125					
Lead	24.9	0.200	"	19.7	4.47	104	75-125					
Nickel	29.9	0.400	"	39.4	2.62	69.4	75-125					QM-07
Silver	1.88	0.0200	"	1.97	0.0247	94.4	75-125					
Zinc	39.5	0.400	"	39.4	11.6	71.0	75-125					QM-07
Selenium	4.42	0.260	"	3.94	ND	112	75-125					

Matrix Spike Dup (BHH0589-MSD1)	Source: 2408221-01			Prepared: 08/21/24 Analyzed: 08/22/24								
Arsenic	38.5	0.200	mg/kg dry	38.5	2.02	94.8	75-125	1.58	25			
Barium	73.2	0.400	"	38.5	30.8	110	75-125	4.34	25			
Cadmium	2.01	0.200	"	1.92	0.145	97.0	75-125	2.56	25			
Copper	32.7	0.400	"	38.5	5.51	70.6	75-125	11.8	25			QM-07
Lead	23.4	0.200	"	19.2	4.47	98.6	75-125	5.88	25			
Nickel	28.8	0.400	"	38.5	2.62	68.1	75-125	3.73	25			QM-07
Silver	1.84	0.0200	"	1.92	0.0247	94.4	75-125	2.17	25			
Zinc	38.8	0.400	"	38.5	11.6	70.7	75-125	1.88	25			QM-07
Selenium	4.20	0.260	"	3.85	ND	109	75-125	5.24	25			

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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0574 - 3060A Mod

Blank (BHH0574-BLK1)

Prepared & Analyzed: 08/21/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHH0574-BS1)

Prepared & Analyzed: 08/21/24

Chromium, Hexavalent 25.2 0.30 mg/kg wet 25.0 101 80-120

Duplicate (BHH0574-DUP1)

Source: 2408211-01

Prepared & Analyzed: 08/21/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHH0574-MS1)

Source: 2408211-01

Prepared & Analyzed: 08/21/24

Chromium, Hexavalent 25.6 0.30 mg/kg dry 28.6 ND 89.4 75-125

Matrix Spike Dup (BHH0574-MSD1)

Source: 2408211-01

Prepared & Analyzed: 08/21/24

Chromium, Hexavalent 25.3 0.30 mg/kg dry 28.6 ND 88.6 75-125 0.899 20

Summit Scientific

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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0604 - General Preparation

Blank (BHH0604-BLK1)

Prepared: 08/21/24 Analyzed: 08/26/24

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

LCS (BHH0604-BS1)

Prepared: 08/21/24 Analyzed: 08/26/24

Calcium	4.95	0.0500	mg/L wet	5.00	99.1	70-130				
Magnesium	5.53	0.0500	"	5.00	111	70-130				
Sodium	5.33	0.0500	"	5.00	107	70-130				

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0612 - General Preparation

Duplicate (BHH0612-DUP1)

Source: 2408211-01

Prepared: 08/21/24 Analyzed: 08/22/24

% Solids	86.8		%		87.4			0.740	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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

Summit Scientific

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

Batch BHH0606 - General Preparation

Blank (BHH0606-BLK1)

Prepared: 08/21/24 Analyzed: 08/28/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHH0606-BS1)

Prepared: 08/21/24 Analyzed: 08/28/24

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BHH0606-DUP1)

Source: 2408220-01

Prepared: 08/21/24 Analyzed: 08/28/24

Specific Conductance (EC) 0.344 0.0100 mmhos/cm 0.347 0.956 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

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 BHH0605 - General Preparation

LCS (BHH0605-BS1)

Prepared: 08/21/24 Analyzed: 08/28/24

pH	9.05		pH Units	9.18		98.6	95-105			
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Duplicate (BHH0605-DUP1)

Source: 2408220-01

Prepared: 08/21/24 Analyzed: 08/28/24

pH	8.55		pH Units	8.57			0.234	20		
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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Hoffman B33-19 Tank Battery

Project Number: [none]
Project Manager: Karen Olson

Reported:
08/28/24 09:17

Notes and Definitions

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