

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 29, 2024

Andy Sagen

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - MDM 33-14 Flowline

Work Order #2410299

Enclosed are the results of analyses for samples received by Summit Scientific on 10/17/24 17:51. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury

President



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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
 Project Manager: Andy Sagen

Reported:
 10/29/24 11:49

ANALYTICAL REPORT FOR SAMPLES


Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-W@4'	2410299-01	Soil	10/17/24 11:20	10/17/24 17:51
FL01-02@4'	2410299-02	Soil	10/17/24 11:10	10/17/24 17:51
FL01-04@4'	2410299-03	Soil	10/17/24 10:46	10/17/24 17:51
FL01-05@5'	2410299-04	Soil	10/17/24 12:05	10/17/24 17:51
FL01-06@5'	2410299-05	Soil	10/17/24 09:57	10/17/24 17:51
FL01-07@3'	2410299-06	Soil	10/17/24 09:38	10/17/24 17:51
FL01-08@3'	2410299-07	Soil	10/17/24 09:34	10/17/24 17:51
FL01R-S@4'	2410299-08	Soil	10/17/24 09:32	10/17/24 17:51
BKG01@0-6"	2410299-09	Soil	10/17/24 11:42	10/17/24 17:51
BKG01@2.5'	2410299-10	Soil	10/17/24 11:44	10/17/24 17:51
BKG01@3'	2410299-11	Soil	10/17/24 11:46	10/17/24 17:51
BKG01@4'	2410299-12	Soil	10/17/24 11:48	10/17/24 17:51
BKG01@5'	2410299-13	Soil	10/17/24 11:50	10/17/24 17:51
GW01@5'	2410299-14	Water	10/17/24 10:11	10/17/24 17:51
GW02@4'	2410299-15	Water	10/17/24 12:14	10/17/24 17:51

Case Narrative

This project has been renamed per client request on 10/29/2024.

This is a revision of the report originally sent on 10/29/2024 at 08:51 MT.

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.

Client: PDC/Tasman		Project Manager: Andy Sagen		Company: PDC Energy	
Address: 6855 W. 119th Ave.		E-Mail: tas-chevron-1@tasman-geo.com		Project Name/Location: MDM 33-14 Flowline	
City/State/Zip: Broomfield/CO/ 80020				AFE#: PX-900220	
Phone:		Project Name: MDM 33-14 Flowline		PO/Billing Codes:	
Sampler Name: S. Bousquet		Project Number: 32449		Contact: Karen Olson	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS		HOLD
1	FLOIR-WP4'	10-17-24	11:20	3			X			X			X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	FLOI-02@4'		11:10	1																
3	FLOI-04@4'		10:46	1																
4	FLOI-05@5'		12:05	1																
5	FLOI-06@5'		9:57	1																
6	FLOI-07@3'		9:38	1																
7	FLOI-08@3'		9:34	1																
8	FLOIR-5@4'	9:33 ^B	9:32	1																
9	BK601@0-6"		11:42	1																
10	BK601@2.5'		11:44	1																
11	BK601@3'		11:46	1																
12	BK601@4'		11:48	1																
13	BK601@5'		11:50	1																
14																				
15																				

Relinquished by: <i>Andy Sagen</i>	Date/Time: 10-17-24 16:40	Received by: Tasman Lock Box	Date/Time: 10-17-24 16:40	TAT Business Days	Field DO	Notes:
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 10/17/24 1751	Received by: <i>[Signature]</i>	Date/Time: 10/17/24 1751	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 13.3	Corrected Temperature: 9	IR gun #: 1	HNO3 lot #:	Standard	X Field Turb.	

		Send Data To:	Send Invoice To:
Client: PDC/Tasman		Project Manager: Andy Sagen	Company: PDC Energy
Address: 6855 W. 119th Ave.		E-Mail: tas-chevron-1@tasman-geo.com	Project Name/Location: MDM 33-14 Flowline
City/State/Zip: Broomfield/CO/ 80020			AFE#: PX-900220
Phone: 970-214-7901		Project Name: MDM 33-14 Flowline	PO/Billing Codes:
Sampler Name: Lillian Buck S Bousquet		Project Number: 32449	Contact: Karen Olson

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					
1	GW01@5'	10-17-24	10:11	4	3		1		X					X	X	X				
2	GW02@4'	10-17-24	12:14	4	3		1		X					X	X	X				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by:	Date/Time: 10-17-24 16:40	Received by: Tasman Lock Box	Date/Time: 10-14-24 16:40	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by:	Date/Time: 10-17-24 17:51	Received by:	Date/Time: 10-17-24 17:51	1 Day	Field ORP	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	<input checked="" type="checkbox"/> Field Turb.	
Temperature Upon Receipt: 13.3	Corrected Temperature: 8	IR gun #: _____	HNO3 lot #: _____			

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2410299

Client: Pactosman

Client Project ID: MDM 33-14 Flowline

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

Airbill #:

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp (°C)

13.3

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on 2/05
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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.

AS

Custodian Printed Name

10/17/24
Date/Time



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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01R-W@4'
2410299-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/19/24	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: **10/17/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0385	96.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.4	82.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: 32449
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10/29/24 11:49

FL01R-W@4'
2410299-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0177	53.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0192	57.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 11:20**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01R-W@4'
2410299-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.41	0.200	mg/kg dry	1	BHJ1013	10/24/24	10/25/24	EPA 6020B	
Barium	128	0.400	"	"	"	"	"	"	
Cadmium	1.02	0.200	"	"	"	"	"	"	
Copper	12.5	0.400	"	"	"	"	"	"	
Lead	23.5	0.200	"	"	"	"	"	"	
Nickel	8.28	0.400	"	"	"	"	"	"	
Silver	0.0703	0.0200	"	"	"	"	"	"	
Zinc	51.0	0.400	"	"	"	"	"	"	
Selenium	0.276	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/17/24 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: 10/17/24 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.9	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	21.3	0.0500	"	"	"	"	"	"	
Sodium	12.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/17/24 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.441	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/17/24 11:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: 32449
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10/29/24 11:49

FL01R-W@4'
2410299-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.0	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.387	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
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10/29/24 11:49

FL01-02@4'
2410299-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/19/24	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: **10/17/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0354	88.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.3 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	14.2	114 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
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Reported:
10/29/24 11:49

FL01-02@4'
2410299-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0204	61.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 11:10**

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-02@4'
2410299-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.38	0.200	mg/kg dry	1	BHJ1013	10/24/24	10/25/24	EPA 6020B
Barium	122	0.400	"	"	"	"	"	"
Cadmium	0.247	0.200	"	"	"	"	"	"
Copper	6.96	0.400	"	"	"	"	"	"
Lead	8.83	0.200	"	"	"	"	"	"
Nickel	8.08	0.400	"	"	"	"	"	"
Silver	0.0434	0.0200	"	"	"	"	"	"
Zinc	26.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	84.8	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	35.2	0.0500	"	"	"	"	"	"	
Sodium	182	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.19	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/17/24 11:10**

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-02@4'
2410299-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.0	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 11:10**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.32	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.64		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-04@4'
2410299-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/19/24	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: **10/17/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0350	87.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0379	94.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.0	96.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-04@4'
2410299-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0267	80.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0298	89.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 10:46**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-04@4'
2410299-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.61	0.200	mg/kg dry	1	BHJ1013	10/24/24	10/25/24	EPA 6020B	
Barium	168	0.400	"	"	"	"	"	"	
Cadmium	0.398	0.200	"	"	"	"	"	"	
Copper	9.24	0.400	"	"	"	"	"	"	
Lead	12.8	0.200	"	"	"	"	"	"	
Nickel	9.24	0.400	"	"	"	"	"	"	
Silver	0.0762	0.0200	"	"	"	"	"	"	
Zinc	34.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.8	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	12.6	0.0500	"	"	"	"	"	"	
Sodium	50.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.03	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/17/24 10:46**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-04@4'
2410299-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	77.0	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 10:46**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.434	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

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Broomfield CO, 80020

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-05@5'
2410299-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ0776	10/18/24	10/19/24	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: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0379	94.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.1	105 %	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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-05@5'
2410299-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0246	73.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0955	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 12:05**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-05@5'
2410299-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.19	0.200	mg/kg dry	1	BHJ1013	10/24/24	10/25/24	EPA 6020B
Barium	103	0.400	"	"	"	"	"	"
Cadmium	0.264	0.200	"	"	"	"	"	"
Copper	7.83	0.400	"	"	"	"	"	"
Lead	10.6	0.200	"	"	"	"	"	"
Nickel	7.70	0.400	"	"	"	"	"	"
Silver	0.0582	0.0200	"	"	"	"	"	"
Zinc	28.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/17/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: 10/17/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.1	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	11.2	0.0500	"	"	"	"	"	"	
Sodium	40.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/17/24 12:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.71	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/17/24 12:05

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-05@5'
2410299-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.6	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 12:05**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.428	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

Summit Scientific



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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-06@5'
2410299-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 09:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 09:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0378	94.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0396	99.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0379	94.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 09:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 09:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.65	77.2 %		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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-06@5'
2410299-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 09:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 09:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0247	74.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0270	81.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 09:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 09:57**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-06@5'
2410299-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.61	0.200	mg/kg dry	1	BHJ1013	10/24/24	10/25/24	EPA 6020B
Barium	94.5	0.400	"	"	"	"	"	"
Cadmium	0.269	0.200	"	"	"	"	"	"
Copper	7.92	0.400	"	"	"	"	"	"
Lead	10.9	0.200	"	"	"	"	"	"
Nickel	7.80	0.400	"	"	"	"	"	"
Silver	0.0636	0.0200	"	"	"	"	"	"
Zinc	30.6	0.400	"	"	"	"	"	"
Selenium	0.282	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/17/24 09:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: 10/17/24 09:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.9	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	33.6	0.0500	"	"	"	"	"	"	
Sodium	52.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/17/24 09:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.56	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/17/24 09:57

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-06@5'
2410299-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	77.3	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 09:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.778	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 09:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.64		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-07@3'
2410299-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 09:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0371	92.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0367	91.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.78	78.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-07@3'
2410299-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0221	66.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 09:38**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-07@3'
2410299-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.27	0.200	mg/kg dry	1	BHJ1013	10/24/24	10/25/24	EPA 6020B
Barium	91.9	0.400	"	"	"	"	"	"
Cadmium	0.242	0.200	"	"	"	"	"	"
Copper	6.76	0.400	"	"	"	"	"	"
Lead	8.73	0.200	"	"	"	"	"	"
Nickel	7.13	0.400	"	"	"	"	"	"
Silver	0.0433	0.0200	"	"	"	"	"	"
Zinc	27.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	100	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	76.0	0.0500	"	"	"	"	"	"	
Sodium	254	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.66	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/17/24 09:38**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-07@3'
2410299-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.0	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.75	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-08@3'
2410299-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0377	94.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.3	82.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-08@3'
2410299-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0246	73.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0259	77.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 09:34**

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-08@3'
2410299-07 (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	BHJ1014	10/24/24	10/24/24	EPA 6020B	
Barium	96.7	0.400	"	"	"	"	"	"	
Cadmium	0.233	0.200	"	"	"	"	"	"	
Copper	6.61	0.400	"	"	"	"	"	"	
Lead	8.17	0.200	"	"	"	"	"	"	
Nickel	6.55	0.400	"	"	"	"	"	"	
Silver	0.0465	0.0200	"	"	"	"	"	"	
Zinc	24.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/17/24 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: 10/17/24 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	61.9	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	65.6	0.0500	"	"	"	"	"	"	
Sodium	285	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/17/24 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.02	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/17/24 09:34

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01-08@3'
2410299-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.7	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.90	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.96		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

Summit Scientific

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01R-S@4'
2410299-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 09:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 09:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0372	93.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 09:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 09:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.78	78.2 %		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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01R-S@4'
2410299-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0239	71.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0264	79.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 09:32**

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01R-S@4'
2410299-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.89	0.200	mg/kg dry	1	BHJ1014	10/24/24	10/24/24	EPA 6020B
Barium	106	0.400	"	"	"	"	"	"
Cadmium	0.242	0.200	"	"	"	"	"	"
Copper	7.95	0.400	"	"	"	"	"	"
Lead	8.95	0.200	"	"	"	"	"	"
Nickel	6.97	0.400	"	"	"	"	"	"
Silver	0.0500	0.0200	"	"	"	"	"	"
Zinc	25.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/17/24 09:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: 10/17/24 09:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.0	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	158	0.0500	"	"	"	"	"	"	
Sodium	3.96	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/17/24 09:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0596	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/17/24 09:32

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

FL01R-S@4'
2410299-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.1	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.221	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 09:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.46		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

Summit Scientific

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@0-6"
2410299-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0369	92.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0389	97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.5 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.2	106 %		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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@0-6''
2410299-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 11:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 11:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0238	71.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 11:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0956	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 11:42**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@0-6''
2410299-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.90	0.200	mg/kg dry	1	BHJ1014	10/24/24	10/24/24	EPA 6020B	
Barium	107	0.400	"	"	"	"	"	"	
Cadmium	0.262	0.200	"	"	"	"	"	"	
Copper	7.05	0.400	"	"	"	"	"	"	
Lead	9.72	0.200	"	"	"	"	"	"	
Nickel	7.58	0.400	"	"	"	"	"	"	
Silver	0.0535	0.0200	"	"	"	"	"	"	
Zinc	27.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/17/24 11:42

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: 10/17/24 11:42

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	51.7	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	29.0	0.0500	"	"	"	"	"	"	
Sodium	251	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/17/24 11:42

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.93	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/17/24 11:42

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@0-6''
2410299-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	91.2	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 11:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.57	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 11:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.92		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

Summit Scientific

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@2.5'
2410299-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0352	88.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0378	94.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.6	92.4 %		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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@2.5'
2410299-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0246	73.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0957	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 11:44**

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@2.5'
2410299-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.27	0.200	mg/kg dry	1	BHJ1014	10/24/24	10/24/24	EPA 6020B	
Barium	115	0.400	"	"	"	"	"	"	
Cadmium	0.273	0.200	"	"	"	"	"	"	
Copper	6.78	0.400	"	"	"	"	"	"	
Lead	9.52	0.200	"	"	"	"	"	"	
Nickel	8.69	0.400	"	"	"	"	"	"	
Silver	0.0486	0.0200	"	"	"	"	"	"	
Zinc	26.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	78.1	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	64.9	0.0500	"	"	"	"	"	"	
Sodium	454	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.19	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/17/24 11:44**

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@2.5'
2410299-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.6	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.52	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@3'
2410299-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 11:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0351	87.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0381	95.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0373	93.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.18	73.4 %		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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@3'
2410299-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/22/24	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: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0234	70.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0259	77.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0957	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 11:46**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@3'
2410299-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.73	0.200	mg/kg dry	1	BHJ1014	10/24/24	10/24/24	EPA 6020B	
Barium	55.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.27	0.400	"	"	"	"	"	"	
Lead	7.43	0.200	"	"	"	"	"	"	
Nickel	6.11	0.400	"	"	"	"	"	"	
Silver	0.0328	0.0200	"	"	"	"	"	"	
Zinc	23.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.3	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	32.5	0.0500	"	"	"	"	"	"	
Sodium	116	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.97	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@3'
2410299-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	1	BHJ0816	10/21/24	10/21/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 11:46**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.05	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.78		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

Summit Scientific



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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@4'
2410299-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0359	89.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0379	94.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.44	75.5 %		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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@4'
2410299-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/23/24	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: **10/17/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0233	70.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0957	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 11:48**

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@4'
2410299-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.53	0.200	mg/kg dry	1	BHJ1014	10/24/24	10/24/24	EPA 6020B	
Barium	44.5	0.400	"	"	"	"	"	"	
Cadmium	0.275	0.200	"	"	"	"	"	"	
Copper	6.85	0.400	"	"	"	"	"	"	
Lead	9.84	0.200	"	"	"	"	"	"	
Nickel	8.37	0.400	"	"	"	"	"	"	
Silver	0.0214	0.0200	"	"	"	"	"	"	
Zinc	32.3	0.400	"	"	"	"	"	"	
Selenium	0.267	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/17/24 11:48

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: 10/17/24 11:48

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	51.3	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	30.1	0.0500	"	"	"	"	"	"	
Sodium	88.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/17/24 11:48

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.42	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/17/24 11:48

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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@4'
2410299-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.1	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.853	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.13		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

Summit Scientific

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@5'
2410299-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0776	10/18/24	10/20/24	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: **10/17/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0351	87.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0378	94.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0771	10/18/24	10/20/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.4	91.4 %		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 - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@5'
2410299-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0820	10/21/24	10/23/24	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: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0271	81.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0294	88.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0957	10/23/24	10/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/17/24 11:50**

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

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@5'
2410299-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.18	0.200	mg/kg dry	1	BHJ1014	10/24/24	10/24/24	EPA 6020B	
Barium	48.0	0.400	"	"	"	"	"	"	
Cadmium	0.370	0.200	"	"	"	"	"	"	
Copper	8.41	0.400	"	"	"	"	"	"	
Lead	10.1	0.200	"	"	"	"	"	"	
Nickel	8.88	0.400	"	"	"	"	"	"	
Silver	0.0284	0.0200	"	"	"	"	"	"	
Zinc	29.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ1011	10/24/24	10/24/24	EPA 7196A	

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

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.4	0.0500	mg/L dry	1	BHJ0857	10/21/24	10/23/24	EPA 6020B	
Magnesium	25.6	0.0500	"	"	"	"	"	"	
Sodium	72.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.16	0.00100	units	1	BHJ1031	10/24/24	10/24/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/17/24 11:50**

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

BKG01@5'
2410299-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.2	%	1	BHJ0816	10/21/24	10/21/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.821	0.0100	mmhos/cm	1	BHJ0859	10/21/24	10/23/24	EPA 120.1	

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

Date Sampled: **10/17/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.01		pH Units	1	BHJ0858	10/21/24	10/23/24	EPA 9045D	

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

GW01@5'
2410299-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 10:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHJ0849	10/21/24	10/22/24	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/17/24 10:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.5	101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.6	94.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/17/24 10:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	41.2	0.0600		mg/L	50	BHJ1105	10/25/24	10/26/24	EPA 300.0	
Sulfate	70.1	0.300		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/17/24 10:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	607	10.0		mg/L	1	BHJ0870	10/22/24	10/23/24	SM2540C	

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

GW02@4'
2410299-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/17/24 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHJ0849	10/21/24	10/22/24	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/17/24 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.8	104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.6	94.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.0 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/17/24 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	101	0.0600		mg/L	50	BHJ1105	10/25/24	10/26/24	EPA 300.0	
Sulfate	684	0.300		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/17/24 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1500	10.0		mg/L	1	BHJ0870	10/22/24	10/23/24	SM2540C	

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0776 - EPA 5030 Soil MS

Blank (BHJ0776-BLK1)

Prepared: 10/18/24 Analyzed: 10/19/24

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0358		"	0.0400		89.5	50-150			
<i>Surrogate: Toluene-d8</i>	0.0380		"	0.0400		94.9	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0383		"	0.0400		95.7	50-150			

LCS (BHJ0776-BS1)

Prepared: 10/18/24 Analyzed: 10/19/24

Benzene	0.0964	0.0020	mg/kg	0.100		96.4	70-130			
Toluene	0.0888	0.0050	"	0.100		88.8	70-130			
Ethylbenzene	0.0932	0.0050	"	0.100		93.2	70-130			
m,p-Xylene	0.189	0.010	"	0.200		94.6	70-130			
o-Xylene	0.0983	0.0050	"	0.100		98.3	70-130			
1,2,4-Trimethylbenzene	0.0920	0.0050	"	0.100		92.0	70-130			
1,3,5-Trimethylbenzene	0.0911	0.0050	"	0.100		91.1	70-130			
Naphthalene	0.0758	0.0038	"	0.100		75.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0371		"	0.0400		92.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0379		"	0.0400		94.7	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0386		"	0.0400		96.4	50-150			

Matrix Spike (BHJ0776-MS1)

Source: 2410297-24

Prepared: 10/18/24 Analyzed: 10/19/24

Benzene	0.0964	0.0020	mg/kg	0.100	ND	96.4	70-130			
Toluene	0.0856	0.0050	"	0.100	ND	85.6	70-130			
Ethylbenzene	0.0886	0.0050	"	0.100	ND	88.6	70-130			
m,p-Xylene	0.183	0.010	"	0.200	ND	91.5	70-130			
o-Xylene	0.0975	0.0050	"	0.100	ND	97.5	70-130			
1,2,4-Trimethylbenzene	0.0837	0.0050	"	0.100	ND	83.7	70-130			
1,3,5-Trimethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130			
Naphthalene	0.0819	0.0038	"	0.100	ND	81.9	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0421		"	0.0400		105	50-150			
<i>Surrogate: Toluene-d8</i>	0.0429		"	0.0400		107	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0446		"	0.0400		112	50-150			

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0776 - EPA 5030 Soil MS

Matrix Spike Dup (BHJ0776-MSD1)

Source: 2410297-24

Prepared: 10/18/24 Analyzed: 10/19/24

Benzene	0.103	0.0020	mg/kg	0.100	ND	103	70-130	6.21	30
Toluene	0.0973	0.0050	"	0.100	ND	97.3	70-130	12.8	30
Ethylbenzene	0.0912	0.0050	"	0.100	ND	91.2	70-130	2.90	30
m,p-Xylene	0.186	0.010	"	0.200	ND	93.0	70-130	1.64	30
o-Xylene	0.0995	0.0050	"	0.100	ND	99.5	70-130	2.07	30
1,2,4-Trimethylbenzene	0.0804	0.0050	"	0.100	ND	80.4	70-130	3.98	30
1,3,5-Trimethylbenzene	0.0836	0.0050	"	0.100	ND	83.6	70-130	3.32	30
Naphthalene	0.0756	0.0038	"	0.100	ND	75.6	70-130	8.04	30
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0400		113	50-150		
Surrogate: Toluene-d8	0.0480		"	0.0400		120	50-150		
Surrogate: 4-Bromofluorobenzene	0.0453		"	0.0400		113	50-150		

Batch BHJ0849 - EPA 5030 Water MS

Blank (BHJ0849-BLK1)

Prepared & Analyzed: 10/21/24

Benzene	ND	1.0	ug/l						
Toluene	ND	1.0	"						
Ethylbenzene	ND	1.0	"						
Xylenes (total)	ND	2.0	"						
Naphthalene	ND	1.0	"						
1,2,4-Trimethylbenzene	ND	1.0	"						
1,3,5-Trimethylbenzene	ND	1.0	"						
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.3		106	23-173		
Surrogate: Toluene-d8	12.4		"	13.3		93.4	20-170		
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167		

LCS (BHJ0849-BS1)

Prepared & Analyzed: 10/21/24

Benzene	38.7	1.0	ug/l	33.3		116	51-132		
Toluene	37.4	1.0	"	33.3		112	51-138		
Ethylbenzene	36.3	1.0	"	33.3		109	58-146		
m,p-Xylene	71.6	2.0	"	66.7		107	57-144		
o-Xylene	33.4	1.0	"	33.3		100	53-146		
Naphthalene	40.2	1.0	"	33.3		121	70-130		
1,2,4-Trimethylbenzene	36.1	1.0	"	33.3		108	70-130		
1,3,5-Trimethylbenzene	35.4	1.0	"	33.3		106	70-130		
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109	23-173		
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170		
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	21-167		

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHJ0849 - EPA 5030 Water MS

LCS Dup (BHJ0849-BSD1)

Prepared & Analyzed: 10/21/24

Benzene	36.8	1.0	ug/l	33.3	110	51-132	5.17	20	
Toluene	36.5	1.0	"	33.3	110	51-138	2.57	20	
Ethylbenzene	35.7	1.0	"	33.3	107	58-146	1.47	20	
m,p-Xylene	71.2	2.0	"	66.7	107	57-144	0.504	20	
o-Xylene	32.9	1.0	"	33.3	98.6	53-146	1.63	20	
Naphthalene	40.0	1.0	"	33.3	120	70-130	0.548	20	
1,2,4-Trimethylbenzene	35.3	1.0	"	33.3	106	70-130	2.30	20	
1,3,5-Trimethylbenzene	35.8	1.0	"	33.3	107	70-130	1.10	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.3</i>		<i>"</i>	<i>13.3</i>	<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.3</i>		<i>"</i>	<i>13.3</i>	<i>99.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.9</i>		<i>"</i>	<i>13.3</i>	<i>96.8</i>	<i>21-167</i>			

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Broomfield CO, 80020

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0771 - EPA 3550A

Blank (BHJ0771-BLK1)

Prepared: 10/18/24 Analyzed: 10/19/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	14.8		"	12.5		118	30-150				

LCS (BHJ0771-BS1)

Prepared: 10/18/24 Analyzed: 10/19/24

C10-C28 (DRO)	462	50	mg/kg	500		92.3	70-130				
Surrogate: <i>o</i> -Terphenyl	15.0		"	12.5		120	30-150				

Matrix Spike (BHJ0771-MS1)

Source: 2410297-24

Prepared: 10/18/24 Analyzed: 10/19/24

C10-C28 (DRO)	463	50	mg/kg	500	ND	92.6	70-130				
Surrogate: <i>o</i> -Terphenyl	13.5		"	12.5		108	30-150				

Matrix Spike Dup (BHJ0771-MSD1)

Source: 2410297-24

Prepared: 10/18/24 Analyzed: 10/19/24

C10-C28 (DRO)	471	50	mg/kg	500	ND	94.3	70-130	1.82	20		
Surrogate: <i>o</i> -Terphenyl	16.7		"	12.5		133	30-150				

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BHJ0820 - EPA 5030 Soil MS

Blank (BHJ0820-BLK1)

Prepared: 10/21/24 Analyzed: 10/22/24

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>	0.0202		"	0.0333		60.6	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0219		"	0.0333		65.7	40-150			

LCS (BHJ0820-BS1)

Prepared: 10/21/24 Analyzed: 10/22/24

Acenaphthene	0.0209	0.00500	mg/kg	0.0333		62.8	31-137			
Anthracene	0.0214	0.00500	"	0.0333		64.1	30-120			
Benzo (a) anthracene	0.0221	0.00500	"	0.0333		66.3	30-120			
Benzo (a) pyrene	0.0206	0.00500	"	0.0333		61.9	30-120			
Benzo (b) fluoranthene	0.0207	0.00500	"	0.0333		62.1	30-120			
Benzo (k) fluoranthene	0.0206	0.00500	"	0.0333		61.8	30-120			
Chrysene	0.0210	0.00500	"	0.0333		63.0	30-120			
Dibenz (a,h) anthracene	0.0258	0.00500	"	0.0333		77.4	30-120			
Fluoranthene	0.0218	0.00500	"	0.0333		65.3	30-120			
Fluorene	0.0214	0.00500	"	0.0333		64.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0158	0.00500	"	0.0333		47.4	30-120			
Pyrene	0.0197	0.00500	"	0.0333		59.0	35-142			
1-Methylnaphthalene	0.0220	0.00500	"	0.0333		65.9	35-142			
2-Methylnaphthalene	0.0218	0.00500	"	0.0333		65.3	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0225		"	0.0333		67.6	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0223		"	0.0333		66.8	40-150			

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6855 W. 119th Ave.
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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0820 - EPA 5030 Soil MS

Matrix Spike (BHJ0820-MS1)	Source: 2410299-01			Prepared: 10/21/24 Analyzed: 10/22/24						
Acenaphthene	0.0182	0.00500	mg/kg	0.0333	ND	54.5	31-137			
Anthracene	0.0184	0.00500	"	0.0333	ND	55.3	30-120			
Benzo (a) anthracene	0.0197	0.00500	"	0.0333	ND	59.0	30-120			
Benzo (a) pyrene	0.0181	0.00500	"	0.0333	ND	54.4	30-120			
Benzo (b) fluoranthene	0.0182	0.00500	"	0.0333	ND	54.6	30-120			
Benzo (k) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.0	30-120			
Chrysene	0.0184	0.00500	"	0.0333	ND	55.3	30-120			
Dibenz (a,h) anthracene	0.0239	0.00500	"	0.0333	ND	71.6	30-120			
Fluoranthene	0.0190	0.00500	"	0.0333	ND	56.9	30-120			
Fluorene	0.0186	0.00500	"	0.0333	ND	55.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0316	0.00500	"	0.0333	ND	94.7	30-120			
Pyrene	0.0179	0.00500	"	0.0333	ND	53.7	35-142			
1-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.2	15-130			
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.2	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0199</i>		<i>"</i>	<i>0.0333</i>		<i>59.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0194</i>		<i>"</i>	<i>0.0333</i>		<i>58.2</i>	<i>40-150</i>			

Matrix Spike Dup (BHJ0820-MSD1)	Source: 2410299-01			Prepared: 10/21/24 Analyzed: 10/22/24						
Acenaphthene	0.0162	0.00500	mg/kg	0.0333	ND	48.7	31-137	11.2	30	
Anthracene	0.0172	0.00500	"	0.0333	ND	51.5	30-120	7.20	30	
Benzo (a) anthracene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	10.1	30	
Benzo (a) pyrene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	9.38	30	
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	10.4	30	
Benzo (k) fluoranthene	0.0156	0.00500	"	0.0333	ND	46.9	30-120	12.2	30	
Chrysene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	11.5	30	
Dibenz (a,h) anthracene	0.0230	0.00500	"	0.0333	ND	69.0	30-120	3.62	30	
Fluoranthene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	6.98	30	
Fluorene	0.0168	0.00500	"	0.0333	ND	50.3	30-120	10.7	30	
Indeno (1,2,3-cd) pyrene	0.0299	0.00500	"	0.0333	ND	89.6	30-120	5.58	30	
Pyrene	0.0163	0.00500	"	0.0333	ND	49.0	35-142	9.15	30	
1-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.3	15-130	8.44	50	
2-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.4	15-130	8.14	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0181</i>		<i>"</i>	<i>0.0333</i>		<i>54.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0182</i>		<i>"</i>	<i>0.0333</i>		<i>54.5</i>	<i>40-150</i>			

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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

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

Batch BHJ0955 - EPA 3050B

Blank (BHJ0955-BLK1)				Prepared: 10/23/24 Analyzed: 10/24/24							
Boron	ND	2.00	mg/L								
LCS (BHJ0955-BS1)				Prepared: 10/23/24 Analyzed: 10/24/24							
Boron	5.00	2.00	mg/L	5.00		100	80-120				
Duplicate (BHJ0955-DUP1)				Source: 2410298-01		Prepared: 10/23/24 Analyzed: 10/24/24					
Boron	0.276	2.00	mg/L		0.307				10.9	20	
Matrix Spike (BHJ0955-MS1)				Source: 2410298-01		Prepared: 10/23/24 Analyzed: 10/24/24					
Boron	5.07	2.00	mg/L	4.96	0.307	96.1	75-125				
Matrix Spike Dup (BHJ0955-MSD1)				Source: 2410298-01		Prepared: 10/23/24 Analyzed: 10/24/24					
Boron	5.21	2.00	mg/L	4.96	0.307	98.9	75-125	2.72		25	

Batch BHJ0956 - EPA 3050B

Blank (BHJ0956-BLK1)				Prepared: 10/23/24 Analyzed: 10/24/24							
Boron	ND	2.00	mg/L								
LCS (BHJ0956-BS1)				Prepared: 10/23/24 Analyzed: 10/24/24							
Boron	5.00	2.00	mg/L	5.00		100	80-120				
Duplicate (BHJ0956-DUP1)				Source: 2410297-24		Prepared: 10/23/24 Analyzed: 10/24/24					
Boron	0.178	2.00	mg/L		0.205				14.2	20	
Matrix Spike (BHJ0956-MS1)				Source: 2410297-24		Prepared: 10/23/24 Analyzed: 10/24/24					
Boron	5.16	2.00	mg/L	5.04	0.205	98.3	75-125				

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0956 - EPA 3050B

Matrix Spike Dup (BHJ0956-MSD1)		Source: 2410297-24			Prepared: 10/23/24 Analyzed: 10/24/24						
Boron	5.39	2.00	mg/L	5.04	0.205	103	75-125	4.43	25		

Batch BHJ0957 - EPA 3050B

Blank (BHJ0957-BLK1)					Prepared: 10/23/24 Analyzed: 10/24/24						
Boron	ND	2.00	mg/L								

LCS (BHJ0957-BS1)					Prepared: 10/23/24 Analyzed: 10/24/24						
Boron	5.06	2.00	mg/L	5.00		101	80-120				

Duplicate (BHJ0957-DUP1)		Source: 2410182-03			Prepared: 10/23/24 Analyzed: 10/24/24						
Boron	0.167	2.00	mg/L		0.209			22.3	20	QR-01	

Matrix Spike (BHJ0957-MS1)		Source: 2410182-03			Prepared: 10/23/24 Analyzed: 10/24/24						
Boron	4.87	2.00	mg/L	4.98	0.209	93.5	75-125				

Matrix Spike Dup (BHJ0957-MSD1)		Source: 2410182-03			Prepared: 10/23/24 Analyzed: 10/24/24						
Boron	4.99	2.00	mg/L	4.98	0.209	96.0	75-125	2.47	25		

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHJ1013 - EPA 3050B

Blank (BHJ1013-BLK1)

Prepared: 10/24/24 Analyzed: 10/25/24

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	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BHJ1013-BS1)

Prepared: 10/24/24 Analyzed: 10/25/24

Arsenic	38.4	0.200	mg/kg wet	41.3	93.0	80-120
Barium	39.8	0.400	"	41.3	96.3	80-120
Cadmium	1.91	0.200	"	2.07	92.7	80-120
Copper	41.8	0.400	"	41.3	101	80-120
Lead	19.3	0.200	"	20.7	93.3	80-120
Nickel	41.5	0.400	"	41.3	100	80-120
Silver	1.96	0.0200	"	2.07	94.8	80-120
Zinc	41.4	0.400	"	41.3	100	80-120
Selenium	3.99	0.260	"	4.13	96.5	80-120

Duplicate (BHJ1013-DUP1)

Source: 2410298-23

Prepared: 10/24/24 Analyzed: 10/25/24

Arsenic	1.21	0.200	mg/kg dry	1.22	0.654	20
Barium	29.3	0.400	"	30.6	4.27	20
Cadmium	0.0722	0.200	"	0.0726	0.632	20
Copper	2.08	0.400	"	2.10	0.963	20
Lead	2.68	0.200	"	3.01	11.6	20
Nickel	2.26	0.400	"	2.35	3.74	20
Silver	0.0163	0.0200	"	0.0190	15.5	20
Zinc	8.49	0.400	"	8.81	3.65	20
Selenium	ND	0.260	"	ND		20

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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ1013 - EPA 3050B

Matrix Spike (BHJ1013-MS1)		Source: 2410298-23			Prepared: 10/24/24		Analyzed: 10/25/24	
Arsenic	38.4	0.200	mg/kg dry	40.0	1.22	93.0	75-125	
Barium	67.0	0.400	"	40.0	30.6	91.0	75-125	
Cadmium	1.90	0.200	"	2.00	0.0726	91.7	75-125	
Copper	34.6	0.400	"	40.0	2.10	81.3	75-125	
Lead	2.62	0.200	"	20.0	3.01	NR	75-125	QM-05
Nickel	34.7	0.400	"	40.0	2.35	81.0	75-125	
Silver	1.83	0.0200	"	2.00	0.0190	90.8	75-125	
Zinc	41.9	0.400	"	40.0	8.81	82.7	75-125	
Selenium	3.90	0.260	"	4.00	ND	97.6	75-125	

Matrix Spike Dup (BHJ1013-MSD1)		Source: 2410298-23			Prepared: 10/24/24		Analyzed: 10/25/24	
Arsenic	39.5	0.200	mg/kg dry	40.3	1.22	95.1	75-125	2.94 25
Barium	68.5	0.400	"	40.3	30.6	94.0	75-125	2.22 25
Cadmium	1.95	0.200	"	2.01	0.0726	93.2	75-125	2.37 25
Copper	35.0	0.400	"	40.3	2.10	81.8	75-125	1.29 25
Lead	21.6	0.200	"	20.1	3.01	92.1	75-125	157 25
Nickel	35.4	0.400	"	40.3	2.35	82.1	75-125	1.94 25
Silver	1.84	0.0200	"	2.01	0.0190	90.6	75-125	0.616 25
Zinc	42.3	0.400	"	40.3	8.81	83.2	75-125	1.08 25
Selenium	3.96	0.260	"	4.03	ND	98.3	75-125	1.57 25

Batch BHJ1014 - EPA 3050B

Blank (BHJ1014-BLK1)					Prepared & Analyzed: 10/24/24	
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	"			
Silver	ND	0.0200	"			
Zinc	ND	0.400	"			
Selenium	ND	0.260	"			

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ1014 - EPA 3050B

LCS (BHJ1014-BS1)

Prepared & Analyzed: 10/24/24

Arsenic	38.6	0.200	mg/kg wet	41.3		93.5	80-120			
Barium	39.3	0.400	"	41.3		95.2	80-120			
Cadmium	1.89	0.200	"	2.07		91.5	80-120			
Copper	41.3	0.400	"	41.3		99.8	80-120			
Lead	19.0	0.200	"	20.7		91.7	80-120			
Nickel	41.0	0.400	"	41.3		99.2	80-120			
Silver	1.91	0.0200	"	2.07		92.7	80-120			
Zinc	40.7	0.400	"	41.3		98.5	80-120			
Selenium	4.30	0.260	"	4.13		104	80-120			

Duplicate (BHJ1014-DUP1)

Source: 2410299-07

Prepared & Analyzed: 10/24/24

Arsenic	2.96	0.200	mg/kg dry		2.93		1.29	20		
Barium	103	0.400	"		96.7		6.56	20		
Cadmium	0.255	0.200	"		0.233		9.05	20		
Copper	6.86	0.400	"		6.61		3.67	20		
Lead	8.67	0.200	"		8.17		5.92	20		
Nickel	6.71	0.400	"		6.55		2.43	20		
Silver	0.0454	0.0200	"		0.0465		2.47	20		
Zinc	24.7	0.400	"		24.3		1.59	20		
Selenium	ND	0.260	"		ND			20		

Matrix Spike (BHJ1014-MS1)

Source: 2410299-07

Prepared & Analyzed: 10/24/24

Arsenic	45.7	0.200	mg/kg dry	47.8	2.93	89.6	75-125			
Barium	137	0.400	"	47.8	96.7	84.0	75-125			
Cadmium	2.40	0.200	"	2.39	0.233	90.7	75-125			
Copper	34.6	0.400	"	47.8	6.61	58.5	75-125			QM-05
Lead	29.3	0.200	"	23.9	8.17	88.5	75-125			
Nickel	34.8	0.400	"	47.8	6.55	59.1	75-125			QM-05
Silver	2.15	0.0200	"	2.39	0.0465	87.8	75-125			
Zinc	54.0	0.400	"	47.8	24.3	62.1	75-125			QM-05
Selenium	4.71	0.260	"	4.78	ND	98.5	75-125			

Summit Scientific

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BHJ1014 - EPA 3050B

Matrix Spike Dup (BHJ1014-MSD1)	Source: 2410299-07			Prepared & Analyzed: 10/24/24							
Arsenic	49.0	0.200	mg/kg dry	49.0	2.93	94.1	75-125	6.95	25		
Barium	147	0.400	"	49.0	96.7	103	75-125	7.20	25		
Cadmium	2.58	0.200	"	2.45	0.233	95.7	75-125	7.02	25		
Copper	36.3	0.400	"	49.0	6.61	60.7	75-125	4.89	25	QM-05	
Lead	32.0	0.200	"	24.5	8.17	97.1	75-125	8.54	25		
Nickel	36.3	0.400	"	49.0	6.55	60.7	75-125	4.18	25	QM-05	
Silver	2.34	0.0200	"	2.45	0.0465	93.8	75-125	8.83	25		
Zinc	56.3	0.400	"	49.0	24.3	65.2	75-125	4.11	25	QM-05	
Selenium	5.06	0.260	"	4.90	ND	103	75-125	7.14	25		

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHJ1011 - 3060A Mod

Blank (BHJ1011-BLK1)

Prepared & Analyzed: 10/24/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHJ1011-BS1)

Prepared & Analyzed: 10/24/24

Chromium, Hexavalent 27.0 0.30 mg/kg wet 25.0 108 80-120

Duplicate (BHJ1011-DUP1)

Source: 2410298-33

Prepared & Analyzed: 10/24/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHJ1011-MS1)

Source: 2410298-33

Prepared & Analyzed: 10/24/24

Chromium, Hexavalent 28.2 0.30 mg/kg dry 25.5 ND 111 75-125

Matrix Spike Dup (BHJ1011-MSD1)

Source: 2410298-33

Prepared & Analyzed: 10/24/24

Chromium, Hexavalent 27.4 0.30 mg/kg dry 25.5 ND 108 75-125 2.93 20

Summit Scientific

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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0857 - General Preparation

Blank (BHJ0857-BLK1)

Prepared: 10/21/24 Analyzed: 10/23/24

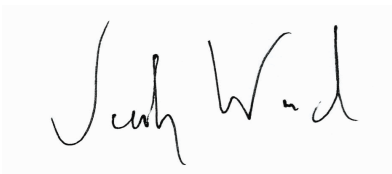
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BHJ0857-BS1)

Prepared: 10/21/24 Analyzed: 10/23/24

Calcium	5.19	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	4.87	0.0500	"	5.00		97.3	70-130			
Sodium	4.74	0.0500	"	5.00		94.9	70-130			

Summit Scientific



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Broomfield CO, 80020

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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

Batch BHJ1105 - General Preparation

Blank (BHJ1105-BLK1)

Prepared: 10/25/24 Analyzed: 10/26/24

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BHJ1105-BS1)

Prepared: 10/25/24 Analyzed: 10/26/24

Chloride	2.98	0.0600	mg/L	3.00		99.2	90-110		
Sulfate	14.8	0.300	"	15.0		98.7	90-110		

Duplicate (BHJ1105-DUP1)

Source: 2410296-09

Prepared: 10/25/24 Analyzed: 10/26/24

Chloride	352	0.0600	mg/L		356			1.08	20
Sulfate	571	0.300	"		572			0.228	20

Matrix Spike (BHJ1105-MS1)

Source: 2410296-09

Prepared: 10/25/24 Analyzed: 10/26/24

Chloride	488	0.0600	mg/L	150	356	87.8	80-120		
Sulfate	1260	0.300	"	750	572	92.3	80-120		

Summit Scientific

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 6855 W. 119th Ave.
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Project: PDC - MDM 33-14 Flowline

Project Number: 32449
 Project Manager: Andy Sagen

Reported:
 10/29/24 11:49

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 BHJ0816 - General Preparation


Duplicate (BHJ0816-DUP1)

Source: 2410299-01

Prepared & Analyzed: 10/21/24

% Solids	82.7		%		82.0			0.895		20	
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Summit Scientific



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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BHJ0870 - General Preparation

Blank (BHJ0870-BLK1)

Prepared: 10/22/24 Analyzed: 10/23/24

Total Dissolved Solids ND 10.0 mg/L

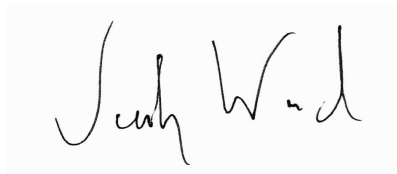
Duplicate (BHJ0870-DUP1)

Source: 2410291-12

Prepared: 10/22/24 Analyzed: 10/23/24

Total Dissolved Solids 1730 10.0 mg/L 1640 5.34 20

Summit Scientific



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Broomfield CO, 80020

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0859 - General Preparation

Blank (BHJ0859-BLK1)

Prepared: 10/21/24 Analyzed: 10/23/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHJ0859-BS1)

Prepared: 10/21/24 Analyzed: 10/23/24

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

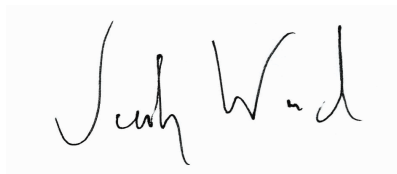
Duplicate (BHJ0859-DUP1)

Source: 2410299-01

Prepared: 10/21/24 Analyzed: 10/23/24

Specific Conductance (EC) 0.388 0.0100 mmhos/cm 0.387 0.258 20

Summit Scientific



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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

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 BHJ0858 - General Preparation

LCS (BHJ0858-BS1)

Prepared: 10/21/24 Analyzed: 10/23/24

pH	9.07	pH Units	9.18	98.8	95-105
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Duplicate (BHJ0858-DUP1)

Source: 2410299-01

Prepared: 10/21/24 Analyzed: 10/23/24

pH	8.15	pH Units	8.17	0.245	20
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Summit Scientific



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

Project: PDC - MDM 33-14 Flowline

Project Number: 32449
Project Manager: Andy Sagen

Reported:
10/29/24 11:49

Notes and Definitions

- QR-01 Analyses are not controlled on RPD values from sample concentrations below the reporting limit. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- 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