

TABLE 1
FORMER ECKHARDT 43-34 WELLHEAD
(WELLHEAD RELEASE)
SOIL ANALYTICAL RESULTS SUMMARY TABLE
CONTAMINANTS OF CONCERN

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH ⁽⁴⁾ (mg/kg)	Arsenic (mg/kg)	Lead (mg/kg)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	0.68	400
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	0.29	14
SS01 @ 6'	3/11/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	1.4	11.0	15.5
SS02 @ 7'	3/11/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	10.5	15.2
SS03 @ 6'	3/11/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	10.6	12.0
SS04 @ 6'	3/11/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	9.83	15.4
SS05 @ 6'	3/11/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	8.71	13.7
SS06 @ 6'	3/11/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	14.2	14.9
SS07 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	3.81	5.76
SS08 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	53	3.53	7.08
SS09 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	3.63	6.34
SS10 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	7.59	9.66
FLR01 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA
FL01-01 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA
FL01-02 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA
FL01-03 @ 4'	3/11/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

4. Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

TMB = Trimethylbenzene

ft. = Feet

 = Source material characterization sample

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard, but within 1.25x background concentration.

BOLD = Analytical result is in exceedance of applicable standard.

NA = Constituent Not Analyzed

TABLE 2
FORMER ECKHARDT 43-34 WELLHEAD
(WELLHEAD RELEASE)
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
SS01 @ 6'	3/11/2022	6 ft. bgs	8.11	2.15	6.69	0.185
SS11 @ 2.5'	3/11/2022	2.5 ft. bgs	7.86	2.84	7.93	0.285
FLR01 @ 4'	3/11/2022	4 ft. bgs	8.01	3.31	9.49	0.394
BKG01 @ 2.5'	3/11/2022	2.5 ft. bgs	NA	NA	14.3	NA
BKG01 @ 4'	3/11/2022	4 ft. bgs	NA	NA	13.6	NA
BKG01 @ 6'	3/11/2022	6 ft. bgs	NA	NA	8.32	NA

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

BOLD = Analytical result is in exceedance of applicable standard but below the background concentration.

NA = Constituent not analyzed

TABLE 3
FORMER ECKHARDT 43-34 WELLHEAD
(WELLHEAD RELEASE)
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS - PAHs

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^(1,2)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^(1,2,3)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS01 @ 6'	3/11/2022	6 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FLR01 @ 4'	3/11/2022	4 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

PAHs = Polycyclic aromatic hydrocarbons

Benzo(a) = Benzantracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

Source material characterization sample

ft. = Feet

bgs = Below ground surface

TABLE 4
FORMER ECKHARDT 43-34 WELLHEAD
(WELLHEAD RELEASE)
SOIL ANALYTICAL RESULTS SUMMARY TABLE
METALS

Sample ID	Date Sampled	Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^(1,2)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^(1,2,3)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SS01 @ 6'	3/11/2022	6 ft. bgs	11.0	49.8	<0.247	<0.30 ⁽⁴⁾	13.4	15.5	15.2	1.13	0.0323	67.4
BKG01 @ 2.5'	3/11/2022	2.5 ft. bgs	3.61	70.0	0.302	<0.30 ⁽⁴⁾	10.9	7.84	9.94	1.18	0.0371	39.9
BKG01 @ 4'	3/11/2022	4 ft. bgs	5.87	148	<0.250	<0.30 ⁽⁴⁾	9.08	7.05	11.0	1.12	0.0341	38.0
BKG01 @ 6'	3/11/2022	6 ft. bgs	4.73	113	<0.237	<0.30 ⁽⁴⁾	7.28	6.36	8.70	0.944	0.0286	33.0

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

4. Compound falls within COGCC Table 915-1 Footnote 9.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

Source material characterization sample

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

BOLD = Analytical result is in exceedance of applicable standard, but within 1.25x background concentration.

TABLE 5
FORMER ECKHARDT 43-34 WELLHEAD
(WELLHEAD RELEASE)
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
GW01	3/11/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.5	NA

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.

2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

TMB = Trimethylbenzene

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

(<) = Analytical result is less than the indicated laboratory reporting limit.

ft. = Feet

AMSL = Above Mean Sea Level

NA = Not applicable

TABLE 6
FORMER ECKHARDT 43-34 WELLHEAD
(WELLHEAD RELEASE)
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS01 @ 6'	3/11/2022	6 ft. bgs	40.354041	-104.528642	1.1	57.8
SS02 @ 7'	3/11/2022	7 ft. bgs	40.354041	-104.528642	1.1	0.6
SS03 @ 6'	3/11/2022	6 ft. bgs	40.354053	-104.528645	1.3	0.0
SS04 @ 6'	3/11/2022	6 ft. bgs	40.354034	-104.528655	1.1	0.0
SS05 @ 6'	3/11/2022	6 ft. bgs	40.354026	-104.528650	1.2	0.0
SS06 @ 6'	3/11/2022	6 ft. bgs	40.354034	-104.528635	1.2	0.0
SS07 @ 4'	3/11/2022	4 ft. bgs	40.354053	-104.528645	1.3	0.0
SS08 @ 4'	3/11/2022	4 ft. bgs	40.354034	-104.528655	1.1	0.0
SS09 @ 4'	3/11/2022	4 ft. bgs	40.354026	-104.528650	1.2	0.0
SS10 @ 4'	3/11/2022	4 ft. bgs	40.354034	-104.528635	1.2	0.0
SS11 @ 2.5'	3/11/2022	2.5 ft. bgs	40.354053	-104.528645	1.3	0.0
WHS01-N @ 0-6"	3/11/2022	0-6 in. bgs	40.354066	-104.528660	1.0	0.0
WHS01-W @ 0-6"	3/11/2022	0-6 in. bgs	40.354003	-104.528717	0.9	0.0
WHS01-S @ 0-6"	3/11/2022	0-6 in. bgs	40.353979	-104.528639	1.1	0.0
WHS01-E @ 0-6"	3/11/2022	0-6 in. bgs	40.354054	-104.528595	0.9	0.0
FLR01 @ 4'	3/11/2022	4 ft. bgs	40.354028	-104.528662	1.0	0.0
FL01-01 @ 4'	3/11/2022	4 ft. bgs	40.352483	-104.527661	1.1	0.0
FL01-02 @ 4'	3/11/2022	4 ft. bgs	40.352416	-104.527603	0.9	0.0
FL01-03 @ 4'	3/11/2022	4 ft. bgs	40.352297	-104.527532	0.9	0.0
GW01 @ 6.5'	3/11/2022	6.5 ft. bgs	40.354045	-104.528637	1.1	NA
BKG01 @ 2.5'	3/11/2022	2.5 ft. bgs	40.354093	-104.528570	1.1	0.0
BKG01 @ 4'	3/11/2022	4 ft. bgs	40.354093	-104.528570	1.1	0.0
BKG01 @ 6'	3/11/2022	6 ft. bgs	40.354093	-104.528570	1.1	0.0

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

NA = Not applicable

SS = Source material characterization sample

Attachment A
Analytical Results
Former Eckhardt 43-34 Wellhead
(Wellhead Release)

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 06, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Eckhardt 43-34 Wellhead

Work Order #2203183

Enclosed are the results of analyses for samples received by Summit Scientific on 03/11/22 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@6'	2203183-01	Soil	03/11/22 08:25	03/11/22 15:45
SS02@7'	2203183-02	Soil	03/11/22 10:05	03/11/22 15:45
SS03@6'	2203183-03	Soil	03/11/22 10:10	03/11/22 15:45
SS04@6'	2203183-04	Soil	03/11/22 10:15	03/11/22 15:45
SS05@6'	2203183-05	Soil	03/11/22 10:20	03/11/22 15:45
SS06@6'	2203183-06	Soil	03/11/22 10:25	03/11/22 15:45
SS07@4'	2203183-07	Soil	03/11/22 12:05	03/11/22 15:45
SS08@4'	2203183-08	Soil	03/11/22 12:10	03/11/22 15:45
SS09@4'	2203183-09	Soil	03/11/22 12:15	03/11/22 15:45
SS10@4'	2203183-10	Soil	03/11/22 12:20	03/11/22 15:45
SS11@2.5'	2203183-11	Soil	03/11/22 12:25	03/11/22 15:45

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.

2203183.1

Summit Scientific

S₂

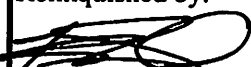

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 2

Client: FDC/TasmanProject Manager: Mark LoughurstAddress: 6855 W 119th AveE-Mail: mark.loughurst@fdc.comCity/State/Zip: Broomfield CO 80020Phone: (303) 487-1228Project Name: Eckhardt 43-34 WellheadSampler Name: Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	GERM (EQU)	TPH (CLOC)	1,2,4,3,5 THB	PAHs *	915-Metals	PA, EC, SAR	Boron		
1	SS01 @ 6'	3/11/22	0825	3			X			X				X	X	X	X	X	X	X	*PAHs = Full Table 915-1
2	SS02 @ 7'		1005										X	X	X						
3	SS03 @ 6'		1010										X	X	X						
4	SS04 @ 6'		1015										X	X	X						
5	SS05 @ 6'		1020										X	X	X						
6	SS06 @ 6'		1025										X	X	X						
7	SS07 @ 4'		1205										X	X	X						
8	SS08 @ 4'		1210										X	X	X						
9	SS09 @ 4'	✓	1215				✓			✓			X	X	X						
10	SS10 @ 4'	✓	1220				✓			✓			X	X	X						
Relinquished by:		Date/Time:		Received by:		Date/Time:		Turn Around Time		(Check)		Notes: PA, EC, & SAR by Saturated paste									
		3/11/22 1545				3/11/22 1545		Same Day <input checked="" type="checkbox"/>		72 hours <input type="checkbox"/>											
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours <input type="checkbox"/>		Standard <input type="checkbox"/>											
Relinquished by:		Date/Time:		Received by:		Date/Time:		48 hours <input type="checkbox"/>		Sample Integrity:											
Relinquished by:		Date/Time:		Received by:		Date/Time:		Temperature Upon Receipt: 4.2		Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No											

2203183.2

Summit Scientific


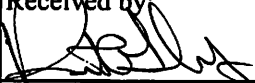
4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 2 of 2

Client: FDC/TasmanProject Manager: Mark LonghurstAddress: 6855 W 119th Ave.E-Mail: mark.longhurst@FDC.comCity/State/Zip: Broomfield CO 80020Phone: (303) 487-1228Project Name: Eckhardt 43-34 WellheadSampler Name: Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	PH	EC	SAR									
1	SS11 @ 2.5'	3/11/22	1225	2			X			X				X	X									
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Relinquished by: 	Date/Time: <u>3/11/22 1545</u>	Received by: 	Date/Time: <u>3/11/22 1545</u>	Turn Around Time (Check)	Notes: <u>PH, EC, & SAR by saturated paste</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <u>X</u> 72 hours —	
				24 hours — Standard —	
				48 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>4.2</u>	
				Samples Intact: <u>Yes</u> No	

S₂

2/2
Sample Receipt Checklist

S2 Work Order# 2203183

Client: Poc Hasman Client Project ID: Eckhardt 43-34 wellhead.

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

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

Temp (°C) 4.2

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples with holding times due within 48 hours sample due within 48 hours present?	-			Sameday
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

[Signature]
Custodian Printed Name or Initials

3.11.22
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS01@6'
2203183-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/12/22	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	1.4	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0397	99.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0422	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0547	137 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.7	85.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS01@6'
2203183-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0241	03/14/22	03/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	48.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.185	0.0100	mg/L	1	BFC0237	03/14/22	03/16/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS01@6'
2203183-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	11.0	0.247	mg/kg dry	1	BFC0245	03/14/22	03/30/22	EPA 6020B
Barium	49.8	0.494	"	"	"	"	"	"
Cadmium	ND	0.247	"	"	"	"	"	"
Copper	13.4	0.494	"	"	"	"	"	"
Lead	15.5	0.247	"	"	"	"	"	"
Nickel	15.2	0.494	"	"	"	"	"	"
Selenium	1.13	0.321	"	"	"	"	"	"
Silver	0.0323	0.0247	"	"	"	"	"	"
Zinc	67.4	0.494	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0387	03/18/22	03/18/22	EPA 7196A	

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

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	59.6	0.0617	mg/L dry	1	BFC0251	03/14/22	03/16/22	EPA 6020B	
Magnesium	51.0	0.0617	"	"	"	"	"	"	
Sodium	291	0.0617	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.69	0.00100	units	1	BFC0362	03/17/22	03/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS01@6'
2203183-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.0	%	1	BFC0287	03/15/22	03/15/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.15	0.0100	mmhos/cm	1	BFC0284	03/15/22	03/15/22	EPA 120.1	

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

Date Sampled: **03/11/22 08:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BFC0283	03/15/22	03/15/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS02@7'
2203183-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0405	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0418	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0423	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.1	88.5 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS02@7'
2203183-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	10.5	0.200	mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	15.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	73.5		%	1	BFE0615	05/26/22	05/27/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS03@6'
2203183-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0392	97.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.9	87.2 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS03@6'
2203183-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	10.6	0.200	mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	12.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.8		%	1	BFE0615	05/26/22	05/27/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS04@6'
2203183-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 10:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0388	97.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	97.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 10:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.0	87.7 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS04@6'
2203183-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 10:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	9.83	0.200		mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	15.4	0.200		"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 10:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	77.2			%	1	BFE0615	05/26/22	05/27/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS05@6'
2203183-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0392	98.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.8	86.2 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS05@6'
2203183-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	8.71	0.200	mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	13.7	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	80.6		%	1	BFE0615	05/26/22	05/27/22	Calculation	

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS06@6'
2203183-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 10:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/12/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 10:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.8	86.8 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS06@6'
2203183-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 10:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	14.2	0.200	mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	14.9	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 10:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	81.5		%	1	BFE0615	05/26/22	05/27/22	Calculation	

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS07@4'
2203183-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/13/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0387	96.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0383	95.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.1	88.6 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS07@4'
2203183-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.81	0.200	mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	5.76	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	85.6		%	1	BFE0615	05/26/22	05/27/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS08@4'
2203183-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/13/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	53	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.9	87.4 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS08@4'
2203183-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.53	0.200	mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	7.08	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	88.7		%	1	BFE0615	05/26/22	05/27/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS09@4'
2203183-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/13/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0389	97.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0389	97.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.1	88.5 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS09@4'
2203183-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	3.63	0.200		mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	6.34	0.200		"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	84.5			%	1	BFE0615	05/26/22	05/27/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS10@4'
2203183-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0230	03/11/22	03/13/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0386	96.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	95.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0231	03/11/22	03/12/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.2	89.5 %	30-150		"	"	"	"	

Total Metals by EPA 6020B

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS10@4'
2203183-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	7.59	0.200	mg/kg dry	1	BFF0101	06/03/22	06/04/22	EPA 6020B	
Lead	9.66	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.2		%	1	BFE0615	05/26/22	05/27/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS11@2.5'
2203183-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/11/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.285	0.0100	mg/L	1	BFC0237	03/14/22	03/16/22	EPA 6020B	

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

Date Sampled: **03/11/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	57.4	0.0588	mg/L dry	1	BFC0251	03/14/22	03/16/22	EPA 6020B	
Magnesium	55.9	0.0588	"	"	"	"	"	"	
Sodium	352	0.0588	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/11/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.93	0.00100	units	1	BFC0362	03/17/22	03/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.0		%	1	BFC0287	03/15/22	03/15/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/11/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.84	0.0100	mmhos/cm	1	BFC0284	03/15/22	03/15/22	EPA 120.1	

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

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

SS11@2.5'
2203183-11 (Soil)

Summit Scientific

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

Date Sampled: **03/11/22 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.86			pH Units	1	BFC0283	03/15/22	03/15/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0230 - EPA 5030 Soil MS

Blank (BFC0230-BLK1)

Prepared: 03/11/22 Analyzed: 03/12/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		98.1	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

LCS (BFC0230-BS1)

Prepared: 03/11/22 Analyzed: 03/12/22

Benzene	0.0589	0.0020	mg/kg	0.0750		78.5	70-130			
Toluene	0.0622	0.0050	"	0.0750		83.0	70-130			
Ethylbenzene	0.0606	0.0050	"	0.0750		80.8	70-130			
m,p-Xylene	0.129	0.010	"	0.150		86.1	70-130			
o-Xylene	0.0627	0.0050	"	0.0750		83.6	70-130			
1,2,4-Trimethylbenzene	0.0670	0.0050	"	0.0750		89.3	70-130			
1,3,5-Trimethylbenzene	0.0656	0.0050	"	0.0750		87.4	70-130			
Naphthalene	0.0553	0.0038	"	0.0750		73.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		97.9	50-150			

Matrix Spike (BFC0230-MS1)

Source: 2203181-01

Prepared: 03/11/22 Analyzed: 03/12/22

Benzene	0.0584	0.0020	mg/kg	0.0750	ND	77.8	70-130			
Toluene	0.0641	0.0050	"	0.0750	ND	85.4	70-130			
Ethylbenzene	0.0658	0.0050	"	0.0750	ND	87.8	70-130			
m,p-Xylene	0.140	0.010	"	0.150	ND	93.2	70-130			
o-Xylene	0.0669	0.0050	"	0.0750	ND	89.2	70-130			
1,2,4-Trimethylbenzene	0.0730	0.0050	"	0.0750	ND	97.3	70-130			
1,3,5-Trimethylbenzene	0.0711	0.0050	"	0.0750	ND	94.8	70-130			
Naphthalene	0.0692	0.0038	"	0.0750	ND	92.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0415		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFC0230 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0230-MSD1)		Source: 2203181-01			Prepared: 03/11/22 Analyzed: 03/12/22					
Benzene	0.0602	0.0020	mg/kg	0.0750	ND	80.3	70-130	3.14	30	
Toluene	0.0658	0.0050	"	0.0750	ND	87.8	70-130	2.68	30	
Ethylbenzene	0.0674	0.0050	"	0.0750	ND	89.9	70-130	2.39	30	
m,p-Xylene	0.141	0.010	"	0.150	ND	94.3	70-130	1.24	30	
o-Xylene	0.0688	0.0050	"	0.0750	ND	91.8	70-130	2.92	30	
1,2,4-Trimethylbenzene	0.0752	0.0050	"	0.0750	ND	100	70-130	3.00	30	
1,3,5-Trimethylbenzene	0.0728	0.0050	"	0.0750	ND	97.0	70-130	2.34	30	
Naphthalene	0.0695	0.0038	"	0.0750	ND	92.7	70-130	0.562	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0231 - EPA 3550A

Blank (BFC0231-BLK1)

Prepared: 03/11/22 Analyzed: 03/12/22

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

LCS (BFC0231-BS1)

Prepared: 03/11/22 Analyzed: 03/12/22

C10-C28 (DRO)	547	50	mg/kg	500	109	70-130
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Matrix Spike (BFC0231-MS1)

Source: 2203181-01

Prepared: 03/11/22 Analyzed: 03/12/22

C10-C28 (DRO)	434	50	mg/kg	500	23.5	82.1	70-130
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Matrix Spike Dup (BFC0231-MSD1)

Source: 2203181-01

Prepared: 03/11/22 Analyzed: 03/12/22

C10-C28 (DRO)	428	50	mg/kg	500	23.5	80.9	70-130	1.39	20
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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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0241 - EPA 5030 Soil MS

Blank (BFC0241-BLK1)

Prepared & Analyzed: 03/14/22

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0217	"	0.0333	65.0	40-150
Surrogate: Fluoranthene-d10	0.0214	"	0.0333	64.1	40-150

LCS (BFC0241-BS1)

Prepared & Analyzed: 03/14/22

Acenaphthene	0.0208	0.00500	mg/kg	0.0333	62.3	31-137
Anthracene	0.0207	0.00500	"	0.0333	62.0	30-120
Benzo (a) anthracene	0.0194	0.00500	"	0.0333	58.2	30-120
Benzo (a) pyrene	0.0207	0.00500	"	0.0333	62.1	30-120
Benzo (b) fluoranthene	0.0191	0.00500	"	0.0333	57.4	30-120
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	71.7	30-120
Chrysene	0.0222	0.00500	"	0.0333	66.5	30-120
Dibenz (a,h) anthracene	0.0259	0.00500	"	0.0333	77.7	30-120
Fluoranthene	0.0224	0.00500	"	0.0333	67.2	30-120
Fluorene	0.0215	0.00500	"	0.0333	64.5	30-120
Indeno (1,2,3-cd) pyrene	0.0319	0.00500	"	0.0333	95.7	30-120
Pyrene	0.0225	0.00500	"	0.0333	67.6	35-142
1-Methylnaphthalene	0.0189	0.00500	"	0.0333	56.6	35-142
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	65.7	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0215	"	0.0333	64.6	40-150
Surrogate: Fluoranthene-d10	0.0232	"	0.0333	69.6	40-150

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0241 - EPA 5030 Soil MS

Matrix Spike (BFC0241-MS1)

Source: 2203182-01

Prepared: 03/14/22 Analyzed: 03/15/22

Acenaphthene	0.0303	0.00500	mg/kg	0.0333	ND	90.9	31-137			
Anthracene	0.0927	0.00500	"	0.0333	ND	278	30-120			QM-07
Benzo (a) anthracene	0.0108	0.00500	"	0.0333	ND	32.3	30-120			
Benzo (a) pyrene	0.00989	0.00500	"	0.0333	ND	29.7	30-120			QM-07
Benzo (b) fluoranthene	0.00752	0.00500	"	0.0333	ND	22.5	30-120			QM-07
Benzo (k) fluoranthene	0.00706	0.00500	"	0.0333	ND	21.2	30-120			QM-07
Chrysene	0.0185	0.00500	"	0.0333	0.00884	29.1	30-120			QM-07
Dibenz (a,h) anthracene	0.00849	0.00500	"	0.0333	ND	25.5	30-120			QM-07
Fluoranthene	0.0134	0.00500	"	0.0333	ND	40.1	30-120			
Fluorene	0.0658	0.00500	"	0.0333	0.0553	31.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0128	0.00500	"	0.0333	ND	38.5	30-120			
Pyrene	0.0121	0.00500	"	0.0333	ND	36.3	35-142			
1-Methylnaphthalene	0.187	0.00500	"	0.0333	0.310	NR	15-130			QM-07
2-Methylnaphthalene	0.503	0.00500	"	0.0333	0.552	NR	15-130			QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0124		"	0.0333		37.2	40-150			S-02
Surrogate: Fluoranthene-d10	0.0114		"	0.0333		34.2	40-150			S-02

Matrix Spike Dup (BFC0241-MSD1)

Source: 2203182-01

Prepared: 03/14/22 Analyzed: 03/15/22

Acenaphthene	0.0149	0.00500	mg/kg	0.0333	ND	44.8	31-137	67.9	30	QM-07
Anthracene	0.0517	0.00500	"	0.0333	ND	155	30-120	56.8	30	QM-07
Benzo (a) anthracene	0.00802	0.00500	"	0.0333	ND	24.1	30-120	29.1	30	QM-07
Benzo (a) pyrene	0.00719	0.00500	"	0.0333	ND	21.6	30-120	31.5	30	QM-07
Benzo (b) fluoranthene	0.00525	0.00500	"	0.0333	ND	15.7	30-120	35.5	30	QM-07
Benzo (k) fluoranthene	0.00449	0.00500	"	0.0333	ND	13.5	30-120	44.5	30	QM-07
Chrysene	0.0145	0.00500	"	0.0333	0.00884	16.9	30-120	24.6	30	QM-07
Dibenz (a,h) anthracene	0.00536	0.00500	"	0.0333	ND	16.1	30-120	45.3	30	QM-07
Fluoranthene	0.00726	0.00500	"	0.0333	ND	21.8	30-120	59.1	30	QM-07
Fluorene	0.0316	0.00500	"	0.0333	0.0553	NR	30-120	70.1	30	QM-07
Indeno (1,2,3-cd) pyrene	0.00802	0.00500	"	0.0333	ND	24.1	30-120	46.2	30	QM-07
Pyrene	0.00841	0.00500	"	0.0333	ND	25.2	35-142	35.9	30	QM-07
1-Methylnaphthalene	0.0941	0.00500	"	0.0333	0.310	NR	15-130	65.9	50	QM-07
2-Methylnaphthalene	0.200	0.00500	"	0.0333	0.552	NR	15-130	86.2	50	QM-07
Surrogate: 2-Methylnaphthalene-d10	0.00818		"	0.0333		24.5	40-150			S-02
Surrogate: Fluoranthene-d10	0.00883		"	0.0333		26.5	40-150			S-02

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

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

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

Batch BFC0237 - EPA 3050B

Blank (BFC0237-BLK1)

Prepared: 03/14/22 Analyzed: 03/16/22

Boron ND 0.0100 mg/L

LCS (BFC0237-BS1)

Prepared: 03/14/22 Analyzed: 03/16/22

Boron 4.94 0.0100 mg/L 5.00 98.8 80-120

Duplicate (BFC0237-DUP1)

Source: 2203113-01

Prepared: 03/14/22 Analyzed: 03/16/22

Boron 0.322 0.0100 mg/L 0.344 6.59 20

Matrix Spike (BFC0237-MS1)

Source: 2203113-01

Prepared: 03/14/22 Analyzed: 03/16/22

Boron 5.04 0.0100 mg/L 5.00 0.344 94.0 75-125

Matrix Spike Dup (BFC0237-MSD1)

Source: 2203113-01

Prepared: 03/14/22 Analyzed: 03/16/22

Boron 5.53 0.0100 mg/L 5.00 0.344 104 75-125 9.19 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0245 - EPA 3050B

Blank (BFC0245-BLK1)

Prepared: 03/14/22 Analyzed: 03/30/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFC0245-BS1)

Prepared: 03/14/22 Analyzed: 03/30/22

Arsenic	37.5	0.200	mg/kg wet	40.0	93.8	80-120
Barium	36.7	0.400	"	40.0	91.8	80-120
Cadmium	1.90	0.200	"	2.00	95.1	80-120
Copper	35.2	0.400	"	40.0	88.1	80-120
Lead	17.8	0.200	"	20.0	89.2	80-120
Nickel	33.4	0.400	"	40.0	83.6	80-120
Selenium	3.58	0.260	"	4.00	89.5	80-120
Silver	1.80	0.0200	"	2.00	89.9	80-120
Zinc	39.0	0.400	"	40.0	97.4	80-120

Duplicate (BFC0245-DUP1)

Source: 2203183-01

Prepared: 03/14/22 Analyzed: 03/31/22

Arsenic	11.0	0.247	mg/kg dry	11.0	0.610	20	QR-03
Barium	125	0.494	"	49.8	85.8	20	
Cadmium	0.0605	0.247	"	0.0501	18.7	20	
Copper	15.6	0.494	"	13.4	14.8	20	
Lead	14.1	0.247	"	15.5	9.07	20	
Nickel	15.3	0.494	"	15.2	0.357	20	
Selenium	1.16	0.321	"	1.13	2.95	20	
Silver	0.0274	0.0247	"	0.0323	16.3	20	
Zinc	71.5	0.494	"	67.4	5.85	20	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0245 - EPA 3050B

Matrix Spike (BFC0245-MS1)

Source: 2203183-01

Prepared: 03/14/22 Analyzed: 03/31/22

Arsenic	56.8	0.247	mg/kg dry	49.4	11.0	92.7	75-125			
Barium	80.1	0.494	"	49.4	49.8	61.3	75-125			QM-05
Cadmium	2.24	0.247	"	2.47	0.0501	88.5	75-125			
Copper	55.7	0.494	"	49.4	13.4	85.6	75-125			
Lead	31.3	0.247	"	24.7	15.5	64.2	75-125			QM-05
Nickel	54.0	0.494	"	49.4	15.2	78.5	75-125			
Selenium	4.98	0.321	"	4.94	1.13	78.0	75-125			
Silver	2.06	0.0247	"	2.47	0.0323	82.1	75-125			
Zinc	118	0.494	"	49.4	67.4	103	75-125			

Matrix Spike Dup (BFC0245-MSD1)

Source: 2203183-01

Prepared: 03/14/22 Analyzed: 03/31/22

Arsenic	53.3	0.247	mg/kg dry	49.4	11.0	85.7	75-125	6.35	25	
Barium	124	0.494	"	49.4	49.8	150	75-125	43.0	25	QM-05
Cadmium	2.11	0.247	"	2.47	0.0501	83.2	75-125	5.99	25	
Copper	54.8	0.494	"	49.4	13.4	83.9	75-125	1.53	25	
Lead	34.3	0.247	"	24.7	15.5	76.1	75-125	8.95	25	
Nickel	53.6	0.494	"	49.4	15.2	77.7	75-125	0.723	25	
Selenium	5.08	0.321	"	4.94	1.13	80.0	75-125	2.02	25	
Silver	1.95	0.0247	"	2.47	0.0323	77.6	75-125	5.56	25	
Zinc	114	0.494	"	49.4	67.4	94.1	75-125	3.79	25	

Batch BFF0101 - EPA 3050B

Blank (BFF0101-BLK1)

Prepared: 06/03/22 Analyzed: 06/04/22

Arsenic	ND	0.200	mg/kg wet
Lead	ND	0.200	"

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFF0101 - EPA 3050B

LCS (BFF0101-BS1)

Prepared: 06/03/22 Analyzed: 06/04/22

Arsenic	42.6	0.200	mg/kg wet	40.0		107	80-120			
Lead	20.1	0.200	"	20.0		101	80-120			

Duplicate (BFF0101-DUP1)

Source: 2203183-02

Prepared: 06/03/22 Analyzed: 06/04/22

Arsenic	9.65	0.200	mg/kg dry		10.5			8.02	20	
Lead	13.7	0.200	"		15.2			10.1	20	

Matrix Spike (BFF0101-MS1)

Source: 2203183-02

Prepared: 06/03/22 Analyzed: 06/04/22

Arsenic	66.5	0.200	mg/kg dry	54.4	10.5	103	75-125			
Lead	40.5	0.200	"	27.2	15.2	93.1	75-125			

Matrix Spike Dup (BFF0101-MSD1)

Source: 2203183-02

Prepared: 06/03/22 Analyzed: 06/04/22

Arsenic	66.3	0.200	mg/kg dry	54.4	10.5	103	75-125	0.255	25	
Lead	40.6	0.200	"	27.2	15.2	93.4	75-125	0.219	25	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFC0387 - 3060A Mod

Blank (BFC0387-BLK1)

Prepared & Analyzed: 03/18/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFC0387-BS1)

Prepared & Analyzed: 03/18/22

Chromium, Hexavalent 25.1 0.30 mg/kg wet 25.0 100 80-120

Duplicate (BFC0387-DUP1)

Source: 2203183-01

Prepared & Analyzed: 03/18/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFC0387-MS1)

Source: 2203183-01

Prepared & Analyzed: 03/18/22

Chromium, Hexavalent 34.8 0.30 mg/kg dry 30.9 ND 113 75-125

Matrix Spike Dup (BFC0387-MSD1)

Source: 2203183-01

Prepared & Analyzed: 03/18/22

Chromium, Hexavalent 33.8 0.30 mg/kg dry 30.9 ND 109 75-125 3.06 20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

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

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

Batch BFC0251 - General Preparation

Blank (BFC0251-BLK1)

Prepared: 03/14/22 Analyzed: 03/16/22

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

LCS (BFC0251-BS1)

Prepared: 03/14/22 Analyzed: 03/16/22

Calcium	5.21	0.0500	mg/L wet	5.00	104	70-130
Magnesium	5.47	0.0500	"	5.00	109	70-130
Sodium	5.17	0.0500	"	5.00	103	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

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

Summit Scientific

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

Batch BFC0287 - General Preparation

Duplicate (BFC0287-DUP1)		Source: 2203021-01			Prepared & Analyzed: 03/15/22					
% Solids	85.5		%		85.3			0.253	20	

Batch BFE0615 - General Preparation

Duplicate (BFE0615-DUP1)		Source: 2202356-03			Prepared: 05/26/22 Analyzed: 05/27/22					
% Solids	99.9		%		99.6			0.300	20	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

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

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

Batch BFC0284 - General Preparation

Blank (BFC0284-BLK1)

Prepared & Analyzed: 03/15/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFC0284-BS1)

Prepared & Analyzed: 03/15/22

Specific Conductance (EC) 0.148 0.0100 mmhos/cm 0.150 98.7 95-105

Duplicate (BFC0284-DUP1)

Source: 2201167-06

Prepared & Analyzed: 03/15/22

Specific Conductance (EC) 0.494 0.0100 mmhos/cm 0.504 1.96 20

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

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

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

Batch BFC0283 - General Preparation

LCS (BFC0283-BS1)

Prepared & Analyzed: 03/15/22

pH	9.07	pH Units	9.18	98.8	95-105
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Duplicate (BFC0283-DUP1)

Source: 2201167-06

Prepared & Analyzed: 03/15/22

pH	6.89	pH Units	6.74	2.20	20
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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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
06/06/22 12:14

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 14, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Eckhardt 43-34 Wellhead

Work Order #2203184

Enclosed are the results of analyses for samples received by Summit Scientific on 03/11/22 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/22 15:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2203184-01	Water	03/11/22 10:00	03/11/22 15:45

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.

2203184

Summit Scientific

4653 Table Mountain Drive ♦ Golden, Colorado 80403

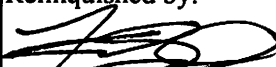
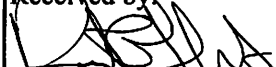
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: PDC/TasmanProject Manager: Mark LonghurstAddress: 6855 W 119th AveE-Mail: mark.longhurst@PDCF.comCity/State/Zip: Broomfield CO 80020Phone: (303) 487-1228Project Name: Eckhardt 43-34 wellheadSampler Name: Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions					
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	1	2	3	4	5	6	7	8		9	10			
1	CW01	3/11/22	1000	2			X		X					X	X											
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										

Relinquished by: 	Date/Time: <u>3/11/22 1545</u>	Received by: 	Date/Time: <u>3/11/22 1545</u>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	72 hours <input type="checkbox"/> Standard <input type="checkbox"/>
				24 hours <input type="checkbox"/>	
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>4.2</u>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

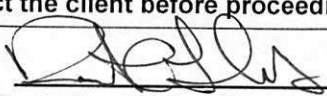
S2 Work Order# 2203184Client: Pro Hasman Client Project ID: Eckhardt 43-34 wellhead.Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>4.2</u>
-----------	------------

Thermometer ID: G86A9201901378

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

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


 Custodian Printed Name or Initials

3.11.22
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/22 15:04

GW01
2203184-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFC0154	03/11/22	03/13/22	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: **03/11/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		67.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.3 %	21-167		"	"	"	"	

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/22 15:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0154 - EPA 5030 Water MS

Blank (BFC0154-BLK1)

Prepared: 03/11/22 Analyzed: 03/13/22

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	12.1		"	13.3		90.8	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

LCS (BFC0154-BS1)

Prepared: 03/11/22 Analyzed: 03/13/22

Benzene	20.1	1.0	ug/l	25.0		80.4	51-132			
Toluene	20.0	1.0	"	25.0		80.2	51-138			
Ethylbenzene	23.3	1.0	"	25.0		93.3	58-146			
m,p-Xylene	48.2	2.0	"	50.0		96.4	57-144			
o-Xylene	21.9	1.0	"	25.0		87.4	53-146			
Naphthalene	22.8	1.0	"	25.0		91.1	70-130			
1,2,4-Trimethylbenzene	22.0	1.0	"	25.0		87.8	70-130			
1,3,5-Trimethylbenzene	22.6	1.0	"	25.0		90.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	11.5		"	13.3		86.3	23-173			
Surrogate: Toluene-d8	12.6		"	13.3		94.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.6	21-167			

Matrix Spike (BFC0154-MS1)

Source: 2203129-01

Prepared: 03/11/22 Analyzed: 03/13/22

Benzene	19.6	1.0	ug/l	25.0	ND	78.4	34-141			
Toluene	20.5	1.0	"	25.0	ND	82.0	27-151			
Ethylbenzene	24.3	1.0	"	25.0	ND	97.1	29-160			
m,p-Xylene	50.2	2.0	"	50.0	ND	100	20-166			
o-Xylene	22.7	1.0	"	25.0	ND	90.7	33-159			
Naphthalene	21.0	1.0	"	25.0	ND	84.0	70-130			
1,2,4-Trimethylbenzene	23.6	1.0	"	25.0	ND	94.5	70-130			
1,3,5-Trimethylbenzene	24.0	1.0	"	25.0	ND	95.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	8.58		"	13.3		64.4	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		96.3	20-170			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.8	21-167			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/14/22 15:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0154 - EPA 5030 Water MS

Matrix Spike Dup (BFC0154-MSD1)	Source: 2203129-01			Prepared: 03/11/22 Analyzed: 03/13/22						
Benzene	20.3	1.0	ug/l	25.0	ND	81.1	34-141	3.41	30	
Toluene	20.8	1.0	"	25.0	ND	83.4	27-151	1.74	30	
Ethylbenzene	24.3	1.0	"	25.0	ND	97.3	29-160	0.206	30	
m,p-Xylene	49.6	2.0	"	50.0	ND	99.1	20-166	1.18	30	
o-Xylene	22.8	1.0	"	25.0	ND	91.1	33-159	0.440	30	
Naphthalene	22.9	1.0	"	25.0	ND	91.5	70-130	8.57	30	
1,2,4-Trimethylbenzene	22.9	1.0	"	25.0	ND	91.6	70-130	3.05	30	
1,3,5-Trimethylbenzene	23.6	1.0	"	25.0	ND	94.6	70-130	1.43	30	
Surrogate: 1,2-Dichloroethane-d4	10.8		"	13.3		81.4	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		96.2	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		97.0	21-167			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/14/22 15:04

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 25, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Eckhardt 43-34 Wellhead

Work Order #2203190

Enclosed are the results of analyses for samples received by Summit Scientific on 03/11/22 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", on a light blue background.

Muri Premer

Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@2.5'	2203190-01	Soil	03/11/22 08:35	03/11/22 15:45
BKG01@4'	2203190-02	Soil	03/11/22 08:40	03/11/22 15:45
BKG01@6'	2203190-03	Soil	03/11/22 08:45	03/11/22 15:45
FLR01@4'	2203190-04	Soil	03/11/22 10:45	03/11/22 15:45
FL01-01@4'	2203190-05	Soil	03/11/22 11:42	03/11/22 15:45
FL01-02@4'	2203190-06	Soil	03/11/22 13:50	03/11/22 15:45
FL01-03@4'	2203190-07	Soil	03/11/22 13:55	03/11/22 15:45

Summit Scientific

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

Summit Scientific

2203190

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: PDC (Tasman)

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: Mark.Longhurst@PDC.com

City/State/Zip: Broomfield CO 80020

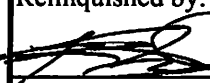
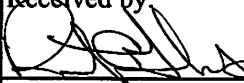
Phone: (303) 487-1228

Project Name: Eckhardt 43-SF wellhead

Sampler Name: Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	GREEN (200)	TPH (20-236)	1,2,4,5,6,8 TAB	PAHs	95-Metals	PH, EC, SAR	Boron		
1	BKG01 @ 2.5'	3/1/22	0835	3																*PAHs = Full Table 915-1	
2	BKG01 @ 4'		0840	3																	
3	BKG01 @ 6'		0845	3																	
4	FL01 @ 4'		1045	3									X	X	X	X		X	X		
5	FL01-01 @ 4'		1142	2									X	X	X						
6	FL01-02 @ 4'		1350	2									X	X	X						
7	FL01-03 @ 4'		1355	2									X	X	X						
8	SERIAL FL01 @ 4'																				
9																					
10																					

Relinquished by: 	Date/Time: 3/1/22 1545	Received by: 	Date/Time: 3/1/22 1545	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard _____ 48 hours _____ Sample Integrity: Temperature Upon Receipt: 4.2 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: PH, EC, & SAR by saturated paste
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2203190Client: Pc/TasmanClient Project ID: Eckhardt 43-34 wellhead.Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

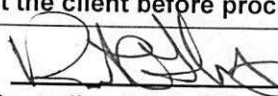
Matrix (check all that apply): ☐ Air☒ Soil/Solid☐ Water☐ Other: _____

(Describe)

Temp (°C)	<u>4.2</u>
-----------	------------

Thermometer ID: G86A9201901378

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

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

 Custodian Printed Name or Initials

3.11.22
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

BKG01@2.5'
2203190-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.61	0.229	mg/kg dry	1	BFC0331	03/17/22	03/22/22	EPA 6020B	
Barium	70.0	0.458	"	"	"	"	"	"	
Cadmium	0.302	0.229	"	"	"	"	"	"	
Copper	10.9	0.458	"	"	"	"	"	"	
Lead	7.84	0.229	"	"	"	"	"	"	
Nickel	9.94	0.458	"	"	"	"	"	"	
Selenium	1.18	0.298	"	"	"	"	"	"	
Silver	0.0371	0.0229	"	"	"	"	"	"	
Zinc	39.9	0.458	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/11/22 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0126	04/06/22	04/06/22	EPA 7196A	

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

Date Sampled: **03/11/22 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	351	0.0572	mg/L dry	1	BFD0168	04/08/22	04/12/22	EPA 6020B	
Magnesium	411	0.0572	"	"	"	"	"	"	
Sodium	1660	0.0572	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/11/22 08:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	14.3	0.00100	units	1	BFD0248	04/13/22	04/13/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

BKG01@2.5'
2203190-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 08:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	87.4			%	1	BFD0063	04/04/22	04/04/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

BKG01@4'
2203190-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.87	0.250	mg/kg dry	1	BFC0331	03/17/22	03/22/22	EPA 6020B	
Barium	148	0.501	"	"	"	"	"	"	
Cadmium	ND	0.250	"	"	"	"	"	"	
Copper	9.08	0.501	"	"	"	"	"	"	
Lead	7.05	0.250	"	"	"	"	"	"	
Nickel	11.0	0.501	"	"	"	"	"	"	
Selenium	1.12	0.325	"	"	"	"	"	"	
Silver	0.0341	0.0250	"	"	"	"	"	"	
Zinc	38.0	0.501	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/11/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0126	04/06/22	04/06/22	EPA 7196A	

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

Date Sampled: **03/11/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	170	0.0626	mg/L dry	1	BFD0168	04/08/22	04/12/22	EPA 6020B	
Magnesium	233	0.0626	"	"	"	"	"	"	
Sodium	1160	0.0626	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/11/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.6	0.00100	units	1	BFD0248	04/13/22	04/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

BKG01@4'
2203190-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 08:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	79.9			%	1	BFD0063	04/04/22	04/04/22	Calculation	

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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

BKG01@6'
2203190-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/11/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.73	0.237	mg/kg dry	1	BFC0331	03/17/22	03/22/22	EPA 6020B	
Barium	113	0.475	"	"	"	"	"	"	
Cadmium	ND	0.237	"	"	"	"	"	"	
Copper	7.28	0.475	"	"	"	"	"	"	
Lead	6.36	0.237	"	"	"	"	"	"	
Nickel	8.70	0.475	"	"	"	"	"	"	
Selenium	0.944	0.308	"	"	"	"	"	"	
Silver	0.0286	0.0237	"	"	"	"	"	"	
Zinc	33.0	0.475	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/11/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0126	04/06/22	04/06/22	EPA 7196A	

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

Date Sampled: **03/11/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	62.5	0.0593	mg/L dry	1	BFD0168	04/08/22	04/12/22	EPA 6020B	
Magnesium	61.6	0.0593	"	"	"	"	"	"	
Sodium	387	0.0593	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/11/22 08:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	8.32	0.00100	units	1	BFD0248	04/13/22	04/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

BKG01@6'
2203190-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 08:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	84.3			%	1	BFD0063	04/04/22	04/04/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

FLR01@4'
2203190-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0238	03/14/22	03/15/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0239	03/14/22	03/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		88.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

FLR01@4'
2203190-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0275	03/15/22	03/16/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		84.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.394	0.0100	mg/L	1	BFC0273	03/25/22	03/31/22	EPA 6020B	

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

Date Sampled: **03/11/22 10:45**

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

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

FLR01@4'
2203190-04 (Soil)

Summit Scientific

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

Calcium	80.8	0.0578	mg/L dry	1	BFC0285	03/15/22	03/17/22	EPA 6020B
Magnesium	63.9	0.0578	"	"	"	"	"	"
Sodium	470	0.0578	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.49	0.00100	units	1	BFC0399	03/18/22	03/18/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.5		%	1	BFC0343	03/17/22	03/17/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.31	0.0100	mmhos/cm	1	BFC0326	03/16/22	03/16/22	EPA 120.1	

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

Date Sampled: **03/11/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.01		pH Units	1	BFC0325	03/16/22	03/16/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

FL01-01@4'
2203190-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0238	03/14/22	03/15/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0239	03/14/22	03/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		92.7 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

FL01-02@4'
2203190-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0238	03/14/22	03/15/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0239	03/14/22	03/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.4 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

FL01-03@4'
2203190-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0238	03/14/22	03/15/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0239	03/14/22	03/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/11/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.4 %	30-150		"	"	"	"	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0238 - EPA 5030 Soil MS

Blank (BFC0238-BLK1)

Prepared: 03/14/22 Analyzed: 03/15/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.0	50-150			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.5	50-150			

LCS (BFC0238-BS1)

Prepared: 03/14/22 Analyzed: 03/15/22

Benzene	0.0573	0.0020	mg/kg	0.0750		76.4	70-130			
Toluene	0.0616	0.0050	"	0.0750		82.1	70-130			
Ethylbenzene	0.0586	0.0050	"	0.0750		78.2	70-130			
m,p-Xylene	0.125	0.010	"	0.150		83.2	70-130			
o-Xylene	0.0602	0.0050	"	0.0750		80.2	70-130			
1,2,4-Trimethylbenzene	0.0662	0.0050	"	0.0750		88.2	70-130			
1,3,5-Trimethylbenzene	0.0631	0.0050	"	0.0750		84.1	70-130			
Naphthalene	0.0604	0.0038	"	0.0750		80.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	50-150			

Matrix Spike (BFC0238-MS1)

Source: 2203187-01

Prepared: 03/14/22 Analyzed: 03/15/22

Benzene	0.0589	0.0020	mg/kg	0.0750	ND	78.5	70-130			
Toluene	0.0647	0.0050	"	0.0750	ND	86.3	70-130			
Ethylbenzene	0.0634	0.0050	"	0.0750	ND	84.6	70-130			
m,p-Xylene	0.135	0.010	"	0.150	ND	90.3	70-130			
o-Xylene	0.0661	0.0050	"	0.0750	ND	88.1	70-130			
1,2,4-Trimethylbenzene	0.0726	0.0050	"	0.0750	ND	96.8	70-130			
1,3,5-Trimethylbenzene	0.0696	0.0050	"	0.0750	ND	92.8	70-130			
Naphthalene	0.0736	0.0038	"	0.0750	ND	98.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0400		98.8	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BFC0238 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0238-MSD1)	Source: 2203187-01			Prepared: 03/14/22 Analyzed: 03/15/22						
Benzene	0.0603	0.0020	mg/kg	0.0750	ND	80.4	70-130	2.37	30	
Toluene	0.0647	0.0050	"	0.0750	ND	86.3	70-130	0.0464	30	
Ethylbenzene	0.0662	0.0050	"	0.0750	ND	88.3	70-130	4.35	30	
m,p-Xylene	0.142	0.010	"	0.150	ND	94.6	70-130	4.65	30	
o-Xylene	0.0683	0.0050	"	0.0750	ND	91.0	70-130	3.31	30	
1,2,4-Trimethylbenzene	0.0751	0.0050	"	0.0750	ND	100	70-130	3.33	30	
1,3,5-Trimethylbenzene	0.0715	0.0050	"	0.0750	ND	95.3	70-130	2.68	30	
Naphthalene	0.0848	0.0038	"	0.0750	ND	113	70-130	14.1	30	
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0400		96.8	50-150			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	50-150			

Summit Scientific

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



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFC0239 - EPA 3550A

Blank (BFC0239-BLK1)

Prepared: 03/14/22 Analyzed: 03/15/22

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

LCS (BFC0239-BS1)

Prepared: 03/14/22 Analyzed: 03/15/22

C10-C28 (DRO)	465	50	mg/kg	500	93.0	70-130				
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Matrix Spike (BFC0239-MS1)

Source: 2203187-01

Prepared: 03/14/22 Analyzed: 03/15/22

C10-C28 (DRO)	460	50	mg/kg	500	19.5	88.1	70-130			
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Matrix Spike Dup (BFC0239-MSD1)

Source: 2203187-01

Prepared: 03/14/22 Analyzed: 03/15/22

C10-C28 (DRO)	508	50	mg/kg	500	19.5	97.6	70-130	9.81	20	
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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.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0275 - EPA 5030 Soil MS

Blank (BFC0275-BLK1)

Prepared: 03/15/22 Analyzed: 03/16/22

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333		89.9		40-150			
Surrogate: Fluoranthene-d10	0.0245		"	0.0333		73.6		40-150			

LCS (BFC0275-BS1)

Prepared: 03/15/22 Analyzed: 03/16/22

Acenaphthene	0.0203	0.00500	mg/kg	0.0333		60.8		31-137			
Anthracene	0.0221	0.00500	"	0.0333		66.4		30-120			
Benzo (a) anthracene	0.0227	0.00500	"	0.0333		68.1		30-120			
Benzo (a) pyrene	0.0184	0.00500	"	0.0333		55.2		30-120			
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333		57.5		30-120			
Benzo (k) fluoranthene	0.0192	0.00500	"	0.0333		57.7		30-120			
Chrysene	0.0224	0.00500	"	0.0333		67.2		30-120			
Dibenz (a,h) anthracene	0.0145	0.00500	"	0.0333		43.6		30-120			
Fluoranthene	0.0231	0.00500	"	0.0333		69.4		30-120			
Fluorene	0.0207	0.00500	"	0.0333		62.1		30-120			
Indeno (1,2,3-cd) pyrene	0.0108	0.00500	"	0.0333		32.5		30-120			
Pyrene	0.0227	0.00500	"	0.0333		68.1		35-142			
1-Methylnaphthalene	0.0265	0.00500	"	0.0333		79.4		35-142			
2-Methylnaphthalene	0.0260	0.00500	"	0.0333		77.9		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0293		"	0.0333		87.9		40-150			
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		78.8		40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFC0275 - EPA 5030 Soil MS

Matrix Spike (BFC0275-MS1)

Source: 2203212-01

Prepared: 03/15/22 Analyzed: 03/16/22

Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	57.1	31-137		
Anthracene	0.0206	0.00500	"	0.0333	ND	61.8	30-120		
Benzo (a) anthracene	0.0212	0.00500	"	0.0333	ND	63.6	30-120		
Benzo (a) pyrene	0.0171	0.00500	"	0.0333	ND	51.4	30-120		
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.7	30-120		
Benzo (k) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.6	30-120		
Chrysene	0.0206	0.00500	"	0.0333	ND	61.9	30-120		
Dibenz (a,h) anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120		
Fluoranthene	0.0213	0.00500	"	0.0333	ND	64.0	30-120		
Fluorene	0.0193	0.00500	"	0.0333	ND	57.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0170	0.00500	"	0.0333	ND	51.1	30-120		
Pyrene	0.0213	0.00500	"	0.0333	ND	63.9	35-142		
1-Methylnaphthalene	0.0232	0.00500	"	0.0333	ND	69.6	15-130		
2-Methylnaphthalene	0.0249	0.00500	"	0.0333	ND	74.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0270		"	0.0333		81.0	40-150		
Surrogate: Fluoranthene-d10	0.0247		"	0.0333		74.1	40-150		

Matrix Spike Dup (BFC0275-MSD1)

Source: 2203212-01

Prepared: 03/15/22 Analyzed: 03/16/22

Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.4	31-137	2.91	30
Anthracene	0.0191	0.00500	"	0.0333	ND	57.3	30-120	7.47	30
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	9.39	30
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	9.66	30
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	7.53	30
Benzo (k) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.5	30-120	10.3	30
Chrysene	0.0185	0.00500	"	0.0333	ND	55.5	30-120	11.0	30
Dibenz (a,h) anthracene	0.0119	0.00500	"	0.0333	ND	35.7	30-120	20.2	30
Fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120	9.34	30
Fluorene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	6.54	30
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	8.42	30
Pyrene	0.0191	0.00500	"	0.0333	ND	57.4	35-142	10.8	30
1-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130	6.81	50
2-Methylnaphthalene	0.0208	0.00500	"	0.0333	ND	62.3	15-130	18.0	50
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.2	40-150		
Surrogate: Fluoranthene-d10	0.0228		"	0.0333		68.5	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

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

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

Batch BFC0273 - EPA 3050B

Blank (BFC0273-BLK1)

Prepared: 03/25/22 Analyzed: 03/31/22

Boron ND 0.0100 mg/L

LCS (BFC0273-BS1)

Prepared: 03/25/22 Analyzed: 03/31/22

Boron 4.69 0.0100 mg/L 5.00 93.8 80-120

Duplicate (BFC0273-DUP1)

Source: 2203162-04

Prepared: 03/25/22 Analyzed: 03/31/22

Boron 0.609 0.0100 mg/L 0.587 3.65 20

Matrix Spike (BFC0273-MS1)

Source: 2203162-04

Prepared: 03/25/22 Analyzed: 03/31/22

Boron 5.42 0.0100 mg/L 5.00 0.587 96.6 75-125

Matrix Spike Dup (BFC0273-MSD1)

Source: 2203162-04

Prepared: 03/25/22 Analyzed: 03/31/22

Boron 5.71 0.0100 mg/L 5.00 0.587 102 75-125 5.24 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0331 - EPA 3050B

Blank (BFC0331-BLK1)

Prepared: 03/17/22 Analyzed: 03/22/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFC0331-BS1)

Prepared: 03/17/22 Analyzed: 03/22/22

Arsenic	38.0	0.200	mg/kg wet	40.0	95.1	80-120
Barium	33.9	0.400	"	40.0	84.7	80-120
Cadmium	1.64	0.200	"	2.00	82.1	80-120
Copper	35.2	0.400	"	40.0	87.9	80-120
Lead	16.1	0.200	"	20.0	80.3	80-120
Nickel	34.8	0.400	"	40.0	87.0	80-120
Selenium	3.62	0.260	"	4.00	90.6	80-120
Silver	1.60	0.0200	"	2.00	80.1	80-120
Zinc	39.6	0.400	"	40.0	99.0	80-120

Duplicate (BFC0331-DUP1)

Source: 2203021-01

Prepared: 03/17/22 Analyzed: 03/22/22

Arsenic	3.48	0.234	mg/kg dry	3.43	1.43	20
Barium	75.5	0.469	"	74.4	1.50	20
Cadmium	0.103	0.234	"	0.102	0.936	20
Copper	7.13	0.469	"	6.94	2.61	20
Lead	5.74	0.234	"	5.69	0.827	20
Nickel	7.37	0.469	"	7.14	3.15	20
Selenium	0.864	0.305	"	0.829	4.18	20
Silver	0.0348	0.0234	"	0.0343	1.44	20
Zinc	28.9	0.469	"	28.6	1.16	20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0331 - EPA 3050B

Matrix Spike (BFC0331-MS1)		Source: 2203021-01			Prepared: 03/17/22 Analyzed: 03/22/22					
Arsenic	51.7	0.234	mg/kg dry	46.9	3.43	103	75-125			
Barium	107	0.469	"	46.9	74.4	70.2	75-125			QR-03
Cadmium	2.14	0.234	"	2.34	0.102	87.1	75-125			
Copper	49.3	0.469	"	46.9	6.94	90.3	75-125			
Lead	24.2	0.234	"	23.4	5.69	78.7	75-125			
Nickel	49.8	0.469	"	46.9	7.14	91.1	75-125			
Selenium	4.80	0.305	"	4.69	0.829	84.6	75-125			
Silver	1.98	0.0234	"	2.34	0.0343	82.8	75-125			
Zinc	76.7	0.469	"	46.9	28.6	103	75-125			

Matrix Spike Dup (BFC0331-MSD1)		Source: 2203021-01			Prepared: 03/17/22 Analyzed: 03/22/22					
Arsenic	52.1	0.234	mg/kg dry	46.9	3.43	104	75-125	0.651	25	
Barium	109	0.469	"	46.9	74.4	74.8	75-125	1.96	25	QR-03
Cadmium	2.19	0.234	"	2.34	0.102	89.1	75-125	2.11	25	
Copper	49.8	0.469	"	46.9	6.94	91.3	75-125	0.959	25	
Lead	24.1	0.234	"	23.4	5.69	78.4	75-125	0.320	25	
Nickel	51.0	0.469	"	46.9	7.14	93.6	75-125	2.33	25	
Selenium	4.82	0.305	"	4.69	0.829	85.2	75-125	0.504	25	
Silver	2.02	0.0234	"	2.34	0.0343	84.7	75-125	2.26	25	
Zinc	77.3	0.469	"	46.9	28.6	104	75-125	0.804	25	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFD0126 - 3060A Mod

Blank (BFD0126-BLK1)

Prepared & Analyzed: 04/06/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFD0126-BS1)

Prepared & Analyzed: 04/06/22

Chromium, Hexavalent 26.1 0.30 mg/kg wet 25.0 104 80-120

Duplicate (BFD0126-DUP1)

Source: 2202084-05

Prepared & Analyzed: 04/06/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFD0126-MS1)

Source: 2202084-05

Prepared & Analyzed: 04/06/22

Chromium, Hexavalent 30.4 0.30 mg/kg dry 28.4 ND 107 75-125

Matrix Spike Dup (BFD0126-MSD1)

Source: 2202084-05

Prepared & Analyzed: 04/06/22

Chromium, Hexavalent 32.6 0.30 mg/kg dry 28.4 ND 115 75-125 6.85 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

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

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

Batch BFC0285 - General Preparation

Blank (BFC0285-BLK1)

Prepared: 03/15/22 Analyzed: 03/17/22

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

LCS (BFC0285-BS1)

Prepared: 03/15/22 Analyzed: 03/17/22

Calcium	5.71	0.0500	mg/L wet	5.00	114	70-130
Magnesium	5.76	0.0500	"	5.00	115	70-130
Sodium	5.33	0.0500	"	5.00	107	70-130

Batch BFD0168 - General Preparation

Blank (BFD0168-BLK1)

Prepared: 04/08/22 Analyzed: 04/12/22

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

LCS (BFD0168-BS1)

Prepared: 04/08/22 Analyzed: 04/12/22

Calcium	5.24	0.0500	mg/L wet	5.00	105	70-130
Magnesium	5.20	0.0500	"	5.00	104	70-130
Sodium	5.06	0.0500	"	5.00	101	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

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

Summit Scientific

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

Batch BFC0343 - General Preparation

Duplicate (BFC0343-DUP1) **Source: 2202213-05** Prepared & Analyzed: 03/17/22

% Solids	94.1	%		94.1		0.0248	20
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Batch BFD0063 - General Preparation

Duplicate (BFD0063-DUP1) **Source: 2203190-01** Prepared & Analyzed: 04/04/22

% Solids	87.7	%		87.4		0.398	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

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

Summit Scientific

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

Batch BFC0326 - General Preparation

Blank (BFC0326-BLK1)

Prepared & Analyzed: 03/16/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFC0326-BS1)

Prepared & Analyzed: 03/16/22

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

Duplicate (BFC0326-DUP1)

Source: 2201269-01

Prepared & Analyzed: 03/16/22

Specific Conductance (EC) 3.73 0.0100 mmhos/cm 3.70 0.700 20

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

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

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

Batch BFC0325 - General Preparation

LCS (BFC0325-BS1)

Prepared & Analyzed: 03/16/22

pH	9.11	pH Units	9.18	99.2	95-105
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Duplicate (BFC0325-DUP1)

Source: 2201269-01

Prepared & Analyzed: 03/16/22

pH	8.25	pH Units	8.25	0.00	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Eckhardt 43-34 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/25/22 14:23

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery 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