

TABLE 1  
FORMER WELLS RANCH 42-30 WELLHEAD  
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 <sup>(4)</sup> (mg/kg)	Chrysene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic <sup>(5)</sup> (mg/kg)	Barium <sup>(6)</sup> (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Selenium <sup>(7)</sup> (mg/kg)
Residential SSL <sup>(1,2)</sup>			1.2	490	5.8	58	30	27	2	500	110	180	18	24	0.68	15,000	71	3,100	400	390
Protection of Groundwater SSL <sup>(1,2,3)</sup>			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	9	1.3	0.006	0.019	0.29	82	0.38	46	14	0.26
WH01 @ 6'	1/26/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	0.0165	0.00899	0.00683	0.00627	9.60	231	0.434	156	528	1.54
FLR01 @ 4'	1/26/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	NA	NA	NA	NA	NA	NA
FL01-02 @ 4'	1/26/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS01 @ 7'	2/28/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	240	0.00998	<0.00500	<0.00500	<0.00500	1.08	25.4	<0.200	2.57	5.40	0.438
SS03 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	1.21	57.7	<0.200	2.07	2.84	0.558
SS05 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	1.93	147	<0.200	3.42	4.90	0.781
SS07 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	1.74	92.8	<0.200	5.35	12.0	0.801
SS09 @ 6'	2/28/2022	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	1.25	69.6	<0.200	2.81	3.85	0.649
BKG01 @ 4'	1/26/2022	4 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.56	33.6	<0.211	2.23	2.80	0.364
BKG01 @ 6'	1/26/2022	6 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.31	38.4	<0.211	2.10	2.65	0.380
BKG02 @ 2.5'	2/28/2022	2.5 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.32	79.2	<0.215	3.56	4.59	0.508
BKG02 @ 6'	2/28/2022	6 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.39	84.0	<0.211	2.88	4.20	0.496
BKG02 @ 7'	2/28/2022	7 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.68	85.4	<0.216	4.25	5.10	0.620
BKG03 @ 2.5'	2/28/2022	2.5 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.43	67.8	<0.215	3.70	4.49	0.541
BKG03 @ 6'	2/28/2022	6 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.35	80.2	<0.212	2.86	4.10	0.492
BKG03 @ 7'	2/28/2022	7 ft. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.83	96.1	<0.213	3.65	4.84	0.607

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.
5. The highest arsenic concentration (SS05 - 1.93 mg/kg) recorded within the unsaturated interval (6 and 7 ft. bgs), is within 1.25x background concentrations recorded in background soil borings BKG01 - BKG03 (2.5 - 7 ft. bgs).
6. The highest barium concentration (SS07 - 92.8 mg/kg), aside from SS05, recorded within the unsaturated interval (6 and 7 ft. bgs), is below the background concentration recorded in background soil boring BKG03 and within 1.25x background concentrations recorded in background soil borings BKG02 (2.5 - 7 ft. bgs).
7. The highest selenium concentration (SS09 - 0.649 mg/kg), aside from SS05 and SS07, recorded within the unsaturated interval (6 and 7 ft. bgs), is within 1.25x background concentrations recorded in background soil borings BKG02 and BKG03 (2.5 - 7 ft. bgs).

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 extactable petroleum hydrocarbons - oil range organics

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

TMB = Trimethylbenzene

= Source material characterization sample

= Sample material excavated and transported off site for disposal

ft. = Feet

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard and above 1.25x background concentration.

**BOLD** = Analytical result is in exceedance of applicable standard and below 1.25x background concentration.

NA = Constituent Not Analyzed

**TABLE 2**  
**FORMER WELLS RANCH 42-30 WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
<b>Soil Suitability for Reclamation Standard <sup>(1)</sup></b>			<b>6-8.3</b>	<b>&lt;4</b>	<b>&lt;6</b>	<b>2</b>
WH01 @ 6'	1/26/2022	6 ft. bgs	<b>8.73</b>	0.0739	0.0764	0.627
FLR01 @ 4'	1/26/2022	4 ft. bgs	<b>8.81</b>	0.0423	0.0748	0.236
SS02 @ 2.5'	2/28/2022	2.5 ft. bgs	7.91	1.35	0.0515	0.0557
BKG02 @ 2.5'	2/28/2022	2.5 ft. bgs	8.02	NA	NA	NA
BKG02 @ 6'	2/28/2022	6 ft. bgs	<b>8.52</b>	NA	NA	NA
BKG02 @ 7'	2/28/2022	7 ft. bgs	<b>8.51</b>	NA	NA	NA
BKG03 @ 2.5'	2/28/2022	2.5 ft. bgs	8.13	NA	NA	NA
BKG03 @ 6'	2/28/2022	6 ft. bgs	<b>8.75</b>	NA	NA	NA
BKG03 @ 7'	2/28/2022	7 ft. bgs	<b>8.75</b>	NA	NA	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

  = Source material characterization sample

  = Sample material excavated and transported off site for disposal

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of applicable standard.

**BOLD** = Analytical result is in exceedance of applicable standard, but below background concentrations.

## Attachment A

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 27, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Wells Ranch 42-30 Wellhead

Work Order #2202365

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/22 14:30. 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: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@7'	2202365-01	Soil	02/28/22 10:15	02/28/22 14:30
SS02@2.5'	2202365-02	Soil	02/28/22 10:18	02/28/22 14:30
SS03@6'	2202365-03	Soil	02/28/22 10:20	02/28/22 14:30
SS05@6'	2202365-05	Soil	02/28/22 10:26	02/28/22 14:30
SS07@6'	2202365-07	Soil	02/28/22 10:34	02/28/22 14:30
SS09@6'	2202365-09	Soil	02/28/22 10:40	02/28/22 14:30
BKG02@2.5'	2202365-10	Soil	02/28/22 11:20	02/28/22 14:30
BKG02@6'	2202365-11	Soil	02/28/22 11:25	02/28/22 14:30
BKG02@7'	2202365-12	Soil	02/28/22 11:35	02/28/22 14:30
BKG03@2.5'	2202365-13	Soil	02/28/22 11:50	02/28/22 14:30
BKG03@6'	2202365-14	Soil	02/28/22 12:00	02/28/22 14:30
BKG03@7'	2202365-15	Soil	02/28/22 12:05	02/28/22 14:30

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

S<sub>2</sub>

7702365.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

City/State/Zip: Broomfield/ CO/ 80020

Phone: 303-487-1228

Project Name: Wells Ranch 42-30 Wellhead

Sampler Name: David Vigil

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBs (1,2,4)&(1,3,5)	PAH - 915	Metals - 915				
1	SS01 @ 7'	2/28/22	1015	3			X			X				X	X			X	X				pH, EC, SAR by saturated paste
2	SS02 @ 2.5'		1018	3			X			X				X	X			X	X				SAR, EC, pH, B
3	SS03 @ 6'		1020	3			X			X				X	X			X	X				
4	SS04 @ 2.5'		1024	3			X			X				X	X			X	X				
5	SS05 @ 6'		1026	3			X			X				X	X			X	X				
6	SS06 @ 2.5'		1030	3			X			X													
7	SS07 @ 6'		1034	3			X			X				X	X			X	X				
8	SS08 @ 2.5'		1038	3			X			X													
9	SS09 @ 6'		1040	3			X			X				X	X			X	X				
10																							

Relinquished by: <i>David Vigil</i>	Date/Time: 2/28/22 1430	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check)	Notes: PAHs: - chrysene - pyrene - 1-M - 2-M
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: <i>[Signature]</i>	Date/Time: 2/28/22 1430	Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 9.1 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	



$S_2$ 

2702365.2

303-277-9310

Page 2 of 2

Project Manager: Mark Longhurst

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E-Mail: [mark.longhurst@PDCE.com](mailto:mark.longhurst@PDCE.com)

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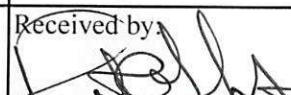
Phone: 303-487-1228

Project Name: Wells Ranch 42-30 Wellhead

Sampler Name: David Vigil

Project Number:

					Preservative				Matrix				Analysis Requested							Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	TMBS (1,2,4)&(1,3,5)	PAH - 915	Metals - 915		pH, EC, SAR by saturated paste	
1	BKG0202.5'	2/28/22	1120	1			X			X										X		
2	BKG0206'		1125	1			X			X										X		
3	BKG0207'		1135	1			X			X										X		
4	BKG0302.5'		1150	1			X			X										X		
5	BKG0306'		1200	1			X			X										X		
6	BKG0307'	✓	1205	1			X			X										X		
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 2/28/22 1430	Received by: Tasman's Lock Box 	Date/Time: 2/28/22 1430	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 9.1 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S<sub>2</sub>

2/2

## Sample Receipt Checklist

S2 Work Order#

7707365

Client: Ppc/Tasman Client Project ID: Well 5 Ranch 42-30 wellheadShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	9.1
-----------	-----

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? 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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? 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):

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

[Signature]  
Custodian Printed Name or Initials

2-28-22  
Date/Time





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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS01@7'**  
**2202365-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.3 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.8 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	<b>240</b>	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.0 %	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: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS01@7'**  
**2202365-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Chrysene</b>	<b>0.00998</b>	0.00500	mg/kg	1	BFC0078	03/04/22	03/06/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>1.08</b>	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
<b>Barium</b>	<b>25.4</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.57</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>5.40</b>	0.200	"	"	"	"	"	"	
<b>Selenium</b>	<b>0.438</b>	0.260	"	"	"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>96.2</b>		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS02@2.5'**  
**2202365-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0557	0.0100	mg/L	1	BFC0439	03/21/22	03/29/22	EPA 6020B	

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

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.5	0.0560	mg/L dry	1	BFC0433	03/21/22	04/01/22	EPA 6020B	
Magnesium	1.28	0.0560	"	"	"	"	"	"	
Sodium	0.785	0.0560	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0515	0.00100	units	1	BFD0035	04/02/22	04/04/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.3		%	1	BFC0438	03/21/22	03/21/22	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.35	0.0100	mmhos/cm	1	BFC0017	03/01/22	03/01/22	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: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS02@2.5'**  
**2202365-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/28/22 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>7.91</b>			pH Units	1	BFC0020	03/01/22	03/01/22	EPA 9045D	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS03@6'**  
**2202365-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.8 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.5 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.0 %	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: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS03@6'**  
**2202365-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.21	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	57.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.07	0.400	"	"	"	"	"	"	
Lead	2.84	0.200	"	"	"	"	"	"	
Selenium	0.558	0.260	"	"	"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS05@6'**  
**2202365-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.3 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		82.2 %	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: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS05@6'**  
**2202365-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.93	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	147	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.42	0.400	"	"	"	"	"	"	
Lead	4.90	0.200	"	"	"	"	"	"	
Selenium	0.781	0.260	"	"	"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS07@6'**  
**2202365-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		83.7 %	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: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS07@6'**  
**2202365-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.74	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	92.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.35	0.400	"	"	"	"	"	"	
Lead	12.0	0.200	"	"	"	"	"	"	
Selenium	0.801	0.260	"	"	"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS09@6'**  
**2202365-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0036	03/02/22	03/03/22	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: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.8 %	70-130		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0037	03/02/22	03/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		76.8 %	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: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**SS09@6'**  
**2202365-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chrysene	ND	0.00500	mg/kg	1	BFC0078	03/04/22	03/07/22	EPA 8270D SIM	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		58.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		45.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	<b>1.25</b>	0.200	mg/kg dry	1	BFD0369	04/19/22	04/20/22	EPA 6020B	
Barium	<b>69.6</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	<b>2.81</b>	0.400	"	"	"	"	"	"	
Lead	<b>3.85</b>	0.200	"	"	"	"	"	"	
Selenium	<b>0.649</b>	0.260	"	"	"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 10:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	<b>92.8</b>		%	1	BFD0382	04/19/22	04/19/22	Calculation	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**BKG02@2.5'**  
**2202365-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.32	0.215	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	79.2	0.430	"	"	"	"	"	"	
Cadmium	ND	0.215	"	"	"	"	"	"	
Copper	3.56	0.430	"	"	"	"	"	"	
Lead	4.59	0.215	"	"	"	"	"	"	
Nickel	3.61	0.430	"	"	"	"	"	"	
Selenium	0.508	0.279	"	"	"	"	"	"	
Silver	0.0254	0.0215	"	"	"	"	"	"	
Zinc	14.2	0.430	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.1		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.02		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**BKG02@6'**  
**2202365-11 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.39</b>	0.211	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
<b>Barium</b>	<b>84.0</b>	0.421	"	"	"	"	"	"	
Cadmium	ND	0.211	"	"	"	"	"	"	
<b>Copper</b>	<b>2.88</b>	0.421	"	"	"	"	"	"	
<b>Lead</b>	<b>4.20</b>	0.211	"	"	"	"	"	"	
<b>Nickel</b>	<b>3.44</b>	0.421	"	"	"	"	"	"	
<b>Selenium</b>	<b>0.496</b>	0.274	"	"	"	"	"	"	
Silver	ND	0.0211	"	"	"	"	"	"	
<b>Zinc</b>	<b>12.8</b>	0.421	"	"	"	"	"	"	

#### Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

#### Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>% Solids</b>	<b>94.9</b>		%	1	BFC0438	03/21/22	03/21/22	Calculation	

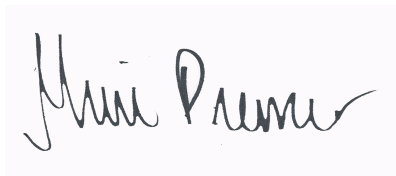
#### Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **02/28/22 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>pH</b>	<b>8.52</b>		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**BKG02@7'**  
**2202365-12 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.68	0.216	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	85.4	0.432	"	"	"	"	"	"	
Cadmium	ND	0.216	"	"	"	"	"	"	
Copper	4.25	0.432	"	"	"	"	"	"	
Lead	5.10	0.216	"	"	"	"	"	"	
Nickel	4.93	0.432	"	"	"	"	"	"	
Selenium	0.620	0.281	"	"	"	"	"	"	
Silver	0.0313	0.0216	"	"	"	"	"	"	
Zinc	17.3	0.432	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.7		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.51		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**BKG03@2.5'**  
**2202365-13 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.43	0.215	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	67.8	0.431	"	"	"	"	"	"	
Cadmium	ND	0.215	"	"	"	"	"	"	
Copper	3.70	0.431	"	"	"	"	"	"	
Lead	4.49	0.215	"	"	"	"	"	"	
Nickel	3.81	0.431	"	"	"	"	"	"	
Selenium	0.541	0.280	"	"	"	"	"	"	
Silver	0.0217	0.0215	"	"	"	"	"	"	
Zinc	14.4	0.431	"	"	"	"	"	"	

#### Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

#### Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	92.9		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.13		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**BKG03@6'**  
**2202365-14 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.35	0.212	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	80.2	0.425	"	"	"	"	"	"	
Cadmium	ND	0.212	"	"	"	"	"	"	
Copper	2.86	0.425	"	"	"	"	"	"	
Lead	4.10	0.212	"	"	"	"	"	"	
Nickel	3.65	0.425	"	"	"	"	"	"	
Selenium	0.492	0.276	"	"	"	"	"	"	
Silver	0.0249	0.0212	"	"	"	"	"	"	
Zinc	13.4	0.425	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.2		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.75		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**BKG03@7'**  
**2202365-15 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.83	0.213	mg/kg dry	1	BFC0436	03/21/22	03/22/22	EPA 6020B	
Barium	96.1	0.426	"	"	"	"	"	"	
Cadmium	ND	0.213	"	"	"	"	"	"	
Copper	3.65	0.426	"	"	"	"	"	"	
Lead	4.84	0.213	"	"	"	"	"	"	
Nickel	4.98	0.426	"	"	"	"	"	"	
Selenium	0.607	0.277	"	"	"	"	"	"	
Silver	0.0294	0.0213	"	"	"	"	"	"	
Zinc	17.8	0.426	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0531	03/23/22	03/23/22	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	94.0		%	1	BFC0438	03/21/22	03/21/22	Calculation	

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

Date Sampled: **02/28/22 12:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.75		pH Units	1	BFD0530	04/25/22	04/25/22	EPA 9045D	I-04

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

## 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 BFC0036 - EPA 5030 Soil MS

##### Blank (BFC0036-BLK1)

Prepared: 03/02/22 Analyzed: 03/03/22

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	0.0391		"	0.0400		97.6	70-130			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	70-130			

##### LCS (BFC0036-BS1)

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0655	0.0020	mg/kg	0.0750		87.4	70-130			
Toluene	0.0670	0.0050	"	0.0750		89.3	70-130			
Ethylbenzene	0.0636	0.0050	"	0.0750		84.8	70-130			
m,p-Xylene	0.132	0.010	"	0.150		88.2	70-130			
o-Xylene	0.0689	0.0050	"	0.0750		91.8	70-130			
1,2,4-Trimethylbenzene	0.0707	0.0050	"	0.0750		94.3	70-130			
1,3,5-Trimethylbenzene	0.0677	0.0050	"	0.0750		90.3	70-130			
Naphthalene	0.0756	0.0038	"	0.0750		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	70-130			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	70-130			

##### Matrix Spike (BFC0036-MS1)

Source: 2202363-03

Prepared: 03/02/22 Analyzed: 03/03/22

Benzene	0.0642	0.0020	mg/kg	0.0750	ND	85.6	70-130			
Toluene	0.0692	0.0050	"	0.0750	ND	92.2	70-130			
Ethylbenzene	0.0682	0.0050	"	0.0750	ND	90.9	70-130			
m,p-Xylene	0.140	0.010	"	0.150	ND	93.6	70-130			
o-Xylene	0.0739	0.0050	"	0.0750	ND	98.5	70-130			
1,2,4-Trimethylbenzene	0.0761	0.0050	"	0.0750	ND	101	70-130			
1,3,5-Trimethylbenzene	0.0737	0.0050	"	0.0750	ND	98.2	70-130			
Naphthalene	0.0902	0.0038	"	0.0750	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	70-130			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	70-130			

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0036 - EPA 5030 Soil MS**

Matrix Spike Dup (BFC0036-MSD1)	Source: 2202363-03			Prepared: 03/02/22 Analyzed: 03/03/22						
Benzene	0.0622	0.0020	mg/kg	0.0750	ND	83.0	70-130	3.09	30	
Toluene	0.0664	0.0050	"	0.0750	ND	88.5	70-130	4.16	30	
Ethylbenzene	0.0617	0.0050	"	0.0750	ND	82.3	70-130	9.93	30	
m,p-Xylene	0.127	0.010	"	0.150	ND	84.5	70-130	10.2	30	
o-Xylene	0.0661	0.0050	"	0.0750	ND	88.1	70-130	11.2	30	
1,2,4-Trimethylbenzene	0.0699	0.0050	"	0.0750	ND	93.2	70-130	8.46	30	
1,3,5-Trimethylbenzene	0.0668	0.0050	"	0.0750	ND	89.0	70-130	9.87	30	
Naphthalene	0.0875	0.0038	"	0.0750	ND	117	70-130	2.97	30	
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	70-130			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		97.9	70-130			

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0037 - EPA 3550A**

**Blank (BFC0037-BLK1)**

Prepared: 03/02/22 Analyzed: 03/03/22

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

**LCS (BFC0037-BS1)**

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	435	50	mg/kg	500	87.0	70-130
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**Matrix Spike (BFC0037-MS1)**

Source: 2202363-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	480	50	mg/kg	500	117	72.6	70-130
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**Matrix Spike Dup (BFC0037-MSD1)**

Source: 2202363-01

Prepared: 03/02/22 Analyzed: 03/03/22

C10-C28 (DRO)	475	50	mg/kg	500	117	71.6	70-130	1.03	20
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Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0078 - EPA 5030 Soil MS**

**Blank (BFC0078-BLK1)**

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

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	0.0241		"	0.0333		72.3		40-150			
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.9		40-150			

**LCS (BFC0078-BS1)**

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

Acenaphthene	0.0221	0.00500	mg/kg	0.0333		66.3		31-137			
Anthracene	0.0225	0.00500	"	0.0333		67.6		30-120			
Benzo (a) anthracene	0.0254	0.00500	"	0.0333		76.2		30-120			
Benzo (a) pyrene	0.0187	0.00500	"	0.0333		56.1		30-120			
Benzo (b) fluoranthene	0.0188	0.00500	"	0.0333		56.3		30-120			
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333		53.7		30-120			
Chrysene	0.0244	0.00500	"	0.0333		73.3		30-120			
Dibenz (a,h) anthracene	0.0231	0.00500	"	0.0333		69.4		30-120			
Fluoranthene	0.0211	0.00500	"	0.0333		63.2		30-120			
Fluorene	0.0225	0.00500	"	0.0333		67.4		30-120			
Indeno (1,2,3-cd) pyrene	0.0152	0.00500	"	0.0333		45.5		30-120			
Pyrene	0.0261	0.00500	"	0.0333		78.2		35-142			
1-Methylnaphthalene	0.0233	0.00500	"	0.0333		69.9		35-142			
2-Methylnaphthalene	0.0224	0.00500	"	0.0333		67.2		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.0		40-150			
Surrogate: Fluoranthene-d10	0.0220		"	0.0333		65.9		40-150			

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

## 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 BFC0078 - EPA 5030 Soil MS

##### Matrix Spike (BFC0078-MS1)

Source: 2202284-01

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

Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.5	31-137				
Anthracene	0.0229	0.00500	"	0.0333	ND	68.6	30-120				
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.7	30-120				
Benzo (a) pyrene	0.0189	0.00500	"	0.0333	ND	56.7	30-120				
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.4	30-120				
Benzo (k) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.9	30-120				
Chrysene	0.0247	0.00500	"	0.0333	ND	74.2	30-120				
Dibenz (a,h) anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120				
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120				
Fluorene	0.0221	0.00500	"	0.0333	ND	66.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0104	0.00500	"	0.0333	ND	31.1	30-120				
Pyrene	0.0260	0.00500	"	0.0333	ND	78.0	35-142				
1-Methylnaphthalene	0.0230	0.00500	"	0.0333	ND	69.1	15-130				
2-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.1	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		69.8	40-150				
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.9	40-150				

##### Matrix Spike Dup (BFC0078-MSD1)

Source: 2202284-01

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

Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137	11.1	30		
Anthracene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	8.47	30		
Benzo (a) anthracene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	1.63	30		
Benzo (a) pyrene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	1.42	30		
Benzo (b) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	2.79	30		
Benzo (k) fluoranthene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	1.78	30		
Chrysene	0.0237	0.00500	"	0.0333	ND	71.2	30-120	4.08	30		
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120	9.37	30		
Fluoranthene	0.0234	0.00500	"	0.0333	ND	70.3	30-120	3.29	30		
Fluorene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	8.55	30		
Indeno (1,2,3-cd) pyrene	0.0105	0.00500	"	0.0333	ND	31.5	30-120	1.27	30		
Pyrene	0.0274	0.00500	"	0.0333	ND	82.2	35-142	5.19	30		
1-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.0	15-130	4.66	50		
2-Methylnaphthalene	0.0206	0.00500	"	0.0333	ND	61.8	15-130	0.350	50		
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		66.9	40-150				
Surrogate: Fluoranthene-d10	0.0222		"	0.0333		66.7	40-150				

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0439 - EPA 3050B**

**Blank (BFC0439-BLK1)**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron ND 0.0100 mg/L

**LCS (BFC0439-BS1)**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.26 0.0100 mg/L 5.00 105 80-120

**Duplicate (BFC0439-DUP1)**

**Source: 2202350-01**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 0.116 0.0100 mg/L 0.123 5.86 20

**Matrix Spike (BFC0439-MS1)**

**Source: 2202350-01**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.52 0.0100 mg/L 5.00 0.123 108 75-125

**Matrix Spike Dup (BFC0439-MSD1)**

**Source: 2202350-01**

Prepared: 03/21/22 Analyzed: 03/29/22

Boron 5.98 0.0100 mg/L 5.00 0.123 117 75-125 7.97 25

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BFC0436 - EPA 3050B**

**Blank (BFC0436-BLK1)**

Prepared: 03/21/22 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 (BFC0436-BS1)**

Prepared: 03/21/22 Analyzed: 03/22/22

Arsenic	34.2	0.200	mg/kg wet	40.0	85.5	80-120
Barium	33.7	0.400	"	40.0	84.4	80-120
Cadmium	1.85	0.200	"	2.00	92.7	80-120
Copper	34.1	0.400	"	40.0	85.2	80-120
Lead	16.8	0.200	"	20.0	83.9	80-120
Nickel	32.9	0.400	"	40.0	82.2	80-120
Selenium	3.73	0.260	"	4.00	93.2	80-120
Silver	1.75	0.0200	"	2.00	87.7	80-120
Zinc	36.4	0.400	"	40.0	90.9	80-120

**Duplicate (BFC0436-DUP1)**

Source: 2202303-01

Prepared: 03/21/22 Analyzed: 03/22/22

Arsenic	1.45	0.219	mg/kg dry	1.48	1.45	20	
Barium	74.9	0.438	"	60.5	21.2	20	QR-03
Cadmium	0.179	0.219	"	0.151	17.3	20	
Copper	8.21	0.438	"	6.25	27.1	20	QR-03
Lead	18.7	0.219	"	14.2	26.8	20	QR-03
Nickel	6.38	0.438	"	5.18	20.8	20	QR-03
Selenium	0.567	0.285	"	0.448	23.4	20	QR-03
Silver	0.0378	0.0219	"	0.0349	7.92	20	
Zinc	33.6	0.438	"	27.8	18.9	20	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0436 - EPA 3050B**

Matrix Spike (BFC0436-MS1)		Source: 2202303-01			Prepared: 03/21/22 Analyzed: 03/22/22					
Arsenic	41.6	0.219	mg/kg dry	43.8	1.48	91.6	75-125			
Barium	103	0.438	"	43.8	60.5	96.5	75-125			
Cadmium	2.07	0.219	"	2.19	0.151	87.8	75-125			
Copper	43.6	0.438	"	43.8	6.25	85.4	75-125			
Lead	31.7	0.219	"	21.9	14.2	79.5	75-125			
Nickel	42.1	0.438	"	43.8	5.18	84.3	75-125			
Selenium	3.46	0.285	"	4.38	0.448	68.9	75-125			QR-03
Silver	1.80	0.0219	"	2.19	0.0349	80.7	75-125			
Zinc	76.5	0.438	"	43.8	27.8	111	75-125			

Matrix Spike Dup (BFC0436-MSD1)		Source: 2202303-01			Prepared: 03/21/22 Analyzed: 03/22/22					
Arsenic	39.4	0.219	mg/kg dry	43.8	1.48	86.6	75-125	5.47	25	
Barium	109	0.438	"	43.8	60.5	111	75-125	5.96	25	
Cadmium	2.18	0.219	"	2.19	0.151	92.7	75-125	5.08	25	
Copper	43.5	0.438	"	43.8	6.25	85.2	75-125	0.190	25	
Lead	32.6	0.219	"	21.9	14.2	83.8	75-125	2.89	25	
Nickel	41.6	0.438	"	43.8	5.18	83.1	75-125	1.18	25	
Selenium	3.53	0.285	"	4.38	0.448	70.3	75-125	1.80	25	QR-03
Silver	1.88	0.0219	"	2.19	0.0349	84.3	75-125	4.31	25	
Zinc	74.9	0.438	"	43.8	27.8	107	75-125	2.16	25	

**Batch BFD0369 - EPA 3050B**

Blank (BFD0369-BLK1)		Prepared: 04/19/22 Analyzed: 04/20/22								
Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Selenium	ND	0.260	"							

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFD0369 - EPA 3050B**

**LCS (BFD0369-BS1)**

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	37.5	0.200	mg/kg wet	40.0		93.8	80-120			
Barium	33.8	0.400	"	40.0		84.5	80-120			
Cadmium	1.79	0.200	"	2.00		89.7	80-120			
Copper	33.8	0.400	"	40.0		84.5	80-120			
Lead	16.7	0.200	"	20.0		83.5	80-120			
Selenium	3.76	0.260	"	4.00		94.0	80-120			

**Duplicate (BFD0369-DUP1)**

Source: 2202321-08

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	1.71	0.200	mg/kg dry		1.92			11.4	20	
Barium	61.3	0.400	"		70.7			14.1	20	
Cadmium	0.162	0.200	"		0.195			18.5	20	
Copper	7.29	0.400	"		8.82			19.0	20	
Lead	8.15	0.200	"		9.83			18.7	20	
Selenium	0.745	0.260	"		0.849			13.0	20	

**Matrix Spike (BFD0369-MS1)**

Source: 2202321-08

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	34.5	0.200	mg/kg dry	41.8	1.92	77.8	75-125			
Barium	122	0.400	"	41.8	70.7	122	75-125			
Cadmium	2.12	0.200	"	2.09	0.195	92.2	75-125			
Copper	42.9	0.400	"	41.8	8.82	81.4	75-125			
Lead	25.8	0.200	"	20.9	9.83	76.5	75-125			
Selenium	4.04	0.260	"	4.18	0.849	76.2	75-125			

**Matrix Spike Dup (BFD0369-MSD1)**

Source: 2202321-08

Prepared: 04/19/22 Analyzed: 04/20/22

Arsenic	37.2	0.200	mg/kg dry	41.8	1.92	84.2	75-125	7.48	25	
Barium	103	0.400	"	41.8	70.7	76.6	75-125	16.9	25	
Cadmium	2.05	0.200	"	2.09	0.195	88.9	75-125	3.32	25	
Copper	44.5	0.400	"	41.8	8.82	85.2	75-125	3.57	25	
Lead	26.9	0.200	"	20.9	9.83	81.5	75-125	3.96	25	
Selenium	4.03	0.260	"	4.18	0.849	76.1	75-125	0.162	25	

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0531 - 3060A Mod**

**Blank (BFC0531-BLK1)**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BFC0531-BS1)**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 26.6 0.30 mg/kg wet 25.0 107 80-120

**Duplicate (BFC0531-DUP1)**

**Source: 2202108-02**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BFC0531-MS1)**

**Source: 2202108-02**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 27.6 0.30 mg/kg dry 26.7 ND 103 75-125

**Matrix Spike Dup (BFC0531-MSD1)**

**Source: 2202108-02**

Prepared & Analyzed: 03/23/22

Chromium, Hexavalent 31.1 0.30 mg/kg dry 26.7 ND 116 75-125 11.8 20

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0433 - General Preparation**

**Blank (BFC0433-BLK1)**

Prepared: 03/21/22 Analyzed: 04/01/22

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

**LCS (BFC0433-BS1)**

Prepared: 03/21/22 Analyzed: 04/01/22

Calcium	5.09	0.0500	mg/L wet	5.00	102	70-130
Magnesium	5.48	0.0500	"	5.00	110	70-130
Sodium	5.04	0.0500	"	5.00	101	70-130

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

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

**Batch BFC0438 - General Preparation**

**Duplicate (BFC0438-DUP1)**      **Source: 2202350-01**      Prepared & Analyzed: 03/21/22

% Solids	90.7	%		94.2		3.74	20
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**Batch BFD0382 - General Preparation**

**Duplicate (BFD0382-DUP1)**      **Source: 2201381-04**      Prepared & Analyzed: 04/19/22

% Solids	88.8	%		89.3		0.497	20
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Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

**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 BFC0017 - General Preparation**

**Blank (BFC0017-BLK1)**

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFC0017-BS1)**

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 98.1 95-105

**Duplicate (BFC0017-DUP1)**

**Source: 2202357-01**

Prepared & Analyzed: 03/01/22

Specific Conductance (EC) 0.557 0.0100 mmhos/cm 0.577 3.58 20

Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

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

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

**Batch BFC0020 - General Preparation**

**LCS (BFC0020-BS1)**

Prepared & Analyzed: 03/01/22

pH	9.12		pH Units	9.18		99.3	95-105		
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**Duplicate (BFC0020-DUP1)**

**Source: 2202357-01**

Prepared & Analyzed: 03/01/22

pH	8.68		pH Units		8.67			0.115	20
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**Batch BFD0530 - General Preparation**

**LCS (BFD0530-BS1)**

Prepared & Analyzed: 04/25/22

pH	9.14		pH Units	9.18		99.6	95-105		
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**Duplicate (BFD0530-DUP1)**

**Source: 2202321-08**

Prepared & Analyzed: 04/25/22

pH	7.26		pH Units		7.25			0.138	20
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Summit Scientific

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

Project: Wells Ranch 42-30 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/27/22 10:47

### 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.
I-04	Sample was analyzed out of recommended holding time per clients request.
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