

Analytical Results
Former Witwer 44-6D Wellhead

TABLE 1
FORMER WITWER 44-6D WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

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)
Residential SSL^(1,2)			1.2	490	5.8	58	30	27	2	500
Protection of Groundwater SSL^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500
WH01 @ 6'	11/17/2021	6 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FLR01 @ 4'	11/17/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
FL01-01 @ 4'	11/17/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50

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

bgs = Below ground surface

TABLE 2
FORMER WITWER 44-6D WELLHEAD
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
WH01 @ 6'	11/17/2021	6 ft. bgs	8.66	2.39	9.86	0.0724
FLR01 @ 4'	11/17/2021	4 ft. bgs	8.28	0.466	1.14	0.263
BKG01 @ 4'	11/17/2021	4 ft. bgs	7.76	NA	4.56	NA
BKG01 @ 6'	11/17/2021	6 ft. bgs	7.76	NA	3.80	NA
SB01 @ 2.5'	8/2/2022	2.5 ft. bgs	7.88	1.32	1.14	0.201
SB01 @ 4'	8/2/2022	4 ft. bgs	8.02	1.01	0.841	0.184
SB01 @ 5'	8/2/2022	5 ft. bgs	7.87	1.15	0.970	0.140
SB01 @ 6'	8/2/2022	6 ft. bgs	7.66	0.826	0.622	0.116
SB01 @ 7'	8/2/2022	7 ft. bgs	8.04	1.34	0.542	0.157
SB01 @ 8'	8/2/2022	8 ft. bgs	7.91	0.827	1.44	0.101
SB02 @ 6'	8/2/2022	6 ft. bgs	7.81	0.628	2.41	0.144
SB03 @ 6'	8/2/2022	6 ft. bgs	7.73	0.986	1.51	0.236
SB04 @ 6'	8/2/2022	6 ft. bgs	7.67	0.362	1.73	0.107
SB05 @ 6'	8/2/2022	6 ft. bgs	8.00	1.83	3.24	0.218
BKG02 @ 2.5	8/2/2022	2.5 ft. bgs	7.63	1.04	1.65	0.232
BKG02 @ 4'	8/2/2022	4 ft. bgs	7.65	2.73	3.33	0.221
BKG02 @ 6'	8/2/2022	6 ft. bgs	7.69	2.26	3.81	0.285
BKG02 @ 8'	8/2/2022	8 ft. bgs	7.68	0.662	2.04	0.150
BKG03 @ 2.5'	8/2/2022	2.5 ft. bgs	7.73	1.29	2.56	0.288
BKG03 @ 4'	8/2/2022	4 ft. bgs	7.52	4.04	3.72	0.270
BKG03 @ 6'	8/2/2022	6 ft. bgs	7.53	2.23	3.13	0.219
BKG03 @ 8'	8/2/2022	8 ft. bgs	7.49	1.90	1.08	0.0479
BKG04 @ 2.5'	8/2/2022	2.5 ft. bgs	7.96	1.54	2.84	0.230
BKG04 @ 4'	8/2/2022	4 ft. bgs	7.90	0.734	2.94	0.104
BKG04 @ 6'	8/2/2022	6 ft. bgs	7.77	0.995	2.41	0.0798
BKG04 @ 8'	8/2/2022	8 ft. bgs	7.60	0.855	2.09	0.128

TABLE 2
FORMER WITWER 44-6D WELLHEAD
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

BKG05 @ 2.5'	8/2/2022	2.5 ft. bgs	7.80	0.641	2.18	0.123
BKG05 @ 4'	8/2/2022	4 ft. bgs	7.81	1.16	2.92	0.210
BKG05 @ 6'	8/2/2022	6 ft. bgs	7.85	0.800	2.42	0.127
BKG05 @ 8'	8/2/2022	8 ft. bgs	7.74	0.718	2.30	0.100
BKG06 @ 2.5'	8/2/2022	2.5 ft. bgs	7.84	0.458	0.768	0.123
BKG06 @ 4'	8/2/2022	4 ft. bgs	7.65	0.360	1.04	0.120
BKG06 @ 6'	8/2/2022	6 ft. bgs	7.64	0.546	1.54	0.160
BKG06 @ 8'	8/2/2022	8 ft. bgs	7.61	0.370	1.78	0.123

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 = Milligrams per liter

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

NA = Constituent not analyzed

**TABLE 3
FORMER WITWER 44-6D WELLHEAD
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
WH01 @ 6'	11/17/2021	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'	11/17/2021	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 groundwater is present.

COGCC = Colorado Oil and Gas Conservation Commission

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

PAHs = Polycyclic aromatic hydrocarbons

Benzo(a) = Benzoanthracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylnaphthalene

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 4
FORMER WITWER 44-6D WELLHEAD
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
			Latitude	Longitude		
WH01 @ 6'	11/17/2021	6 ft. bgs	40.424956	-104.587201	1.1	4.6
FLR01 @ 4'	11/17/2021	4 ft. bgs	40.424941	-104.587202	1.1	2.2
WHS01-N @ 0-6"	11/17/2021	0-6 in. bgs	40.425000	-104.587168	1.1	0.0
WHS01-W @ 0-6"	11/17/2021	0-6 in. bgs	40.424948	-104.587242	1.1	0.0
WHS01-S @ 0-6"	11/17/2021	0-6 in. bgs	40.424892	-104.587198	1.1	0.0
WHS01-E @ 0-6"	11/17/2021	0-6 in. bgs	40.424922	-104.587125	1.1	0.0
FL01-01 @ 4'	11/17/2021	4 ft. bgs	40.424933	-104.587437	1.0	4.6
BKG01 @ 4'	11/17/2021	4 ft. bgs	40.425067	-104.587194	1.1	4.6
BKG01 @ 6'	11/17/2021	6 ft. bgs	40.425067	-104.587194	1.1	4.3
SB01 @ 2.5'	8/2/2022	2.5 ft. bgs	40.424939	-104.587189	NC	0.3
SB01 @ 4'	8/2/2022	4 ft. bgs	40.424939	-104.587189	NC	0.0
SB01 @ 5'	8/2/2022	5 ft. bgs	40.424939	-104.587189	NC	0.2
SB01 @ 6'	8/2/2022	6 ft. bgs	40.424939	-104.587189	NC	0.3
SB01 @ 7'	8/2/2022	7 ft. bgs	40.424939	-104.587189	NC	0.2
SB01 @ 8'	8/2/2022	8 ft. bgs	40.424939	-104.587189	NC	0.4
SB02 @ 6'	8/2/2022	6 ft. bgs	40.424985	-104.587187	NC	0.0
SB03 @ 6'	8/2/2022	6 ft. bgs	40.424937	-104.587250	NC	0.0
SB04 @ 6'	8/2/2022	6 ft. bgs	40.424900	-104.587189	NC	0.3
SB05 @ 6'	8/2/2022	6 ft. bgs	40.424934	-104.587127	NC	0.1
BKG02 @ 2.5	8/2/2022	2.5 ft. bgs	40.425092	-104.587424	NC	0.0
BKG02 @ 4'	8/2/2022	4 ft. bgs	40.425092	-104.587424	NC	0.0
BKG02 @ 6'	8/2/2022	6 ft. bgs	40.425092	-104.587424	NC	0.0
BKG02 @ 8'	8/2/2022	8 ft. bgs	40.425092	-104.587424	NC	0.0
BKG03 @ 2.5'	8/2/2022	2.5 ft. bgs	40.425052	-104.587297	NC	0.1
BKG03 @ 4'	8/2/2022	4 ft. bgs	40.425052	-104.587297	NC	0.0
BKG03 @ 6'	8/2/2022	6 ft. bgs	40.425052	-104.587297	NC	0.1
BKG03 @ 8'	8/2/2022	8 ft. bgs	40.425052	-104.587297	NC	0.3
BKG04 @ 2.5'	8/2/2022	2.5 ft. bgs	40.424949	-104.587067	NC	0.0
BKG04 @ 4'	8/2/2022	4 ft. bgs	40.424949	-104.587067	NC	0.0
BKG04 @ 6'	8/2/2022	6 ft. bgs	40.424949	-104.587067	NC	0.0
BKG04 @ 8'	8/2/2022	8 ft. bgs	40.424949	-104.587067	NC	0.0
BKG05 @ 2.5'	8/2/2022	2.5 ft. bgs	40.424854	-104.586925	NC	0.0
BKG05 @ 4'	8/2/2022	4 ft. bgs	40.424854	-104.586925	NC	0.1
BKG05 @ 6'	8/2/2022	6 ft. bgs	40.424854	-104.586925	NC	0.1
BKG05 @ 8'	8/2/2022	8 ft. bgs	40.424854	-104.586925	NC	0.1
BKG06 @ 2.5'	8/2/2022	2.5 ft. bgs	40.424707	-104.586957	NC	0.1
BKG06 @ 4'	8/2/2022	4 ft. bgs	40.424707	-104.586957	NC	0.0
BKG06 @ 6'	8/2/2022	6 ft. bgs	40.424707	-104.586957	NC	0.0
BKG06 @ 8'	8/2/2022	8 ft. bgs	40.424707	-104.586957	NC	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

NC = Data not collected

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 07, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Witwer 34-6D Wellhead

Work Order #2111302

Enclosed are the results of analyses for samples received by Summit Scientific on 11/17/21 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Witwer 34-6D Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH01@6'	2111302-01	Soil	11/17/21 10:08	11/17/21 17:00
FLR01@4'	2111302-02	Soil	11/17/21 10:10	11/17/21 17:00
FL01-01@4'	2111302-03	Soil	11/17/21 13:50	11/17/21 17:00

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

2111302

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

Page 1 of 1

Client: PDC Tasman Project Manager: Mark Longhurst
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCt.com
 City/State/Zip: Broomfield CO 80020
 Phone: 303-487-1228
 Project Name: **WITWER 34-00D Wellhead**
 Sampler Name: **Mataya Wright / David V** 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	GBTEXN - 8260B	IPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	VOC - 915	PAH - 915	Metals - 915	
1	WHD1 @ 6'	11/17/21	1008	3			X			X				X						pH, EC, SAR by saturated paste 7 metals (1,2,4,11,13,15)
2	FLD1 @ 4'	11/17/21	1010	3			X			X				X						
3	FL01-01 (DUI)	11/17/21	1350	2			X			X										
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: **David V Wright** Date/Time: **11-17-21 1700**
 Relinquished by: **Mataya Wright** Date/Time:
 Tasman's Lock Box

Received by: **Tasman's Lock Box** Date/Time: **11-17-21**
 Received by: **[Signature]** Date/Time: **11-17-21 1700**
 Received by: Date/Time:

Turn Around Time (Check)
 Same Day _____ 72 hours _____
 24 hours _____ Standard **X**
 48 hours _____
 Sample Integrity:
 Temperature Upon Receipt: **7.1**
 Samples Intact: **(Yes)** No

Notes:

S₂

2111302

Sample Receipt Checklist

S2 Work Order# _____

Client: POC/Tasman Client Project ID: WITWER 34-60 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) 7.1

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, 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.

[Signature]
Custodian Printed Name or Initials

11-17-21
Date/Time



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

Project: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

WH01@6'
2111302-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		125 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		92.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

WH01@6'
2111302-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0469	11/22/21	11/25/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		98.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.147	0.0100	mg/L	1	BEK0494	11/22/21	12/06/21	EPA 6020B	

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

Date Sampled: **11/17/21 10:08**

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: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

WH01@6'
2111302-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	21.7	0.0589	mg/L dry	1	BEK0509	11/23/21	12/06/21	EPA 6020B	
Magnesium	4.95	0.0589	"	"	"	"	"	"	
Sodium	6.68	0.0589	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.337	0.00100	units	1	BEL0091	12/06/21	12/06/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	BEK0530	11/24/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.198	0.0100	mmhos/cm	1	BEK0533	11/24/21	11/24/21	EPA 120.1	

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

Date Sampled: **11/17/21 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.94		pH Units	1	BEK0534	11/24/21	11/24/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

FLR01@4'
2111302-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.3 %	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: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

FLR01@4'
2111302-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0469	11/22/21	11/25/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		92.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.262	0.0100	mg/L	1	BEK0494	11/22/21	12/06/21	EPA 6020B	

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

Date Sampled: **11/17/21 10:10**

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: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

FLR01@4'
2111302-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.8	0.0526	mg/L dry	1	BEK0509	11/23/21	12/06/21	EPA 6020B	
Magnesium	3.95	0.0526	"	"	"	"	"	"	
Sodium	4.31	0.0526	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.251	0.00100	units	1	BEL0091	12/06/21	12/06/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BEK0530	11/24/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.152	0.0100	mmhos/cm	1	BEK0533	11/24/21	11/24/21	EPA 120.1	

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

Date Sampled: **11/17/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.98		pH Units	1	BEK0534	11/24/21	11/24/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

FL01-01@4'
2111302-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.0 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEK0490 - EPA 5030 Soil MS

Blank (BEK0490-BLK1)

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0489		"	0.0400		122	23-173				
<i>Surrogate: Toluene-d8</i>	0.0467		"	0.0400		117	20-170				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0455		"	0.0400		114	21-167				

LCS (BEK0490-BS1)

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	0.0872	0.0020	mg/kg	0.100		87.2	70-130				
Toluene	0.107	0.0050	"	0.100		107	70-130				
Ethylbenzene	0.0883	0.0050	"	0.100		88.3	70-130				
m,p-Xylene	0.179	0.010	"	0.200		89.6	70-130				
o-Xylene	0.0887	0.0050	"	0.100		88.7	70-130				
1,2,4-Trimethylbenzene	0.0911	0.0050	"	0.100		91.1	70-130				
1,3,5-Trimethylbenzene	0.0892	0.0050	"	0.100		89.2	70-130				
Naphthalene	0.0773	0.0038	"	0.100		77.3	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0411		"	0.0400		103	23-173				
<i>Surrogate: Toluene-d8</i>	0.0449		"	0.0400		112	20-170				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0421		"	0.0400		105	21-167				

Matrix Spike (BEK0490-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	0.0850	0.0020	mg/kg	0.100	ND	85.0	70-130				
Toluene	0.104	0.0050	"	0.100	ND	104	70-130				
Ethylbenzene	0.0899	0.0050	"	0.100	ND	89.9	70-130				
m,p-Xylene	0.185	0.010	"	0.200	ND	92.7	70-130				
o-Xylene	0.0904	0.0050	"	0.100	ND	90.4	70-130				
1,2,4-Trimethylbenzene	0.0945	0.0050	"	0.100	ND	94.5	70-130				
1,3,5-Trimethylbenzene	0.0921	0.0050	"	0.100	ND	92.1	70-130				
Naphthalene	0.0839	0.0038	"	0.100	ND	83.9	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0381		"	0.0400		95.2	23-173				
<i>Surrogate: Toluene-d8</i>	0.0441		"	0.0400		110	20-170				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0422		"	0.0400		105	21-167				

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/07/21 08:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEK0490 - EPA 5030 Soil MS

Matrix Spike Dup (BEK0490-MSD1)	Source: 2111302-01			Prepared: 11/22/21 Analyzed: 11/23/21						
Benzene	0.0793	0.0020	mg/kg	0.100	ND	79.3	70-130	7.01	30	
Toluene	0.0988	0.0050	"	0.100	ND	98.8	70-130	4.77	30	
Ethylbenzene	0.0803	0.0050	"	0.100	ND	80.3	70-130	11.2	30	
m,p-Xylene	0.162	0.010	"	0.200	ND	80.8	70-130	13.7	30	
o-Xylene	0.0812	0.0050	"	0.100	ND	81.2	70-130	10.7	30	
1,2,4-Trimethylbenzene	0.0835	0.0050	"	0.100	ND	83.5	70-130	12.4	30	
1,3,5-Trimethylbenzene	0.0818	0.0050	"	0.100	ND	81.8	70-130	11.8	30	
Naphthalene	0.0821	0.0038	"	0.100	ND	82.1	70-130	2.17	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0449</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/07/21 08:32

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEK0489 - EPA 3550A

Blank (BEK0489-BLK1)

Prepared: 11/22/21 Analyzed: 11/23/21

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

LCS (BEK0489-BS1)

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	466	50	mg/kg	500	93.3	70-130				
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Matrix Spike (BEK0489-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	485	50	mg/kg	500	47.0	87.6	70-130			
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Matrix Spike Dup (BEK0489-MSD1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	480	50	mg/kg	500	47.0	86.6	70-130	1.04	20	
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Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEK0469 - EPA 5030 Soil MS

Blank (BEK0469-BLK1)

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		<i>"</i>	<i>0.0333</i>		<i>96.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0400</i>		<i>"</i>	<i>0.0333</i>		<i>120</i>	<i>40-150</i>			

LCS (BEK0469-BS1)

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	0.0291	0.00500	mg/kg	0.0333	87.3	31-137
Anthracene	0.0307	0.00500	"	0.0333	92.2	30-120
Benzo (a) anthracene	0.0326	0.00500	"	0.0333	97.7	30-120
Benzo (a) pyrene	0.0302	0.00500	"	0.0333	90.5	30-120
Benzo (b) fluoranthene	0.0315	0.00500	"	0.0333	94.4	30-120
Benzo (k) fluoranthene	0.0260	0.00500	"	0.0333	77.9	30-120
Chrysene	0.0286	0.00500	"	0.0333	85.7	30-120
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333	67.1	30-120
Fluoranthene	0.0390	0.00500	"	0.0333	117	30-120
Fluorene	0.0321	0.00500	"	0.0333	96.2	30-120
Indeno (1,2,3-cd) pyrene	0.0126	0.00500	"	0.0333	37.7	30-120
Pyrene	0.0215	0.00500	"	0.0333	64.5	35-142
1-Methylnaphthalene	0.0312	0.00500	"	0.0333	93.6	35-142
2-Methylnaphthalene	0.0351	0.00500	"	0.0333	105	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0341</i>		<i>"</i>	<i>0.0333</i>	<i>102</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0453</i>		<i>"</i>	<i>0.0333</i>	<i>136</i>	<i>40-150</i>

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: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEK0469 - EPA 5030 Soil MS

Matrix Spike (BEK0469-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	64.0	31-137			
Anthracene	0.0246	0.00500	"	0.0333	ND	73.7	30-120			
Benzo (a) anthracene	0.0277	0.00500	"	0.0333	ND	83.1	30-120			
Benzo (a) pyrene	0.0246	0.00500	"	0.0333	ND	73.8	30-120			
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333	ND	74.9	30-120			
Benzo (k) fluoranthene	0.0213	0.00500	"	0.0333	ND	64.0	30-120			
Chrysene	0.0236	0.00500	"	0.0333	ND	70.9	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333	ND	66.3	30-120			
Fluoranthene	0.0332	0.00500	"	0.0333	ND	99.5	30-120			
Fluorene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0230	0.00500	"	0.0333	ND	69.1	30-120			
Pyrene	0.0229	0.00500	"	0.0333	ND	68.7	35-142			
1-Methylnaphthalene	0.0231	0.00500	"	0.0333	ND	69.4	15-130			
2-Methylnaphthalene	0.0269	0.00500	"	0.0333	ND	80.7	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.1	40-150			
Surrogate: Fluoranthene-d10	0.0396		"	0.0333		119	40-150			

Matrix Spike Dup (BEK0469-MSD1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	6.33	30
Anthracene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	11.0	30
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	ND	78.0	30-120	6.30	30
Benzo (a) pyrene	0.0234	0.00500	"	0.0333	ND	70.2	30-120	5.07	30
Benzo (b) fluoranthene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	3.53	30
Benzo (k) fluoranthene	0.0204	0.00500	"	0.0333	ND	61.2	30-120	4.47	30
Chrysene	0.0221	0.00500	"	0.0333	ND	66.4	30-120	6.56	30
Dibenz (a,h) anthracene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	9.74	30
Fluoranthene	0.0308	0.00500	"	0.0333	ND	92.4	30-120	7.44	30
Fluorene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	5.72	30
Indeno (1,2,3-cd) pyrene	0.0223	0.00500	"	0.0333	ND	66.8	30-120	3.38	30
Pyrene	0.0222	0.00500	"	0.0333	ND	66.7	35-142	2.92	30
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130	9.15	50
2-Methylnaphthalene	0.0262	0.00500	"	0.0333	ND	78.6	15-130	2.67	50
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		70.0	40-150		
Surrogate: Fluoranthene-d10	0.0365		"	0.0333		110	40-150		

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: Witwer 34-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/07/21 08:32

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

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

Batch BEK0494 - EPA 3050B

Blank (BEK0494-BLK1)				Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	ND	0.0100	mg/L								
LCS (BEK0494-BS1)				Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	4.82	0.0100	mg/L	5.00	96.5	80-120					
Duplicate (BEK0494-DUP1)				Source: 2111301-01 Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	0.0856	0.0100	mg/L		0.0989				14.4	20	
Matrix Spike (BEK0494-MS1)				Source: 2111301-01 Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	4.72	0.0100	mg/L	5.00	0.0989	92.5	75-125				
Matrix Spike Dup (BEK0494-MSD1)				Source: 2111301-01 Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	4.91	0.0100	mg/L	5.00	0.0989	96.3	75-125	3.97		25	

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/07/21 08:32

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

Summit Scientific

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

Batch BEK0509 - General Preparation

Blank (BEK0509-BLK1)

Prepared: 11/23/21 Analyzed: 12/06/21

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

LCS (BEK0509-BS1)

Prepared: 11/23/21 Analyzed: 12/06/21

Calcium	5.64	0.0500	mg/L wet	5.00	113	70-130				
Magnesium	5.72	0.0500	"	5.00	114	70-130				
Sodium	5.68	0.0500	"	5.00	114	70-130				

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: Witwer 34-6D Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 12/07/21 08:32

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

Summit Scientific

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

Batch BEK0530 - General Preparation

Duplicate (BEK0530-DUP1)	Source: 2111302-01			Prepared & Analyzed: 11/24/21		
% Solids	85.6	%		84.9		0.861 20

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/07/21 08:32

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

Summit Scientific

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

Batch BEK0533 - General Preparation

Blank (BEK0533-BLK1)

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEK0533-BS1)

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.2 95-105

Duplicate (BEK0533-DUP1)

Source: 2111302-01

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) 0.200 0.0100 mmhos/cm 0.198 0.904 20

Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/07/21 08:32

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

Summit Scientific

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

Batch BEK0534 - General Preparation

LCS (BEK0534-BS1)

Prepared & Analyzed: 11/24/21

pH	9.14	pH Units	9.18	99.6	95-105
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Duplicate (BEK0534-DUP1)

Source: 2111302-01

Prepared & Analyzed: 11/24/21

pH	9.10	pH Units	8.94	1.77	20
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Summit Scientific

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

Project: Witwer 34-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/21 08:32

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

December 27, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Witwer 44-6D Wellhead

Work Order #2111303

Enclosed are the results of analyses for samples received by Summit Scientific on 11/17/21 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury

President



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

Project: Witwer 44-6D Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH01@6'	2111303-01	Soil	11/17/21 09:40	11/17/21 17:00
FLR01@4'	2111303-02	Soil	11/17/21 09:42	11/17/21 17:00
FL01-01@4'	2111303-03	Soil	11/17/21 13:48	11/17/21 17:00
BKG01@4'	2111303-04	Soil	11/17/21 13:00	11/17/21 17:00
BKG01@6'	2111303-05	Soil	11/17/21 13:05	11/17/21 17:00

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.

S₂

2111303

Sample Receipt Checklist

S2 Work Order# _____

Client: RockTasman Client Project ID: WITWER 44-6D 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) 7.1

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, 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.

[Signature]
Custodian Printed Name or Initials

11.17.21
Date/Time



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

WH01@6'
2111303-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.9 %	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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

WH01@6'
2111303-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0469	11/22/21	11/25/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		95.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0724	0.0100	mg/L	1	BEK0494	11/22/21	12/06/21	EPA 6020B	

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

Date Sampled: **11/17/21 09:40**

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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

WH01@6'
2111303-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.8	0.0548	mg/L dry	1	BEK0509	11/23/21	12/06/21	EPA 6020B	
Magnesium	8.26	0.0548	"	"	"	"	"	"	
Sodium	216	0.0548	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.86	0.00100	units	1	BEL0091	12/06/21	12/06/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.3		%	1	BEK0528	11/24/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.39	0.0100	mmhos/cm	1	BEK0533	11/24/21	11/24/21	EPA 120.1	

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

Date Sampled: **11/17/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.66		pH Units	1	BEK0534	11/24/21	11/24/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

FLR01@4'
2111303-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		131 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

FLR01@4'
2111303-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEK0469	11/22/21	11/25/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.263	0.0100	mg/L	1	BEK0494	11/22/21	12/06/21	EPA 6020B	

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

Date Sampled: **11/17/21 09:42**

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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

FLR01@4'
2111303-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.4	0.0604	mg/L dry	1	BEK0509	11/23/21	12/06/21	EPA 6020B	
Magnesium	8.05	0.0604	"	"	"	"	"	"	
Sodium	27.7	0.0604	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BEL0091	12/06/21	12/06/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.8		%	1	BEK0528	11/24/21	11/24/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.466	0.0100	mmhos/cm	1	BEK0533	11/24/21	11/24/21	EPA 120.1	

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

Date Sampled: **11/17/21 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.28		pH Units	1	BEK0534	11/24/21	11/24/21	EPA 9045D	

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

FL01-01@4'
2111303-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/21 13:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEK0490	11/22/21	11/23/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/17/21 13:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		122 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/21 13:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEK0489	11/22/21	11/23/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/17/21 13:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		88.7 %		30-150		"	"	"	"	

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

BKG01@4'
2111303-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/17/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.07	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	113	0.400	"	"	"	"	"	"	
Selenium	0.935	0.260	"	"	"	"	"	"	

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

Date Sampled: **11/17/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	95.4	0.0537	mg/L dry	1	BEL0409	12/17/21	12/23/21	EPA 6020B	
Magnesium	62.1	0.0537	"	"	"	"	"	"	
Sodium	233	0.0537	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	4.56	0.00100	units	1	BEL0544	12/23/21	12/23/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	93.1		%	1	BEL0225	12/10/21	12/10/21	Calculation	

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

Date Sampled: **11/17/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.76		pH Units	1	BEL0432	12/20/21	12/20/21	EPA 9045D	I-04

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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

BKG01@6'
2111303-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/17/21 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.02	0.200	mg/kg dry	1	BEL0337	12/15/21	12/24/21	EPA 6020B	
Barium	47.8	0.400	"	"	"	"	"	"	
Selenium	0.571	0.260	"	"	"	"	"	"	

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

Date Sampled: **11/17/21 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	104	0.0514	mg/L dry	1	BEL0409	12/17/21	12/23/21	EPA 6020B	
Magnesium	65.9	0.0514	"	"	"	"	"	"	
Sodium	201	0.0514	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/17/21 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	3.80	0.00100	units	1	BEL0544	12/23/21	12/23/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/21 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	97.2		%	1	BEL0225	12/10/21	12/10/21	Calculation	

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

Date Sampled: **11/17/21 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.76		pH Units	1	BEL0432	12/20/21	12/20/21	EPA 9045D	I-04

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEK0490 - EPA 5030 Soil MS

Blank (BEK0490-BLK1)

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0489</i>		<i>"</i>	<i>0.0400</i>		<i>122</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0467</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0455</i>		<i>"</i>	<i>0.0400</i>		<i>114</i>	<i>21-167</i>				

LCS (BEK0490-BS1)

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	0.0872	0.0020	mg/kg	0.100		87.2	70-130				
Toluene	0.107	0.0050	"	0.100		107	70-130				
Ethylbenzene	0.0883	0.0050	"	0.100		88.3	70-130				
m,p-Xylene	0.179	0.010	"	0.200		89.6	70-130				
o-Xylene	0.0887	0.0050	"	0.100		88.7	70-130				
1,2,4-Trimethylbenzene	0.0911	0.0050	"	0.100		91.1	70-130				
1,3,5-Trimethylbenzene	0.0892	0.0050	"	0.100		89.2	70-130				
Naphthalene	0.0773	0.0038	"	0.100		77.3	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0449</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0421</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>				

Matrix Spike (BEK0490-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

Benzene	0.0850	0.0020	mg/kg	0.100	ND	85.0	70-130				
Toluene	0.104	0.0050	"	0.100	ND	104	70-130				
Ethylbenzene	0.0899	0.0050	"	0.100	ND	89.9	70-130				
m,p-Xylene	0.185	0.010	"	0.200	ND	92.7	70-130				
o-Xylene	0.0904	0.0050	"	0.100	ND	90.4	70-130				
1,2,4-Trimethylbenzene	0.0945	0.0050	"	0.100	ND	94.5	70-130				
1,3,5-Trimethylbenzene	0.0921	0.0050	"	0.100	ND	92.1	70-130				
Naphthalene	0.0839	0.0038	"	0.100	ND	83.9	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0441</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>				

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEK0490 - EPA 5030 Soil MS

Matrix Spike Dup (BEK0490-MSD1)	Source: 2111302-01			Prepared: 11/22/21 Analyzed: 11/23/21						
Benzene	0.0793	0.0020	mg/kg	0.100	ND	79.3	70-130	7.01	30	
Toluene	0.0988	0.0050	"	0.100	ND	98.8	70-130	4.77	30	
Ethylbenzene	0.0803	0.0050	"	0.100	ND	80.3	70-130	11.2	30	
m,p-Xylene	0.162	0.010	"	0.200	ND	80.8	70-130	13.7	30	
o-Xylene	0.0812	0.0050	"	0.100	ND	81.2	70-130	10.7	30	
1,2,4-Trimethylbenzene	0.0835	0.0050	"	0.100	ND	83.5	70-130	12.4	30	
1,3,5-Trimethylbenzene	0.0818	0.0050	"	0.100	ND	81.8	70-130	11.8	30	
Naphthalene	0.0821	0.0038	"	0.100	ND	82.1	70-130	2.17	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0449</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/27/21 13:00

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEK0489 - EPA 3550A

Blank (BEK0489-BLK1)

Prepared: 11/22/21 Analyzed: 11/23/21

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

LCS (BEK0489-BS1)

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	466	50	mg/kg	500	93.3	70-130				
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Matrix Spike (BEK0489-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	485	50	mg/kg	500	47.0	87.6	70-130			
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Matrix Spike Dup (BEK0489-MSD1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/23/21

C10-C28 (DRO)	480	50	mg/kg	500	47.0	86.6	70-130	1.04	20	
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Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEK0469 - EPA 5030 Soil MS

Blank (BEK0469-BLK1)

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0322		"	0.0333		96.7	40-150			
Surrogate: Fluoranthene-d10	0.0400		"	0.0333		120	40-150			

LCS (BEK0469-BS1)

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	0.0291	0.00500	mg/kg	0.0333		87.3	31-137			
Anthracene	0.0307	0.00500	"	0.0333		92.2	30-120			
Benzo (a) anthracene	0.0326	0.00500	"	0.0333		97.7	30-120			
Benzo (a) pyrene	0.0302	0.00500	"	0.0333		90.5	30-120			
Benzo (b) fluoranthene	0.0315	0.00500	"	0.0333		94.4	30-120			
Benzo (k) fluoranthene	0.0260	0.00500	"	0.0333		77.9	30-120			
Chrysene	0.0286	0.00500	"	0.0333		85.7	30-120			
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333		67.1	30-120			
Fluoranthene	0.0390	0.00500	"	0.0333		117	30-120			
Fluorene	0.0321	0.00500	"	0.0333		96.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0126	0.00500	"	0.0333		37.7	30-120			
Pyrene	0.0215	0.00500	"	0.0333		64.5	35-142			
1-Methylnaphthalene	0.0312	0.00500	"	0.0333		93.6	35-142			
2-Methylnaphthalene	0.0351	0.00500	"	0.0333		105	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0341		"	0.0333		102	40-150			
Surrogate: Fluoranthene-d10	0.0453		"	0.0333		136	40-150			

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEK0469 - EPA 5030 Soil MS

Matrix Spike (BEK0469-MS1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	64.0	31-137			
Anthracene	0.0246	0.00500	"	0.0333	ND	73.7	30-120			
Benzo (a) anthracene	0.0277	0.00500	"	0.0333	ND	83.1	30-120			
Benzo (a) pyrene	0.0246	0.00500	"	0.0333	ND	73.8	30-120			
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333	ND	74.9	30-120			
Benzo (k) fluoranthene	0.0213	0.00500	"	0.0333	ND	64.0	30-120			
Chrysene	0.0236	0.00500	"	0.0333	ND	70.9	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333	ND	66.3	30-120			
Fluoranthene	0.0332	0.00500	"	0.0333	ND	99.5	30-120			
Fluorene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0230	0.00500	"	0.0333	ND	69.1	30-120			
Pyrene	0.0229	0.00500	"	0.0333	ND	68.7	35-142			
1-Methylnaphthalene	0.0231	0.00500	"	0.0333	ND	69.4	15-130			
2-Methylnaphthalene	0.0269	0.00500	"	0.0333	ND	80.7	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.1	40-150			
Surrogate: Fluoranthene-d10	0.0396		"	0.0333		119	40-150			

Matrix Spike Dup (BEK0469-MSD1)

Source: 2111302-01

Prepared: 11/22/21 Analyzed: 11/25/21

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	6.33	30
Anthracene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	11.0	30
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	ND	78.0	30-120	6.30	30
Benzo (a) pyrene	0.0234	0.00500	"	0.0333	ND	70.2	30-120	5.07	30
Benzo (b) fluoranthene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	3.53	30
Benzo (k) fluoranthene	0.0204	0.00500	"	0.0333	ND	61.2	30-120	4.47	30
Chrysene	0.0221	0.00500	"	0.0333	ND	66.4	30-120	6.56	30
Dibenz (a,h) anthracene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	9.74	30
Fluoranthene	0.0308	0.00500	"	0.0333	ND	92.4	30-120	7.44	30
Fluorene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	5.72	30
Indeno (1,2,3-cd) pyrene	0.0223	0.00500	"	0.0333	ND	66.8	30-120	3.38	30
Pyrene	0.0222	0.00500	"	0.0333	ND	66.7	35-142	2.92	30
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130	9.15	50
2-Methylnaphthalene	0.0262	0.00500	"	0.0333	ND	78.6	15-130	2.67	50
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		70.0	40-150		
Surrogate: Fluoranthene-d10	0.0365		"	0.0333		110	40-150		

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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/27/21 13:00

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

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

Batch BEK0494 - EPA 3050B

Blank (BEK0494-BLK1)				Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	ND	0.0100	mg/L								
LCS (BEK0494-BS1)				Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	4.82	0.0100	mg/L	5.00	96.5	80-120					
Duplicate (BEK0494-DUP1)				Source: 2111301-01 Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	0.0856	0.0100	mg/L	0.0989			14.4	20			
Matrix Spike (BEK0494-MS1)				Source: 2111301-01 Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	4.72	0.0100	mg/L	5.00	0.0989	92.5	75-125				
Matrix Spike Dup (BEK0494-MSD1)				Source: 2111301-01 Prepared: 11/22/21 Analyzed: 12/05/21							
Boron	4.91	0.0100	mg/L	5.00	0.0989	96.3	75-125	3.97	25		

Summit Scientific

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



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEL0337 - EPA 3050B

Blank (BEL0337-BLK1)

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BEL0337-BS1)

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	40.7	0.200	mg/kg wet	40.0	102	80-120				
Barium	38.8	0.400	"	40.0	97.0	80-120				
Selenium	4.12	0.260	"	4.00	103	80-120				

Duplicate (BEL0337-DUP1)

Source: 2111303-04

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	2.55	0.200	mg/kg dry	2.07			20.8	20		QR-03
Barium	120	0.400	"	113			5.98	20		
Selenium	0.861	0.260	"	0.935			8.28	20		

Matrix Spike (BEL0337-MS1)

Source: 2111303-04

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	44.8	0.200	mg/kg dry	43.0	2.07	99.4	75-125			
Barium	161	0.400	"	43.0	113	112	75-125			
Selenium	4.58	0.260	"	4.30	0.935	84.9	75-125			

Matrix Spike Dup (BEL0337-MSD1)

Source: 2111303-04

Prepared: 12/15/21 Analyzed: 12/24/21

Arsenic	46.7	0.200	mg/kg dry	43.0	2.07	104	75-125	4.16	25	
Barium	155	0.400	"	43.0	113	99.6	75-125	3.24	25	
Selenium	4.67	0.260	"	4.30	0.935	86.9	75-125	1.86	25	

Summit Scientific

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



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

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

Summit Scientific

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

Batch BEK0509 - General Preparation

Blank (BEK0509-BLK1)

Prepared: 11/23/21 Analyzed: 12/06/21

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

LCS (BEK0509-BS1)

Prepared: 11/23/21 Analyzed: 12/06/21

Calcium	5.64	0.0500	mg/L wet	5.00	113	70-130
Magnesium	5.72	0.0500	"	5.00	114	70-130
Sodium	5.68	0.0500	"	5.00	114	70-130

Batch BEL0409 - General Preparation

Blank (BEL0409-BLK1)

Prepared: 12/17/21 Analyzed: 12/23/21

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

LCS (BEL0409-BS1)

Prepared: 12/17/21 Analyzed: 12/23/21

Calcium	4.12	0.0500	mg/L wet	5.00	82.4	70-130
Magnesium	4.92	0.0500	"	5.00	98.3	70-130
Sodium	5.45	0.0500	"	5.00	109	70-130

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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/27/21 13:00

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

Summit Scientific

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

Batch BEK0528 - General Preparation

Duplicate (BEK0528-DUP1)		Source: 2111266-03			Prepared & Analyzed: 11/24/21						
% Solids	91.4		%		91.0				0.498	20	

Batch BEL0225 - General Preparation

Duplicate (BEL0225-DUP1)		Source: 2111262-03			Prepared & Analyzed: 12/10/21						
% Solids	94.4		%		95.1				0.749	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/27/21 13:00

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

Summit Scientific

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

Batch BEK0533 - General Preparation

Blank (BEK0533-BLK1)

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEK0533-BS1)

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.2 95-105

Duplicate (BEK0533-DUP1)

Source: 2111302-01

Prepared & Analyzed: 11/24/21

Specific Conductance (EC) 0.200 0.0100 mmhos/cm 0.198 0.904 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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 12/27/21 13:00

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

Summit Scientific

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

Batch BEK0534 - General Preparation

LCS (BEK0534-BS1)

Prepared & Analyzed: 11/24/21

pH	9.14		pH Units	9.18		99.6	95-105		
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Duplicate (BEK0534-DUP1)

Source: 2111302-01

Prepared & Analyzed: 11/24/21

pH	9.10		pH Units		8.94			1.77	20
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Batch BEL0432 - General Preparation

LCS (BEL0432-BS1)

Prepared & Analyzed: 12/20/21

pH	9.09		pH Units	9.18		99.0	95-105		
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Duplicate (BEL0432-DUP1)

Source: 2111303-04

Prepared & Analyzed: 12/20/21

pH	7.74		pH Units		7.76			0.258	20
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Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/27/21 13:00

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Witwer 44-6D Wellhead

Work Order #2208029

Enclosed are the results of analyses for samples received by Summit Scientific on 08/02/22 17:12. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



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

Project: Witwer 44-6D Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01@2.5'	2208029-01	Soil	08/02/22 09:20	08/02/22 17:12
SB01@4'	2208029-02	Soil	08/02/22 09:40	08/02/22 17:12
SB01@5'	2208029-03	Soil	08/02/22 09:45	08/02/22 17:12
SB01@6'	2208029-04	Soil	08/02/22 09:50	08/02/22 17:12
SB01@7'	2208029-05	Soil	08/02/22 10:00	08/02/22 17:12
SB01@8'	2208029-06	Soil	08/02/22 10:05	08/02/22 17:12
SB02@6'	2208029-10	Soil	08/02/22 09:42	08/02/22 17:12
SB03@6'	2208029-16	Soil	08/02/22 12:10	08/02/22 17:12
SB04@6'	2208029-22	Soil	08/02/22 11:10	08/02/22 17:12
SB05@6'	2208029-28	Soil	08/02/22 10:40	08/02/22 17:12

Summit Scientific

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

Summit Scientific

S₂

2208029.1

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

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: *Witwer 44 - 60 with Wellhead*
Sampler Name: Emilia Wozniak 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	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH - 915	Hold			
1	SB01 @ 2.5'	8/2/22	920	1			X			X						X	X				pH, EC, SAR by saturated paste	
2	SB01 @ 4'		940																			
3	SB01 @ 5'		945																			
4	SB01 @ 6'		950																			
5	SB01 @ 7'		1000																			
6	SB01 @ 8'		1005																			
7	SB02 @ 2.5'		925																			
8	SB02 @ 4'		930																			X
9	SB02 @ 5'		935																			X
10	SB02 @ 6'		942													X	X					X

Relinquished by: <i>Lumina Wozniak</i>	Date/Time: 8/2/22 1657	Received by: <i>Tasman's Lock Box</i>	Date/Time: 8/2/22 1657	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <i>6.0</i> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: <i>Tasman's Lock Box</i>	Date/Time: 8/2/22 1712	Received by: <i>[Signature]</i>	Date/Time: 8/2/22 1712		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

2208029.2

S₂

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

Page 2 of 3

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: *Witwer 44-6D Wellhead*
Sampler Name: Emilia Wozniak 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	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH - 915	H ₂ O ₂		
1	SB02 @ 7'	8/2/22	9:47	1			X			X									X		
2	SB02 @ 8'		9:50																X		
3	SB03 @ 2.5'		11:53																X		
4	SB03 @ 4'		12:00																X		
5	SB03 @ 5'		12:05																X		
6	SB03 @ 6'		12:10												X	X					
7	SB03 @ 7'		12:15																X		
8	SB03 @ 8'		12:20																X		
9	SB04 @ 2.5'		10:55																X		
10	SB04 @ 4'		11:00																X		

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
<i>Emilia Wozniak</i>	8/2/22 16:57	Tasman's Lock Box	8/2/22 16:57	Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	
Tasman's Lock Box	8/2/22 17:12	<i>[Signature]</i>	8/2/22 17:12	Sample Integrity: Temperature Upon Receipt: <u>6.0</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

S₂

2208029.3

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

Page 3 of 3

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: *Witwer 44-6D Wellhead*
Sampler Name: Emilia Wozniak 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	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAH - 915	H ₁₀ /g			
1	SB04 @ 5'	8/12/22	1005	1			X			X											pH, EC, SAR by saturated paste	
2	SB04 @ 6'		1110	1													X	X				
3	SB04 @ 7'		1115	1																		
4	SB04 @ 8'		1120	1																		
5	SB05 @ 2.5'		1025	1																		
6	SB05 @ 4'		1030	1																		
7	SB05 @ 5'		1035	1																		
8	SB05 @ 6'		1040	1													X	X				
9	SB05 @ 7'		1045	1																		
10	SB05 @ 8'		1050	1																		

Relinquished by: <i>Lunia War</i> Date/Time: <i>8/12/22 1057</i>	Received by: <i>Tasman's Lock Box</i> Date/Time: <i>8/12/22 1657</i>	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>6.0</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: <i>Tasman's Lock Box</i> Date/Time: <i>8/22/22 1712</i>	Received by: <i>[Signature]</i> Date/Time: <i>8/22/22 1712</i>		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

S₂

3/3

2208029

Sample Receipt Checklist

S2 Work Order#

Client: PacTasman Client Project ID: Witwer 44 - CoD Wellhead

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

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			on ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are samples due within 48 hours present?		<input checked="" type="checkbox"/>		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

[Signature]
Custodian Printed Name

8222
Date/Time



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB01@2.5'
2208029-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.201	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	85.5	0.0580	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	25.3	0.0580	"	"	"	"	"	"	
Sodium	46.6	0.0580	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.3		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.32	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	EPA 120.1	

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

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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB01@2.5'
2208029-01 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.88		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB01@4'
2208029-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.184	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.9	0.0566	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	21.2	0.0566	"	"	"	"	"	"	
Sodium	30.2	0.0566	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.841	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.4		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.01	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	EPA 120.1	

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

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: Witwer 44-6D Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB01@4'
2208029-02 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 09:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.02		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB01@5'
2208029-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.140	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.0	0.0567	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	22.1	0.0567	"	"	"	"	"	"	
Sodium	37.0	0.0567	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.970	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.1		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.15	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB01@5'
2208029-03 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.87		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

Summit Scientific



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB01@6'
2208029-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.116	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	57.2	0.0558	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	14.3	0.0558	"	"	"	"	"	"	
Sodium	20.3	0.0558	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.622	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.826	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB01@6'
2208029-04 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.66		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

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: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB01@7'
2208029-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.157	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	120	0.0602	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	27.4	0.0602	"	"	"	"	"	"	
Sodium	25.3	0.0602	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.542	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.34	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB01@7'
2208029-05 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.04		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

Summit Scientific



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB01@8'
2208029-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.101	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.8	0.0581	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	8.53	0.0581	"	"	"	"	"	"	
Sodium	40.0	0.0581	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.44	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.0		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.827	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB01@8'
2208029-06 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.91		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

Summit Scientific



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB02@6'
2208029-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.144	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.0	0.0541	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	8.82	0.0541	"	"	"	"	"	"	
Sodium	54.4	0.0541	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.41	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.4		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 09:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.628	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB02@6'
2208029-10 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 09:42**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.81		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

Summit Scientific



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB03@6'
2208029-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.236	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.4	0.0523	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	16.8	0.0523	"	"	"	"	"	"	
Sodium	46.1	0.0523	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.51	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.5		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.986	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB03@6'
2208029-16 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.73		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

Summit Scientific



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB04@6'
2208029-22 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.107	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.5	0.0518	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	5.38	0.0518	"	"	"	"	"	"	
Sodium	29.0	0.0518	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.73	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.5		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.362	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB04@6'
2208029-22 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.67		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

Summit Scientific



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

SB05@6'
2208029-28 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/02/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.218	0.0100	mg/L	1	BFH0088	08/04/22	08/04/22	EPA 6020B	

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

Date Sampled: **08/02/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	96.7	0.0594	mg/L dry	1	BFH0072	08/03/22	08/05/22	EPA 6020B	
Magnesium	37.3	0.0594	"	"	"	"	"	"	
Sodium	148	0.0594	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/02/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.24	0.00100	units	1	BFH0145	08/08/22	08/08/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/02/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BFH0085	08/03/22	08/04/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/02/22 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.83	0.0100	mmhos/cm	1	BFH0090	08/03/22	08/04/22	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: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

SB05@6'
2208029-28 (Soil)

Summit Scientific

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

Date Sampled: **08/02/22 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.00		pH Units	1	BFH0089	08/03/22	08/04/22	EPA 9045D	

Summit Scientific



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

Project: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

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

Summit Scientific

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

Batch BFH0088 - EPA 3050B

Blank (BFH0088-BLK1)

Prepared & Analyzed: 08/04/22

Boron ND 0.0100 mg/L

LCS (BFH0088-BS1)

Prepared & Analyzed: 08/04/22

Boron 4.92 0.0100 mg/L 5.00 98.5 80-120

Duplicate (BFH0088-DUP1)

Source: 2208029-01

Prepared & Analyzed: 08/04/22

Boron 0.192 0.0100 mg/L 0.201 4.55 20

Matrix Spike (BFH0088-MS1)

Source: 2208029-01

Prepared & Analyzed: 08/04/22

Boron 4.98 0.0100 mg/L 5.00 0.201 95.7 75-125

Matrix Spike Dup (BFH0088-MSD1)

Source: 2208029-01

Prepared & Analyzed: 08/04/22

Boron 5.09 0.0100 mg/L 5.00 0.201 97.7 75-125 2.00 25

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

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

Summit Scientific

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

Batch BFH0072 - General Preparation

Blank (BFH0072-BLK1)

Prepared: 08/03/22 Analyzed: 08/05/22

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

LCS (BFH0072-BS1)

Prepared: 08/03/22 Analyzed: 08/05/22

Calcium	5.37	0.0500	mg/L wet	5.00	107	70-130				
Magnesium	5.30	0.0500	"	5.00	106	70-130				
Sodium	5.10	0.0500	"	5.00	102	70-130				

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

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

Summit Scientific

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

Batch BFH0085 - General Preparation

Duplicate (BFH0085-DUP1)	Source: 2207389-06		Prepared: 08/03/22 Analyzed: 08/04/22		
% Solids	91.8	%	91.6	0.135	20

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

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

Summit Scientific

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

Batch BFH0090 - General Preparation

Blank (BFH0090-BLK1)

Prepared: 08/03/22 Analyzed: 08/04/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFH0090-BS1)

Prepared: 08/03/22 Analyzed: 08/04/22

Specific Conductance (EC) 0.145 0.0100 mmhos/cm 0.150 96.9 95-105

Duplicate (BFH0090-DUP1)

Source: 2207389-06

Prepared: 08/03/22 Analyzed: 08/04/22

Specific Conductance (EC) 9.00 0.0100 mmhos/cm 9.28 3.08 20

Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/08/22 16:07

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

Summit Scientific

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

Batch BFH0089 - General Preparation

LCS (BFH0089-BS1)

Prepared: 08/03/22 Analyzed: 08/04/22

pH	9.00		pH Units	9.18		98.0	95-105			
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Duplicate (BFH0089-DUP1)

Source: 2208010-01

Prepared: 08/03/22 Analyzed: 08/04/22

pH	7.30		pH Units	7.28		0.274	20			
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Summit Scientific

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

Project: Witwer 44-6D Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/08/22 16:07

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