

Analytical Results  
Former Witwer 34-6D Wellhead

**TABLE 1**  
**FORMER WITWER 34-6D 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 <sup>(4)</sup> (mg/kg)
<b>Residential SSL<sup>(1,2)</sup></b>			<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>30</b>	<b>27</b>	<b>2</b>	<b>500</b>
<b>Protection of Groundwater SSL<sup>(1,2,3)</sup></b>			<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>0.0081</b>	<b>0.0087</b>	<b>0.0038</b>	<b>500</b>
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 34-6D WELLHEAD**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
<b>Soil Suitability for Reclamation Standard <sup>(1)</sup></b>			<b>6-8.3</b>	<b>&lt;4</b>	<b>&lt;6</b>	<b>2</b>
WH01 @ 6'	11/17/2021	6 ft. bgs	<b>8.94</b>	0.198	0.337	0.147
FLR01 @ 4'	11/17/2021	4 ft. bgs	7.98	0.152	0.251	0.262
BKG01 @ 4' <sup>(2)</sup>	11/17/2021	4 ft. bgs	7.76	NA	4.56	NA
BKG01 @ 6' <sup>(2)</sup>	11/17/2021	6 ft. bgs	7.76	NA	3.80	NA

**Notes:**

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

2. Sample submitted for laboratory analysis under the adjacent Witwer 44-6D Wellhead project.

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.

**TABLE 3  
FORMER WITWER 34-6D 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)
<b>Residential SSL<sup>(1,2)</sup></b>			<b>360</b>	<b>1,800</b>	<b>1.1</b>	<b>0.11</b>	<b>1.1</b>	<b>11</b>	<b>110</b>	<b>0.11</b>	<b>240</b>	<b>240</b>	<b>1.1</b>	<b>180</b>	<b>18</b>	<b>24</b>
<b>Protection of Groundwater SSL<sup>(1,2,3)</sup></b>			<b>0.55</b>	<b>5.8</b>	<b>0.011</b>	<b>0.24</b>	<b>0.3</b>	<b>2.9</b>	<b>9</b>	<b>0.096</b>	<b>8.9</b>	<b>0.54</b>	<b>0.98</b>	<b>1.3</b>	<b>0.006</b>	<b>0.019</b>
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) = Benzanthracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylanththalene

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

**TABLE 4**  
**FORMER WITWER 34-6D WELLHEAD**  
**FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data <sup>(1)</sup>		PDOP Value	VOC Concentration <sup>(2)</sup> (ppm)
			Latitude	Longitude		
WH01 @ 6'	11/17/2021	6 ft. bgs	40.424969	-104.587297	1.0	0.0
FLR01 @ 4'	11/17/2021	4 ft. bgs	40.424961	-104.587301	1.0	0.0
WHS01-N @ 0-6"	11/17/2021	0-6 in. bgs	40.425038	-104.587262	1.0	0.0
WHS01-W @ 0-6"	11/17/2021	0-6 in. bgs	40.424963	-104.587351	1.0	0.1
WHS01-S @ 0-6"	11/17/2021	0-6 in. bgs	40.424921	-104.587293	1.0	0.3
WHS01-E @ 0-6"	11/17/2021	0-6 in. bgs	40.424957	-104.587233	1.0	0.3
FL01-01 @ 4'	11/17/2021	4 ft. bgs	40.424936	-104.587440	1.0	6.0
BKG01 @ 4'	11/17/2021	4 ft. bgs	40.425066	-104.587193	1.0	4.6
BKG01 @ 6'	11/17/2021	6 ft. bgs	40.425066	-104.587193	1.0	4.3

**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

## Attachment A

# Summit Scientific

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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,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', written in a cursive style.

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	TPH - (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  <b>7 Metals (1,2,4,11,15)</b>	
2	FLR01 @ 4'	11/17/21	1010	3			X			X				X								
3	FL01-01 (pH)	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: **11-17-21 1700**  
 Relinquished by: **Tasman's Lock Box**      Date/Time: **11-17-21 1700**

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:

S<sub>2</sub>

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 <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, 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 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

[Signature]  
Custodian Printed Name or Initials

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

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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

**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
<b>Boron</b>	<b>0.147</b>	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

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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

**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
<b>Boron</b>	<b>0.262</b>	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

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

**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	

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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>	<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 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	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		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
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	23-173		
Surrogate: Toluene-d8	0.0449		"	0.0400		112	20-170		
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167		

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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	"							
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 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**

<b>Matrix Spike (BEK0469-MS1)</b>	<b>Source: 2111302-01</b>			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		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0244</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>73.1</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0396</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>119</i>	<i>40-150</i>		

<b>Matrix Spike Dup (BEK0469-MSD1)</b>	<b>Source: 2111302-01</b>			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
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0233</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>70.0</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0365</i>	<i>"</i>	<i>"</i>	<i>0.0333</i>	<i>"</i>	<i>110</i>	<i>40-150</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

**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 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

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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 - Quality Control**

**Summit Scientific**

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

**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