

PDC Energy, Inc.
Second Quarter 2020 Groundwater Monitoring Summary

May 15, 2020

Former Schwab 26-6F Tank Battery
SENW Section 26 T4N R66W
Remediation # 15032

This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Schwab 26-6F tank battery. On April 22, 2020, eight monitoring wells (BH01 – BH08) were installed to delineate dissolved-phase hydrocarbon impacts and establish point of compliance in all cardinal directions of the former excavation extent. Lithologic descriptions and volatile organic compound (VOC) concentrations measured using a photoionization detector (PID) were recorded for each monitoring well. Based on field measurements and observations encountered in boreholes BH04 and BH07, soil samples were collected from the intervals exhibiting the highest VOC concentrations, and the terminus of the boring. Four soil samples were submitted to Summit Scientific Laboratories (Summit) for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, total petroleum hydrocarbons (TPH) – gasoline range organics by USEPA Method 8260B, and TPH – diesel range organics (DRO) by USEPA Method 8015. Boring and well completion logs are provided in Attachment A.

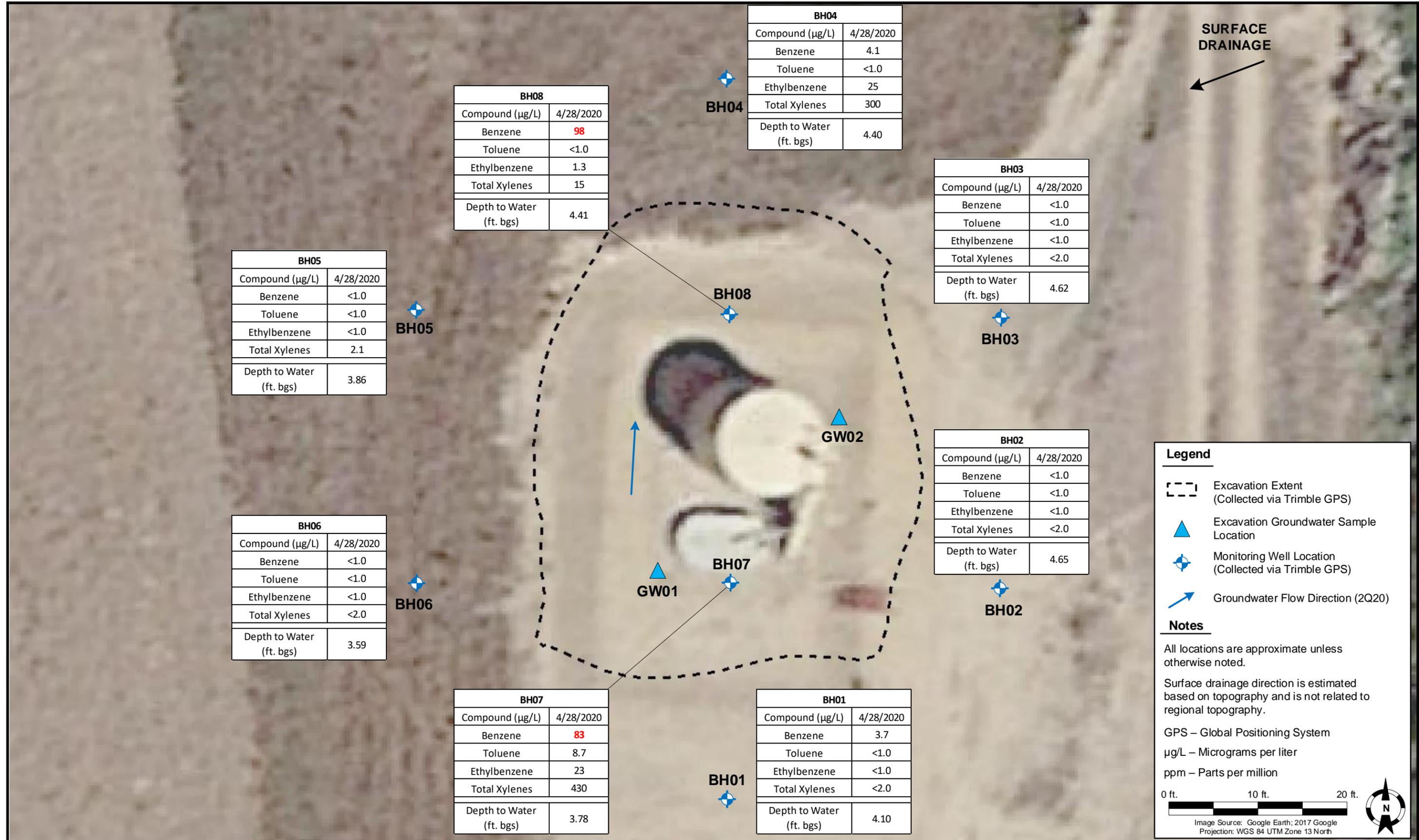
Soil analytical results collected during monitoring well installation activities indicated that organic compound concentrations were below the applicable COGCC Table 910-1 soil standards in all sampled intervals. Soil analytical results are summarized in Table 1 and the laboratory analytical report is included in Attachment B.

On April 28, 2020, groundwater monitoring was conducted at all eight monitoring wells (BH01 – BH08). Eight groundwater samples were submitted to Summit for analysis of BTEX by USEPA Method 8260B.

Second quarter 2020 analytical results indicated that benzene concentrations were above the applicable COGCC Table 910-1 groundwater standard in monitoring wells BH07 and BH08. BTEX concentrations were below the regulatory standards in the remaining six monitoring well locations. Sample locations and corresponding analytical results are illustrated on Figure 1. Groundwater elevation data is illustrated on Figure 2. Groundwater analytical results are summarized in Table 2. The laboratory analytical report is included in Attachment B.

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the second quarter 2020 and will remain the selected remediation strategy through the third quarter 2020.

Third quarter 2020 groundwater sampling will be conducted in July 2020.



DATE: May 15, 2020

DESIGNED BY: C. Hamlin

DRAWN BY: M. Dahlgren

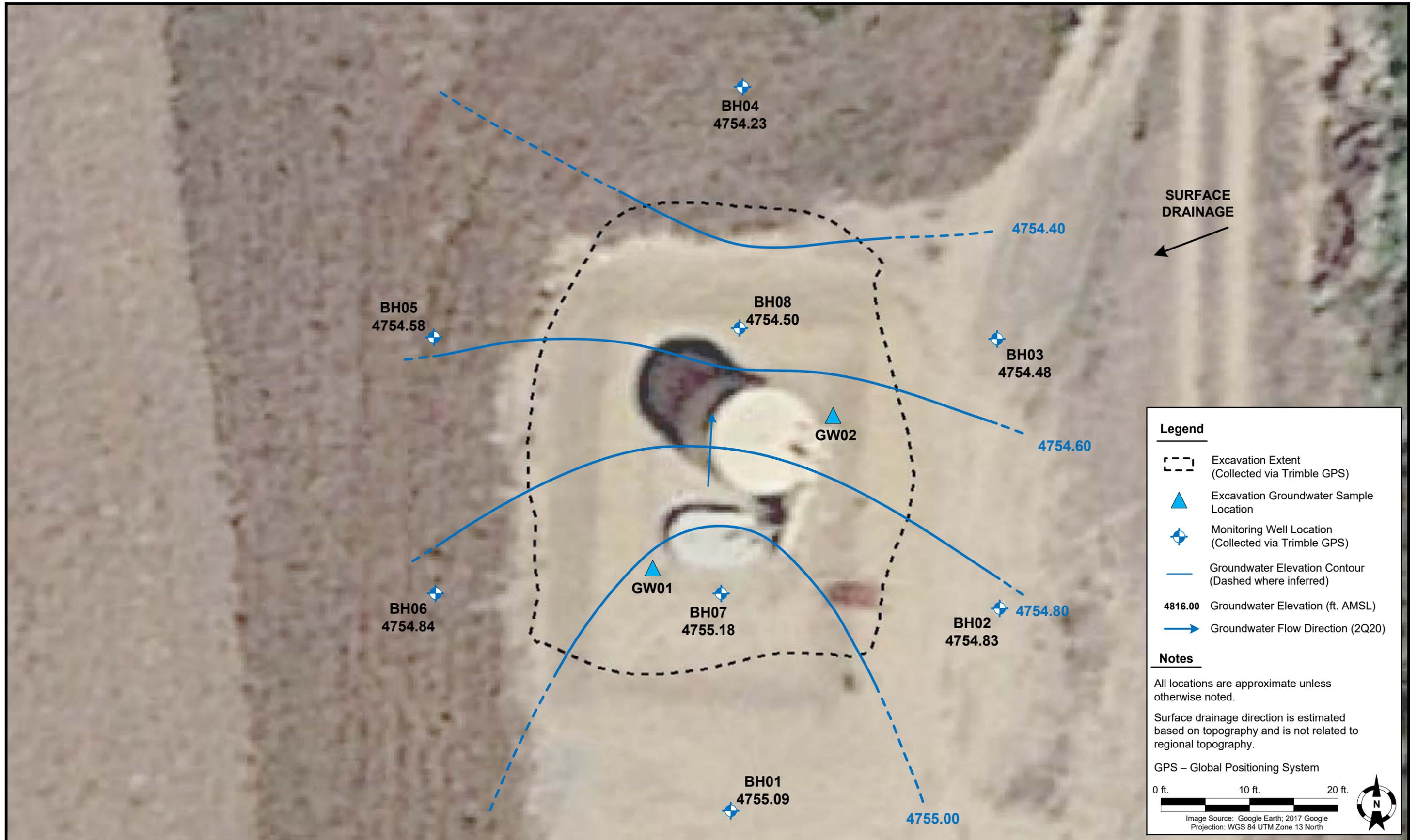


Tasman Geosciences, Inc.
 6855 W. 119th Ave.
 Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Schwab 26-6F Tank Battery
 SENW, Section 26, Township 4 North, Range 66 West
 Weld County, Colorado

**GROUNDWATER
 ANALYTICAL RESULTS
 MAP**

**FIGURE
 1**



DATE: May 5, 2020

DESIGNED BY: C. Hamlin

DRAWN BY: L. Martin



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

PDC Energy, Inc. – DJ Basin
Former Schwab 26-6F Tank Battery
SENW, Section 26, Township 4 North, Range 66 West
Weld County, Colorado

**GROUNDWATER
ELEVATION CONTOUR
MAP (04/28/2020)**

**FIGURE
2**

**TABLE 1
FORMER SCHWAB 26-6F TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH ⁽²⁾ (mg/kg)
COGCC Table 910-1 Soil Standard (mg/kg) ⁽¹⁾			0.17	85	100	175	23	500
SS03 @ 6'	2/21/2020	6	1.5	2.9	3.4	37	0.61	1,590
S01 @ 8'	2/24/2020	8	0.11	0.22	0.12	14	0.017	40
SS11 @ 6'	2/26/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS12 @ 7.5'	2/26/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS13 @ 8'	2/26/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS14 @ 6'	2/26/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS15 @ 7.5'	2/26/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS16 @ 6'	2/27/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	4.4
SS17 @ 7.5'	2/27/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS18 @ 6'	2/27/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS19 @ 7.5'	2/27/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS20 @ 8'	2/27/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS21 @ 6'	2/27/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS22 @ 7.5'	2/27/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS23 @ 8'	2/27/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS24 @ 6'	2/27/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS25 @ 7.5'	2/27/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	1.4
SS26 @ 6'	2/27/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS27 @ 7.5'	2/27/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS28 @ 6'	2/27/2020	6	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS29 @ 7.5'	2/27/2020	7.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH04 @ 4-5'	4/22/2020	4-5	<0.0020	<0.0050	0.012	0.33	<0.010	76
BH04 @ 12-13'	4/22/2020	12-13	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH07 @ 8-9'	4/22/2020	8-9	<0.0020	0.0080	<0.0050	1.1	<0.010	127
BH07 @ 12-13'	4/22/2020	12-13	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

Notes:

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.

2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

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

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

ft bgs = Feet below ground surface

BOLD = Analytical result is in exceedance of COGCC soil standards.

TABLE 2
FORMER SCHWAB 26-6F TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water ⁽²⁾ (ft)	Groundwater Elevation (ft AMSL)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400		
GW01	2/21/2020	35	66	24	390	~ 7	NM
GW02	3/2/2020	120	170	15	430	~ 7	NM
BH01	4/28/2020	3.7	<1.0	<1.0	<2.0	4.10	4755.09
BH02	4/28/2020	<1.0	<1.0	<1.0	<2.0	4.65	4754.83
BH03	4/28/2020	<1.0	<1.0	<1.0	<2.0	4.62	4754.48
BH04	4/28/2020	4.1	<1.0	25	300	4.40	4754.23
BH05	4/28/2020	<1.0	<1.0	<1.0	2.1	3.86	4754.58
BH06	4/28/2020	<1.0	<1.0	<1.0	<2.0	3.59	4754.84
BH07	4/28/2020	83	8.7	23	430	3.78	4755.18
BH08	4/28/2020	98	<1.0	1.3	15	4.41	4754.50

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective May 1, 2018.
2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

ft = Feet

AMSL = Above Mean Sea Level

NM = Not measured

BOLD = Analytical result is in exceedance of COGCC groundwater standards.

Attachment A



Borehole Logging Form

BOREHOLE ID: BH01 SITE NAME: Schwab 26-6F CLIENT NAME: PDC ENERGY

Date Completed: 4/22/20 Location: S POC

Drilling Company: Tasman Surface Completion: stick-up DTW: 5' TD: 13'

Type of Drill: Direct Push Probe Geologist: M. DeWitt Project Manager: C. Hamlin

Bit Size: 2 7/8" Logging Method: Hand Auger / Macro log

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.10 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							
2							
3							
4		HA	100%	2.2		SM	
5							same as above, saturated
6							
7				3.1			
8		macro	50%				
9		low		1.6		SC	Tan clayey sand, moderately sorted, fine to coarse grain, saturated, no odor
10							
11							
12			75%	1.5			
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: BH02 SITE NAME: Schwab 26-6F CLIENT NAME: PDC ENERGY

Date Completed: 4/22/20 Location: SE POC

Drilling Company: Tasman Surface Completion: Stick-up DTW: 5.5' TD: 13'

Type of Drill: Direct Push Probe Geologist: M. Dahlen Project Manager: C. Hamlin

Bit Size: 2 1/8" Logging Method: Hand Auger / Macro liner

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.10 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1						↑	Fin silty sand, Moderately sorted, fine to med-grained, dry, no odor
2							
3		HA	100%	0.7		SM	
4							
5							
6							Same as above, saturated
7		Macro		1.7			
8		liner	100%				
9				0.9		SC	Fin clayey sand, Moderately sorted, fine to medium grain, saturated, no odor
10							
11							
12			100%	1.9			
13							
14	x						
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: B103 SITE NAME: Schwab 26-6F CLIENT NAME: PDC ENERGY

Date Completed: 4/22/20 Location: NB, POC

Drilling Company: Tasman Surface Completion: stick-up DTW: 5' TD: 13

Type of Drill: Direct Push Probe Geologist: M. Doherty Project Manager: C. Hamlin

Bit Size: 2 3/8" Logging Method: Hand Auger / Macro liner

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.10 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1						↑	Brn Silty Sand, moderately sorted, fine to coarse. SFM, dry, no odor
2							
3		HA	100%	0.9		SM	
4							
5							Same as above, saturated
6							
7							
8		Macro		0.7			
9		liner	100%	1.2		SC	fin clayey Sand, moderately sorted, fine to med. grain, saturated, no odor
10							
11							
12			100%	1.1			
13							
14	x						
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: **BH04** SITE NAME: Schwab 26-6F CLIENT NAME: PDC ENERGY

Date Completed: **4/22/20** Location: **N POC**

Drilling Company: **Tasman** Surface Completion: **St-ck-OP** DTW: **5.5** TD: **13'**

Type of Drill: **Direct Push Probe** Geologist: **M. Dahlgren** Project Manager: **C. Hamlin**

Bit Size: **2 3/8"** Logging Method: **Hand Auger / Macro Lines**

Well Const. Material: Diameter: **1"** Screen: **Sch 40 PVC Slotted 0.10** Riser: **Sch 40 PVC Blank**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							Fin Silty Sand, Poorly sorted, fine to coarse grain, silty, no odor
2						SM	
3		HA	100%				
4							
5				65.4	BH04 4-5" 935	SC	Gray/black clayey sand, moderately sorted, fine to med. grain, no st, slight odor
6							Same as above, saturated
7				43.2			
8		Macro 1.2v	90%				Tan clayey sand, moderately sorted, fine to med. grain, saturated, no odor
9				12.2			
10							
11			80%	8.2			
12							
13					BH04 12-13" 940		
14	X						
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: BH05 SITE NAME: Schwab 26-6F CLIENT NAME: PDC ENERGY

Date Completed: 4/22/20 Location: NW Pec

Drilling Company: Tasman Surface Completion: Stack-UP DTW: 6' TD: 13'

Type of Drill: Direct Push Probe Geologist: M. Dalgren Project Manager: C. Hamlin

Bit Size: Logging Method: Hand Auger / Macro Lines

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.10 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1							Bin-Tan silty sand, poorly sorted, fine to coarse grain, dry, no odor
2		HA		0.0		SM	
3			100%				
4							Tan silty sand moderately sorted, fine to medium grain, Mo-St no odor
5				0.8			
6							Same as above, saturated
7		Macro Lines		1.7			
8			50%				
9				1.8		SC	Tan clayey sand, moderately sorted, fine to medium grain, saturated, no odor
10							
11							
12			75%	0.9			
13							
14	X						
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: BH06 SITE NAME: Schwab 26-6F CLIENT NAME: PDC ENERGY

Date Completed: 4/22/20 Location: SW POC

Drilling Company: Tasman Surface Completion: Stick-UP DTW: 6' TD: 13'

Type of Drill: Direct Push Probe Geologist: M. Dahlgren Project Manager: C. Hamlin

Bit Size: Logging Method:

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.10 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1						↑	Brn Silty Sand moderately sorted, fine to med. grain, dry, no odor
2						SM	
3		HA	100%	0.7			
4							
5							
6							
7							Same as above, Saturated
8		Macro	50%	1.6			
9		Micro					
10						SC	Tan Clayey Sand, moderately sorted, fine to med. grain, Saturated, no odor
11							
12			75%	1.8			
13							
14	x						
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: **BH07** SITE NAME: Schwab 26-6F CLIENT NAME: PDC ENERGY

Date Completed: **4/22/20** Location: **S Source**

Drilling Company: **Tasman** Surface Completion: **Stick-up** DTW: **5'** TD: **13'**

Type of Drill: **Direct Push Probe** Geologist: **M. Dahlgren** Project Manager: **C. Hamlin**

Bit Size: **2 3/8"** Logging Method: **Hand Auger / Macro liner**

Well Const. Material: Diameter: **1"** Screen: **Sch 40 PVC Slotted 0.10** Riser: **Sch 40 PVC Blank**

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1						↑	Btm Silty Sand moderately sorted, fine to med. grain, dry, no odor
2							
3		HA	100%	0.7		SM	
4							
5							Same as above, Saturated
6							
7							
8		Macro		22.1			
9		Core	80%	1,105	BH07@8' 1050	SM	Gray-Tan silty sand, moderately sorted, fine to coarse grain, Saturated, slight odor
10				15.7		SC	Tan Clayey sand, moderately sorted, fine to coarse grain, Saturated, no odor
11				2.8			
12							
13				2.9	BH07@12-13' 1055	↓	
14	*						
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: BH08 **SITE NAME:** Schwab 26-6F **CLIENT NAME:** PDC ENERGY
Date Completed: 4/22/20 **Location:** N Source
Drilling Company: Tasman **Surface Completion:** ST-CK-VP **DTW:** 6' **TD:** 13'
Type of Drill: Direct Push Probe **Geologist:** M. Dohlgren **Project Manager:** C. Hamlin
Bit Size: 2 3/8" **Logging Method:** HAND/AMR / Macro lines
Well Const. Material: Diameter: 1" **Screen:** Sch 40 PVC Slotted 0.10 **Riser:** Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1						↑	Brn s. itz Sand, moderately sorted, fine to med. grain, dry, no odor
2							
3		HA	100%	0.7		SM	
4							
5							
6							
7		Macro		42.4			lt gray/tan s. itz Sand, saturated, moderately sorted, fine to med. grain, no odor
8		1.0	90%				
9							
10				10.4		SC	Tan clayey Sand, moderately sorted, fine to coarse grain, saturated, no odor
11							
12			75%	3.9			
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Attachment B

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 27, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Schwab 26-6F

Work Order #2004299

Enclosed are the results of analyses for samples received by Summit Scientific on 04/22/20 16:10. 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, stylized 'M' and 'P'.

Muri Premer For Paul Shrewsbury
President



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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
04/27/20 16:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH04@4-5'	2004299-01	Soil	04/22/20 09:35	04/22/20 16:10
BH04@12-13'	2004299-02	Soil	04/22/20 09:40	04/22/20 16:10
BH07@8-9'	2004299-03	Soil	04/22/20 10:50	04/22/20 16:10
BH07@12-13'	2004299-04	Soil	04/22/20 10:55	04/22/20 16:10

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

2004299

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

Page 1 of 1

Client: PDC / Fasman	Project Manager: Mark Longhurst
Address: 6855 W 119th Ave	E-Mail: mark.longhurst@PDCI.com
City/State/Zip: Broomfield/ CO/ 80020	
Phone: 303-487-1228	Project Name: Schwab 26-6F
Sampler Name: Max Dehly/ST	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	\$260 BTEX	\$260B GBTEXN	\$015 DRO		pH/EC
1	BH04 @ 4-5'	4/22/20	935	1			X						X	X			
2	BH04 @ 12-13'		940														
3	BH07 @ 8-9'		1050														
4	BH07 @ 12-13'		1055														
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: 	Date/Time: 4/22/20	Received by: Fasman's Lock Box 	Date/Time: 04/22/2020	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: 5.7 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: Fasman's Lock Box	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 2004299

Client: PDC/TASMAN Client Project ID: SCHWAB 2C-6F

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

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

Temp (°C)	<u>5.7</u>
-----------	------------

Thermometer ID: 61857155-K

	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 provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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, ect	<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.

BB
 Custodian Printed Name or Initials

[Signature]
 Signature of Custodian

04/22/2020 1616
 Date/Time



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

Project: Schwab 26-6F

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/20 16:21

BH04@4-5'
2004299-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/22/20 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2004284	04/23/20	04/24/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.012	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.33	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	11	0.50		"	"	"	"	"	"	

Date Sampled: **04/22/20 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		95.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		131 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/22/20 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	65	50		mg/kg	1	2004283	04/23/20	04/23/20	EPA 8015M	

Date Sampled: **04/22/20 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		107 %		30-150		"	"	"	"	

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: Schwab 26-6F

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/20 16:21

BH04@12-13'
2004299-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/22/20 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2004284	04/23/20	04/24/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/22/20 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/22/20 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2004283	04/23/20	04/23/20	EPA 8015M	

Date Sampled: **04/22/20 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

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: Schwab 26-6F

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/20 16:21

BH07@8-9'
2004299-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/22/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2004284	04/23/20	04/24/20	EPA 8260B	
Toluene	0.0080	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.1	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	42	0.50	"	"	"	"	"	"	

Date Sampled: **04/22/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		209 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/22/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	85	50	mg/kg	1	2004283	04/23/20	04/23/20	EPA 8015M	

Date Sampled: **04/22/20 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Schwab 26-6F

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/20 16:21

BH07@12-13'
2004299-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/22/20 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2004284	04/23/20	04/24/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/22/20 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		90.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/22/20 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2004283	04/23/20	04/23/20	EPA 8015M	

Date Sampled: **04/22/20 10:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Schwab 26-6F

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/20 16:21

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 2004284 - EPA 5030 Soil MS

Blank (2004284-BLK1)

Prepared: 04/23/20 Analyzed: 04/24/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0400		93.8	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	21-167			

LCS (2004284-BS1)

Prepared: 04/23/20 Analyzed: 04/24/20

Benzene	0.0704	0.0020	mg/kg	0.100		70.4	70-130			
Toluene	0.0721	0.0050	"	0.100		72.1	70-130			
Ethylbenzene	0.0874	0.0050	"	0.100		87.4	70-130			
m,p-Xylene	0.166	0.010	"	0.200		83.1	70-130			
o-Xylene	0.0850	0.0050	"	0.100		85.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0298		"	0.0400		74.6	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.0	21-167			

Matrix Spike (2004284-MS1)

Source: 2004299-02

Prepared: 04/23/20 Analyzed: 04/24/20

Benzene	0.0708	0.0020	mg/kg	0.100	ND	70.8	70-130			
Toluene	0.0738	0.0050	"	0.100	ND	73.8	70-130			
Ethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130			
m,p-Xylene	0.173	0.010	"	0.200	0.00468	83.9	70-130			
o-Xylene	0.0885	0.0050	"	0.100	ND	88.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0314		"	0.0400		78.5	23-173			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	21-167			

Summit Scientific

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



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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 04/27/20 16:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 2004284 - EPA 5030 Soil MS

Matrix Spike Dup (2004284-MSD1)

Source: 2004299-02

Prepared: 04/23/20 Analyzed: 04/24/20

Benzene	0.0739	0.0020	mg/kg	0.100	ND	73.9	70-130	4.23	30	
Toluene	0.0775	0.0050	"	0.100	ND	77.5	70-130	4.88	30	
Ethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	70-130	3.78	30	
m,p-Xylene	0.180	0.010	"	0.200	0.00468	87.6	70-130	4.15	30	
o-Xylene	0.0914	0.0050	"	0.100	ND	91.4	70-130	3.20	30	
Surrogate: 1,2-Dichloroethane-d4	0.0316		"	0.0400		79.0	23-173			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0400		92.8	21-167			

Summit Scientific

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



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

Project: Schwab 26-6F

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/27/20 16:21

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2004283 - EPA 3550A

Blank (2004283-BLK1)

Prepared & Analyzed: 04/23/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2004283-BS1)

Prepared & Analyzed: 04/23/20

C10-C28 (DRO) 530 50 mg/kg 500 106 70-130

Matrix Spike (2004283-MS1)

Source: 2004299-01

Prepared & Analyzed: 04/23/20

C10-C28 (DRO) 511 50 mg/kg 500 65.4 89.2 70-130

Matrix Spike Dup (2004283-MSD1)

Source: 2004299-01

Prepared & Analyzed: 04/23/20

C10-C28 (DRO) 521 50 mg/kg 500 65.4 91.2 70-130 1.94 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: Schwab 26-6F
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/27/20 16:21

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- 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

May 04, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

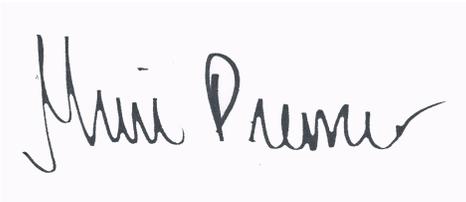
Denver, CO 80203

RE: Schwab 26-6F

Work Order #2004379

Enclosed are the results of analyses for samples received by Summit Scientific on 04/28/20 17:30. 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: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/04/20 12:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2004379-01	Water	04/28/20 15:42	04/28/20 17:30
BH02	2004379-02	Water	04/28/20 15:48	04/28/20 17:30
BH03	2004379-03	Water	04/28/20 15:53	04/28/20 17:30
BH04	2004379-04	Water	04/28/20 16:00	04/28/20 17:30
BH05	2004379-05	Water	04/28/20 15:48	04/28/20 17:30
BH06	2004379-06	Water	04/28/20 15:53	04/28/20 17:30
BH07	2004379-07	Water	04/28/20 15:58	04/28/20 17:30
BH08	2004379-08	Water	04/28/20 16:03	04/28/20 17:30

Summit Scientific

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

Summit Scientific

2004379

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: PDC/Tasman
Address: 6855 W 19th Ave
City/State/Zip: Broomfield CO 80020
Phone: 303-487-1228 Fax: -
Sampler Name: J Moraw

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com
Project Name: Schwab 26-GF
Project Number: n/a

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:						Special Instructions		
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)								
BH01	4/28/20	1542	3	X				X				BTEX							
BH02	4/28/20	1548	3	X				X				X							
BH03	4/28/20	1553	3	X				X				X							
BH04	4/28/20	1600	3	X				X				X							
BH05	4/28/20	1548	3	X				X				X							
BH06	4/28/20	1553	3	X				X				X							
BH07	4/28/20	1558	3	X				X				X							
BH08	4/28/20	1603	3	X				X				X							

Relinquished by: <u>[Signature]</u>	Date/Time: <u>4/28/20 1704</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>4/28/20 1709</u>	Turn Around Time (Check)		Notes:
				Same Day <input type="checkbox"/>	72 Hours <input type="checkbox"/>	
				24 Hours <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>	
Relinquished by: <u>TASMAN Lock Box</u>	Date/Time: <u>04/28/2020 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>04/28/2020 1730</u>	48 Hours <input type="checkbox"/>	Sample Integrity: <u>3.8</u>	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Temperature Upon Receipt: <u>3.8</u>	Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample Receipt Checklist

S2 Work Order 2004379

Client: PDC / TASMAN Client Project ID:

Schwab 26-14F

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Air Soil/Solid Water Other: Airbill #:

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

Temp (°C)	3.8
-----------	-----

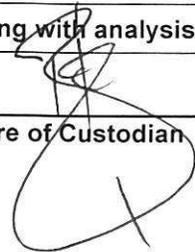
Thermometer ID: 61857155-K

	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 provided that there is evidence that cooling has begun.	✓			
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?		✓		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

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

RZ
Custodian Printed Name or Initials


Signature of Custodian

4/28/20
Date/Time



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

Project: Schwab 26-6F

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH01
2004379-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 15:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	3.7	1.0	ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/28/20 15:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		142 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Schwab 26-6F

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH02
2004379-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 15:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/28/20 15:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		140 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		90.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH03
2004379-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/28/20 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		153 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		92.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH04
2004379-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	4.1	1.0	ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	25	1.0	"	"	"	"	"	"	
Xylenes (total)	300	2.0	"	"	"	"	"	"	

Date Sampled: **04/28/20 16:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		139 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		81.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH05
2004379-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 15:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	2.1	2.0		"	"	"	"	"	"	

Date Sampled: **04/28/20 15:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		145 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		90.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		21-167		"	"	"	"	

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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH06
2004379-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/28/20 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		147 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		89.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167		"	"	"	"	

Summit Scientific



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

Project: Schwab 26-6F

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH07
2004379-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 15:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	83	1.0	ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	8.7	1.0	"	"	"	"	"	"	
Ethylbenzene	23	1.0	"	"	"	"	"	"	
Xylenes (total)	430	2.0	"	"	"	"	"	"	

Date Sampled: **04/28/20 15:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

BH08
2004379-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/28/20 16:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	98	1.0	ug/l	1	2004385	04/30/20	05/01/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	1.3	1.0	"	"	"	"	"	"	
Xylenes (total)	15	2.0	"	"	"	"	"	"	

Date Sampled: **04/28/20 16:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

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

Project: Schwab 26-6F

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/04/20 12:46

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch 2004385 - EPA 5030 Water MS

Blank (2004385-BLK1)

Prepared & Analyzed: 04/30/20

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Surrogate: 1,2-Dichloroethane-d4	16.2		"	13.3		122		23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.6		20-170			
Surrogate: 4-Bromofluorobenzene	14.4		"	13.3		108		21-167			

LCS (2004385-BS1)

Prepared & Analyzed: 04/30/20

Benzene	40.1	1.0	ug/l	33.3		120		51-132			
Toluene	37.4	1.0	"	33.3		112		51-138			
Ethylbenzene	39.1	1.0	"	33.3		117		58-146			
m,p-Xylene	72.1	2.0	"	66.7		108		57-144			
o-Xylene	38.2	1.0	"	33.3		114		53-146			
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.3		113		23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101		20-170			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		104		21-167			

Matrix Spike (2004385-MS1)

Source: 2004380-01

Prepared & Analyzed: 04/30/20

Benzene	40.1	1.0	ug/l	33.3	ND	120		34-141			
Toluene	37.7	1.0	"	33.3	ND	113		27-151			
Ethylbenzene	40.3	1.0	"	33.3	ND	121		29-160			
m,p-Xylene	74.2	2.0	"	66.7	1.05	110		20-166			
o-Xylene	39.6	1.0	"	33.3	ND	119		33-159			
Surrogate: 1,2-Dichloroethane-d4	15.9		"	13.3		119		23-173			
Surrogate: Toluene-d8	12.9		"	13.3		96.5		20-170			
Surrogate: 4-Bromofluorobenzene	14.3		"	13.3		107		21-167			

Summit Scientific

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

Project: Schwab 26-6F

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 05/04/20 12:46

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 2004385 - EPA 5030 Water MS

Matrix Spike Dup (2004385-MSD1)

Source: 2004380-01

Prepared: 04/30/20 Analyzed: 05/01/20

Benzene	41.0	1.0	ug/l	33.3	ND	123	34-141	2.10	30	
Toluene	38.6	1.0	"	33.3	ND	116	27-151	2.28	30	
Ethylbenzene	42.6	1.0	"	33.3	ND	128	29-160	5.48	30	
m,p-Xylene	77.8	2.0	"	66.7	1.05	115	20-166	4.75	30	
o-Xylene	41.0	1.0	"	33.3	ND	123	33-159	3.40	30	
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		118	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	21-167			

Summit Scientific

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

Project: Schwab 26-6F
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/04/20 12:46

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