

PDC Energy, Inc.
Second Quarter 2021 Groundwater Monitoring Summary

May 25, 2021

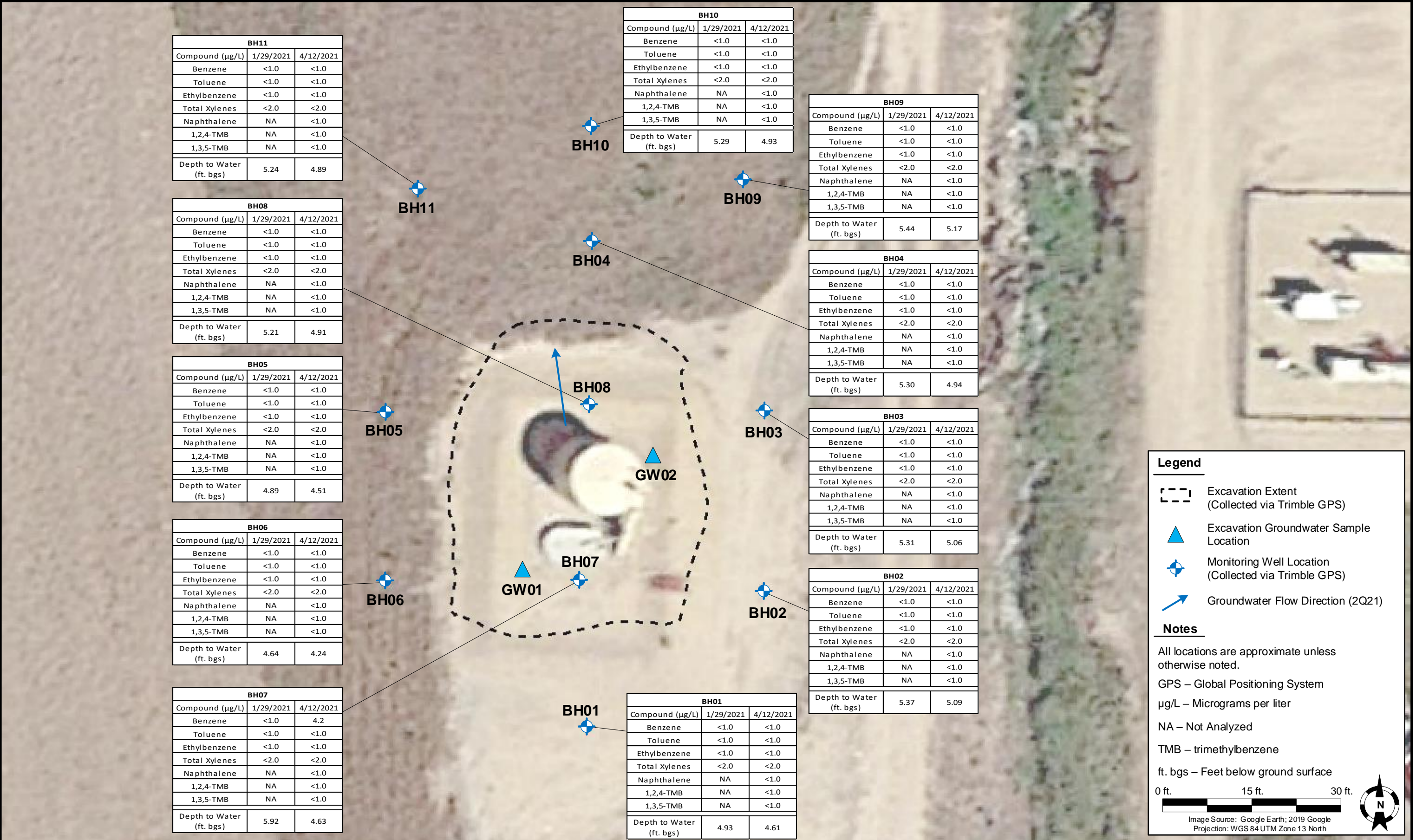
Former Schwab 26-6F Tank Battery
SENW Section 26 T4N R66W
Remediation # 15032

This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Schwab 26-6F tank battery. On April 12, 2021, groundwater monitoring was conducted at all 11 monitoring wells (BH01 – BH11). Eleven groundwater samples were submitted to Summit Scientific Laboratories for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B. In addition, three groundwater samples (BH01, BH07, BH10) were submitted for analysis of total dissolved solids (TDS) by Method SM 2540C, chloride, and sulfate anions by EPA Method 300.0.

Second quarter 2021 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 groundwater standards in all 11 monitoring well locations. TDS and chloride levels were above 1.25x of the background concentrations collected from the up-gradient monitoring well (BH01) in monitoring well BH07. Additionally, sulfate ion concentrations were above 1.25x of the background concentration in monitoring wells BH07 and BH10. Sample locations and corresponding analytical results are illustrated on Figure 1. Groundwater elevation data is illustrated on Figure 2. Historical groundwater analytical results are summarized in Table 1. Groundwater organic analytical results are summarized in Table 2. Inorganic analytical results are summarized in Table 3. The laboratory analytical report is included in Attachment A.

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 2021.

Third quarter 2021 groundwater sampling will be conducted in July 2021.



DATE:	May 25, 2021
DESIGNED BY:	C. Hamlin
DRAWN BY:	J. Marcus



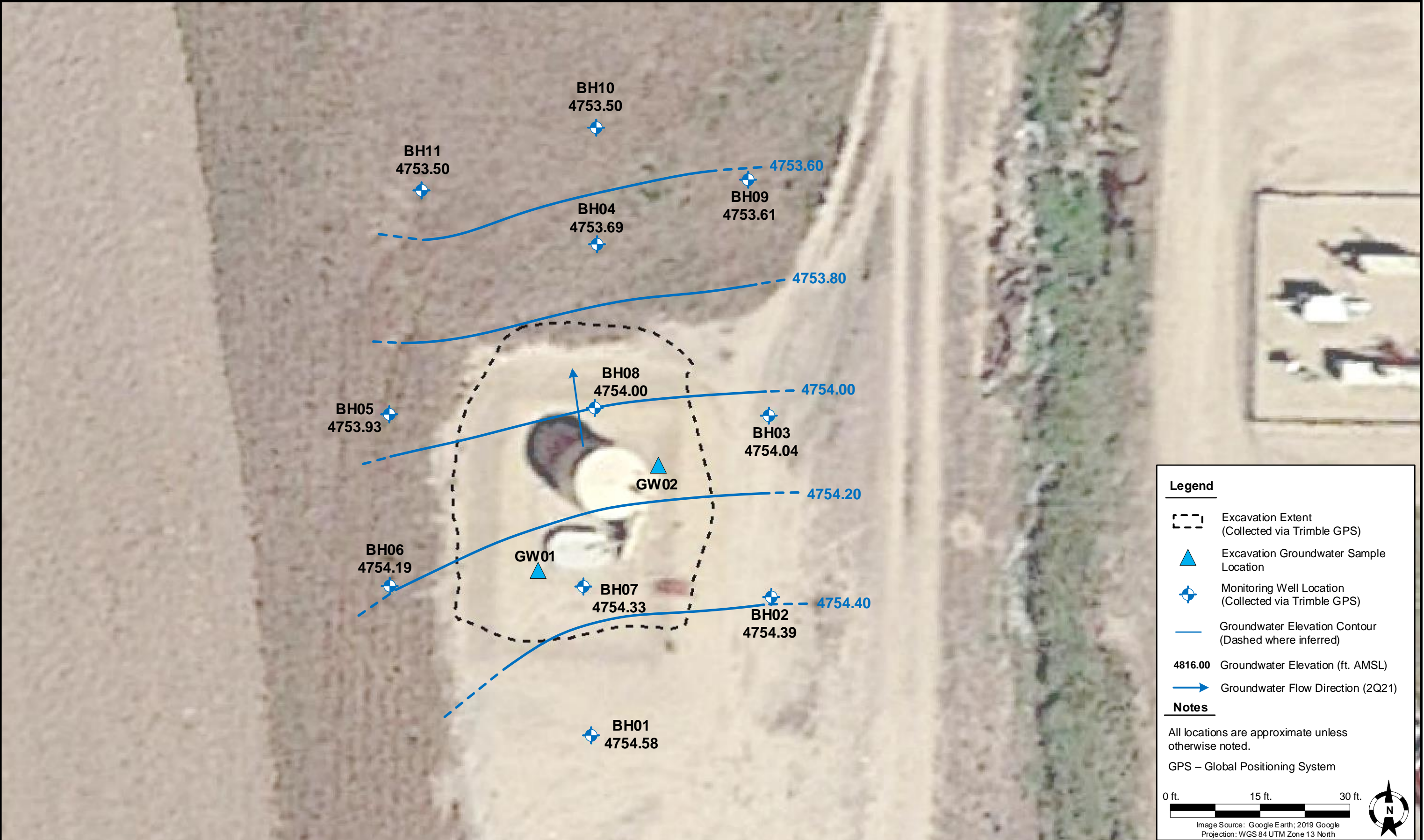
TASMAN
GEOSCIENCES

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:	April 13, 2020
DESIGNED BY:	C. Hamlin
DRAWN BY:	C. Ambler



TASMAN
GEOSCIENCES

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 (04/12/2021)

FIGURE
2

TABLE 1
FORMER SCHWAB 26-6F TANK BATTERY
HISTORICAL 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
BH01	7/1/2020	<1.0	<1.0	<1.0	<2.0	3.92	4755.27
BH01	10/26/2020	<1.0	<1.0	<1.0	<2.0	4.81	4754.38
BH01	1/29/2021	<1.0	<1.0	<1.0	<2.0	4.93	4754.26
BH02	4/28/2020	<1.0	<1.0	<1.0	<2.0	4.65	4754.83
BH02	7/1/2020	<1.0	<1.0	<1.0	<2.0	4.40	4755.08
BH02	10/26/2020	<1.0	<1.0	<1.0	<2.0	5.24	4754.24
BH02	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.37	4754.11
BH03	4/28/2020	<1.0	<1.0	<1.0	<2.0	4.62	4754.48
BH03	7/1/2020	<1.0	<1.0	<1.0	<2.0	4.38	4754.72
BH03	10/26/2020	<1.0	<1.0	<1.0	<2.0	5.26	4753.84
BH03	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.31	4753.79
BH04	4/28/2020	4.1	<1.0	25	300	4.40	4754.23
BH04	7/1/2020	13	<1.0	22	120	4.24	4754.39
BH04	10/26/2020	<1.0	<1.0	<1.0	<2.0	5.14	4753.49
BH04	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.30	4753.33
BH05	4/28/2020	<1.0	<1.0	<1.0	2.1	3.86	4754.58
BH05	7/1/2020	<1.0	<1.0	<1.0	<2.0	3.76	4754.68
BH05	10/26/2020	<1.0	<1.0	<1.0	<2.0	4.73	4753.71
BH05	1/29/2021	<1.0	<1.0	<1.0	<2.0	4.89	4753.55
BH06	4/28/2020	<1.0	<1.0	<1.0	<2.0	3.59	4754.84
BH06	7/1/2020	<1.0	<1.0	<1.0	<2.0	3.50	4754.93
BH06	10/26/2020	<1.0	<1.0	<1.0	<2.0	4.47	4753.96
BH06	1/29/2021	<1.0	<1.0	<1.0	<2.0	4.64	4753.79
BH07	4/28/2020	83	8.7	23	430	3.78	4755.18
BH07	7/1/2020	310	<1.0	11	81	3.87	4755.09
BH07	10/26/2020	<1.0	<1.0	<1.0	<2.0	4.84	4754.12
BH07	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.92	4753.04
BH08	4/28/2020	98	<1.0	1.3	15	4.41	4754.50
BH08	7/1/2020	25	<1.0	<1.0	<2.0	4.22	4754.69
BH08	10/26/2020	<1.0	<1.0	<1.0	<2.0	5.11	4753.80
BH08	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.21	4753.70
BH09	10/26/2020	<1.0	<1.0	<1.0	<2.0	5.32	4753.46

TABLE 1
FORMER SCHWAB 26-6F TANK BATTERY
HISTORICAL 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		
BH09	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.44	4753.34
BH10	10/26/2020	<1.0	<1.0	<1.0	<2.0	5.13	4753.30
BH10	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.29	4753.14
BH11	10/26/2020	<1.0	<1.0	<1.0	<2.0	5.07	4753.32
BH11	1/29/2021	<1.0	<1.0	<1.0	<2.0	5.24	4753.15

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.

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

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH01	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.61	4754.58
BH02	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.09	4754.39
BH03	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.06	4754.04
BH04	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.94	4753.69
BH05	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.51	4753.93
BH06	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.24	4754.19
BH07	4/12/2021	4.2	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.63	4754.33
BH08	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.91	4754.00
BH09	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.17	4753.61
BH10	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.93	4753.50
BH11	4/12/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.89	4753.50

Notes:

- Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
 - Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.
- TMB = Trimethylbenzene
COGCC = Colorado Oil and Gas Conservation Commission
µg/L = Micrograms per liter
(<) = Analytical result is less than the indicated laboratory reporting limit.
ft. = Feet
AMSL = Above Mean Sea Level

TABLE 3
FORMER SCHWAB 26-6F TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG
BH01	4/12/2021	1020	184	251
BH07	4/12/2021	1,540	276	3,100
BH10	4/12/2021	986	192	6,160

Notes:

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

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

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

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

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 21, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Schwab 26-6F

Work Order #2104194

Enclosed are the results of analyses for samples received by Summit Scientific on 04/12/21 17:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

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:
04/21/21 15:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2104194-01	Water	04/12/21 12:10	04/12/21 17:25
BH02	2104194-02	Water	04/12/21 12:41	04/12/21 17:25
BH03	2104194-03	Water	04/12/21 12:30	04/12/21 17:25
BH04	2104194-04	Water	04/12/21 12:35	04/12/21 17:25
BH05	2104194-05	Water	04/12/21 12:27	04/12/21 17:25
BH06	2104194-06	Water	04/12/21 12:23	04/12/21 17:25
BH07	2104194-07	Water	04/12/21 12:31	04/12/21 17:25
BH08	2104194-08	Water	04/12/21 12:50	04/12/21 17:25
BH09	2104194-09	Water	04/12/21 12:14	04/12/21 17:25
BH10	2104194-10	Water	04/12/21 12:03	04/12/21 17:25
BH11	2104194-11	Water	04/12/21 12:18	04/12/21 17:25

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.

2104194.1

Summit Scientific

S₂

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

Page 1 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave.

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield, CO 80020

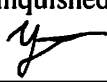
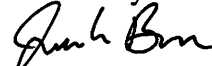
Phone: 303-487-1228

Project Name: Schwab 26-6F

Sampler Name: Yianni Tsambis

Project Number: n/a

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEX	NAP	1,2,4 TMB	1,3,5 TMB	TDS	Chloride	Sulfate		
																					915 Standards
1	BH01	4/12/2021	1210	4	X				X				X	X	X	X	X	X	X		
2	BH02	4/12/2021	1241	3	X				X				X	X	X	X					
3	BH03	4/12/2021	1230	3	X				X				X	X	X	X					
4	BH04	4/12/2021	1235	3	X				X				X	X	X	X					
5	BH05	4/12/2021	1227	3	X				X				X	X	X	X					
6	BH06	4/12/2021	1223	3	X				X				X	X	X	X					
7	BH07	4/12/2021	1231	4	X				X				X	X	X	X	X	X	X		
8	BH08	4/12/2021	1250	3	X				X				X	X	X	X					
9	BH09	4/12/2021	1214	3	X				X				X	X	X	X					
10	BH10	4/12/2021	1203	4	X				X				X	X	X	X	X	X	X		

Relinquished by: 	Date/Time: 4/12/21 1440	Received by: Tasman's Lock Box	Date/Time: 4/12/21 1440	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <u>X</u> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>4</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: Tasman Lockbox	Date/Time: 4/12/21 1725	Received by: 	Date/Time: 4/12/21 1725		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

2104194.2

Summit Scientific

S₂

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

Page 2 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave.

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield, CO 80020


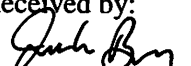
Phone: 303-487-1228

Project Name: Schwab 26-6F

Sampler Name: Yianni Tsambis

Project Number: n/a

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	BTEX	NAP	1,2,4 TMB	1,3,5 TMB	TDS	Chloride	Sulfate		
1	BH11	4/12/2021	1218	3	X				X					X	X	X	X				915 Standards
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 4/12/21 1440	Received by: Tasman's Lock Box	Date/Time: 4/12/21 1440	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <u>X</u> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>4</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: Tasman Lockbox	Date/Time: 4/12/21 1725	Received by: 	Date/Time: 4/12/21 1725		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order

2104194

Client: PDC / Tasman

Client Project ID: Schwab 26-6F

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

Airbill #: _____

Matrix (check all that apply):

☐ Air

☐ Soil/Solid

☒ Water

☐ Other: _____

(Describe)

Temp (°C)

4

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"/>	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 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 type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name or Initials

JB

Signature of Custodian

John Ben

Date/Time

4/12/21 1830



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

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

Reported:
04/21/21 15:37

BH01
2104194-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/15/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		85.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/12/21 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	184	12.0	mg/L	200	BED0274	04/15/21	04/20/21	EPA 300.0	
Sulfate	251	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/12/21 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	1020	10.0	mg/L	1	BED0245	04/14/21	04/15/21	SM2540C	

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:
04/21/21 15:37

BH02
2104194-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/15/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	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:
04/21/21 15:37

BH03
2104194-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/15/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	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:
04/21/21 15:37

BH04
2104194-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	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:
04/21/21 15:37

BH05
2104194-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		85.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	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:
04/21/21 15:37

BH06
2104194-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	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:
04/21/21 15:37

BH07
2104194-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	4.2	1.0		ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **04/12/21 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/12/21 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sulfate	3100	60.0		mg/L	200	BED0274	04/15/21	04/20/21	EPA 300.0	
Chloride	276	12.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/12/21 12:31**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1540	10.0		mg/L	1	BED0245	04/14/21	04/15/21	SM2540C	

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:
04/21/21 15:37

BH08
2104194-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		88.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	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:
04/21/21 15:37

BH09
2104194-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		87.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	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:
04/21/21 15:37

BH10
2104194-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **04/12/21 12:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		132 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/12/21 12:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sulfate	6160	60.0		mg/L	200	BED0274	04/15/21	04/20/21	EPA 300.0	
Chloride	192	12.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/12/21 12:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	986	10.0		mg/L	1	BED0245	04/14/21	04/15/21	SM2540C	

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:
04/21/21 15:37

BH11
2104194-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/21 12:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BED0282	04/15/21	04/16/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/12/21 12:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	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:
04/21/21 15:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BED0282 - EPA 5030 Water MS

Blank (BED0282-BLK1)

Prepared & Analyzed: 04/15/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		103	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.8	21-167			

LCS (BED0282-BS1)

Prepared & Analyzed: 04/15/21

Benzene	35.1	1.0	ug/l	33.3		105	51-132			
Toluene	37.8	1.0	"	33.3		113	51-138			
Ethylbenzene	41.6	1.0	"	33.3		125	58-146			
m,p-Xylene	78.0	2.0	"	66.7		117	57-144			
o-Xylene	40.3	1.0	"	33.3		121	53-146			
Naphthalene	41.1	1.0	"	33.3		123	70-130			
1,2,4-Trimethylbenzene	30.9	1.0	"	33.3		92.6	70-130			
1,3,5-Trimethylbenzene	42.6	1.0	"	33.3		128	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.3		106	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.9	21-167			

Matrix Spike (BED0282-MS1)

Source: 2104194-01

Prepared & Analyzed: 04/15/21

Benzene	33.0	1.0	ug/l	33.3	ND	98.9	34-141			
Toluene	33.4	1.0	"	33.3	ND	100	27-151			
Ethylbenzene	41.7	1.0	"	33.3	ND	125	29-160			
m,p-Xylene	78.0	2.0	"	66.7	ND	117	20-166			
o-Xylene	40.0	1.0	"	33.3	ND	120	33-159			
Naphthalene	33.7	1.0	"	33.3	ND	101	70-130			
1,2,4-Trimethylbenzene	30.7	1.0	"	33.3	ND	92.1	70-130			
1,3,5-Trimethylbenzene	42.6	1.0	"	33.3	ND	128	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		104	23-173			
Surrogate: Toluene-d8	11.6		"	13.3		87.2	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	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:
04/21/21 15:37

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

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

Batch BED0282 - EPA 5030 Water MS

Matrix Spike Dup (BED0282-MSD1)	Source: 2104194-01			Prepared & Analyzed: 04/15/21						
Benzene	32.4	1.0	ug/l	33.3	ND	97.3	34-141	1.62	30	
Toluene	33.9	1.0	"	33.3	ND	102	27-151	1.64	30	
Ethylbenzene	42.2	1.0	"	33.3	ND	127	29-160	1.26	30	
m,p-Xylene	79.1	2.0	"	66.7	ND	119	20-166	1.43	30	
o-Xylene	41.5	1.0	"	33.3	ND	125	33-159	3.68	30	
Naphthalene	35.2	1.0	"	33.3	ND	106	70-130	4.44	30	
1,2,4-Trimethylbenzene	31.2	1.0	"	33.3	ND	93.6	70-130	1.62	30	
1,3,5-Trimethylbenzene	43.1	1.0	"	33.3	ND	129	70-130	1.07	30	
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.7	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2	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:
04/21/21 15:37

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BED0274 - General Preparation

Blank (BED0274-BLK1)

Prepared: 04/15/21 Analyzed: 04/20/21

Sulfate	ND	0.300	mg/L
Chloride	ND	0.0600	"

LCS (BED0274-BS1)

Prepared: 04/15/21 Analyzed: 04/20/21

Sulfate	16.0	0.300	mg/L	15.0	106	90-110
Chloride	3.21	0.0600	"	3.00	107	90-110

Duplicate (BED0274-DUP1)

Source: 2104194-01

Prepared: 04/15/21 Analyzed: 04/20/21

Chloride	183	12.0	mg/L	184	0.872	20
Sulfate	250	60.0	"	251	0.559	20

Matrix Spike (BED0274-MS1)

Source: 2104194-01

Prepared: 04/15/21 Analyzed: 04/20/21

Sulfate	3800	60.0	mg/L	3000	251	118	80-120
Chloride	779	12.0	"	600	184	99.1	80-120

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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:
04/21/21 15:37

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BED0245 - General Preparation

Blank (BED0245-BLK1)

Prepared: 04/14/21 Analyzed: 04/15/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BED0245-DUP1)

Source: 2104175-01

Prepared: 04/14/21 Analyzed: 04/15/21

Total Dissolved Solids 1500 10.0 mg/L 1500 0.200 20

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:
04/21/21 15:37

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