

**PDC Energy, Inc.**  
**Second Quarter 2021 Groundwater Monitoring Summary**

June 11, 2021

Former Latham 2-31 & Latham Reservoir 1 Tank Battery  
SESW SEC 2 T4N R65W  
Remediation # 16260

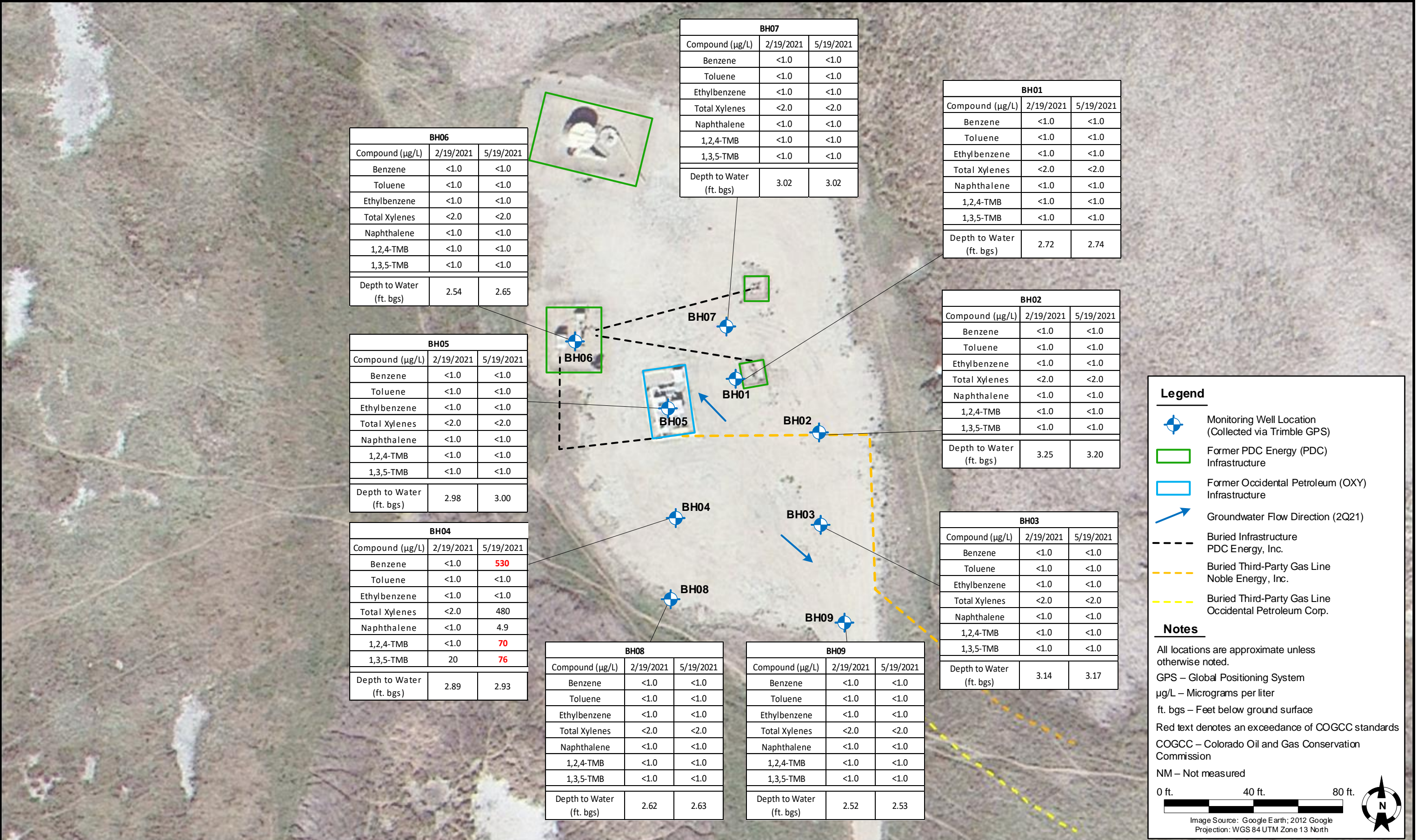
This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Latham 2-31 & Latham Reservoir 1 tank battery. On May 19, 2021, groundwater monitoring was conducted at all 9 monitoring wells (BH01 - BH09). Nine groundwater samples were submitted to Summit Scientific Laboratories (Summit) 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 (BH05, BH06, and BH09) 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 benzene, 1, 2, 4-TMB, and 1, 3, 5-TMB concentrations were above the applicable COGCC Table 915-1 groundwater standards in sample BH04. Organic compound concentrations were below regulatory standards in the eight remaining monitoring well locations. Inorganic compound concentrations were in exceedance of the applicable regulatory standards and 1.25x the concentration of the up-gradient monitoring well (BH06) in monitoring wells BH05 and BH09. 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 Tables 1 and 2. The laboratory analytical report is included in Attachment A.

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during third quarter 2020 and will remain the selected remediation strategy through the third quarter 2021.

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





DATE: June 11, 2021

DESIGNED BY: C. Hamlin

DRAWN BY: K. Fletcher



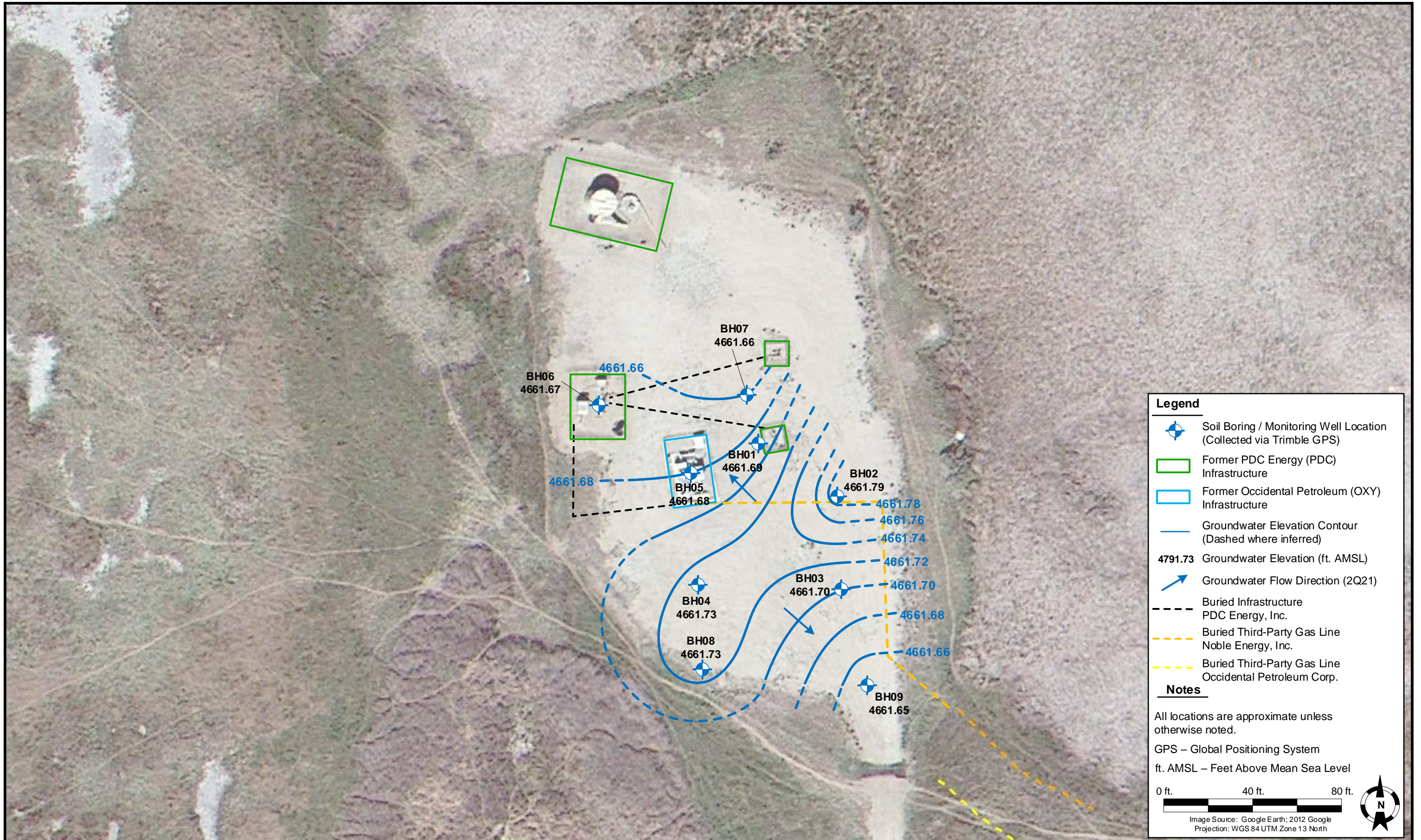
**Tasman Geosciences, Inc.**  
6855 West 119<sup>th</sup> Ave  
Broomfield, CO 80020

**PDC Energy, Inc. – DJ Basin**  
**Former Latham 2-31 & Latham Reservoir 1 Tank Battery**  
SESW, Section 2, Township 4 North, Range 65 West  
Weld County, Colorado

**GROUNDWATER  
ANALYTICAL RESULTS  
MAP**

**FIGURE  
1**







**TABLE 1**  
**FORMER LATHAM 2-31; LATHAM RESERVOIR 1 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**

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 <sup>(2)</sup> (ft.)	Groundwater Elevation (ft. AMSL)
<b>COGCC Table 915-1 Groundwater Standard (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>140</b>	<b>67</b>	<b>67</b>	<b>-</b>	<b>-</b>
BH01	9/14/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	5.20	4659.23
BH01	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.72	4661.71
BH01	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.74	4661.69
BH02	9/14/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	5.75	4659.24
BH02	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.25	4661.74
BH02	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.20	4661.79
BH03	9/14/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	5.60	4659.27
BH03	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.14	4661.73
BH03	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.17	4661.70
BH04	9/14/2020	<b>55</b>	<1.0	6.5	94	NA	NA	NA	5.39	4659.27
BH04	9/22/2020	<b>990</b>	<1.0	110	630	NA	NA	NA	NM	NM
BH04	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	20	2.89	4661.77
BH04	5/19/2021	<b>530</b>	<1.0	<1.0	480	4.9	<b>70</b>	<b>76</b>	2.93	4661.73
BH05	9/14/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	5.44	4659.24
BH05	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.98	4661.70
BH05	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.00	4661.68
BH06	9/14/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	5.10	4659.22
BH06	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.54	4661.78
BH06	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.65	4661.67
BH07	9/14/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	5.45	4659.23
BH07	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.02	4661.66
BH07	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.02	4661.66
BH08	10/22/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	4.60	4659.76
BH08	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.62	4661.74
BH08	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.63	4661.73
BH09	10/22/2020	<1.0	<1.0	<1.0	<2.0	NA	NA	NA	4.44	4659.74
BH09	2/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.52	4661.66
BH09	5/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.53	4661.65

**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  
NA = Constituent not analyzed  
AMSL = Above Mean Sea Level  
**BOLD** = Analytical result is in exceedance of applicable standard.

**TABLE 3**  
**FORMER LATHAM 2-31; LATHAM RESERVOIR 1 TANK BATTERY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC PARAMETERS**

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
<b>COGCC Table 915-1 Groundwater Standard (mg/L) <sup>(1)</sup></b>		<b>&lt;1.25 x BCKG</b>	<b>250 or &lt;1.25 x BCKG</b>	<b>250 or &lt;1.25 x BCKG</b>
BH05	5/19/2021	<b>3,810</b>	<b>618</b>	<b>1,680</b>
BH06	5/19/2021	2,260	<b>370</b>	<b>1,170</b>
BH09	5/19/2021	<b>3,730</b>	<b>438</b>	<b>1,540</b>

**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.

  = Up-gradient well location used for background concentration.

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

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

## Attachment A

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 27, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Latham 2-31; Latham Reservoir 1

Work Order #2105314

Enclosed are the results of analyses for samples received by Summit Scientific on 05/19/21 17:15. 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', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Latham 2-31; Latham Reservoir 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2105314-01	Water	05/19/21 13:45	05/19/21 17:15
BH02	2105314-02	Water	05/19/21 13:35	05/19/21 17:15
BH03	2105314-03	Water	05/19/21 13:25	05/19/21 17:15
BH04	2105314-04	Water	05/19/21 14:10	05/19/21 17:15
BH05	2105314-05	Water	05/19/21 13:42	05/19/21 17:15
BH06	2105314-06	Water	05/19/21 13:53	05/19/21 17:15
BH07	2105314-07	Water	05/19/21 13:55	05/19/21 17:15
BH08	2105314-08	Water	05/19/21 13:34	05/19/21 17:15
BH09	2105314-09	Water	05/19/21 13:23	05/19/21 17:15

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 2105314

S<sub>2</sub>

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

Page / of /

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: Latham 2-31, Latham Reservoir 1  
Sampler Name: Brandon VanHorn Project Number: N/A

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4/1,3,5-TMB	TDS	Chloride	Sulfate				
1	BH01	5/19/2021	1345	3			x		x				x	x	x							
2	BH02	5/19/2021	1335	3			x		x				x	x	x							
3	BH03	5/19/2021	1325	3			x		x				x	x	x							
4	BH04	5/19/2021	1410	3			x		x				x	x	x							
5	BH05	5/19/2021	1342	4			x		x				x	x	x	x	x	x				
6	BH06	5/19/2021	1353	4			x		x				x	x	x	x	x	x				
7	BH07	5/19/2021	1355	3			x		x				x	x	x							
8	BH08	5/19/2021	1334	3			x		x				x	x	x							
9	BH09	5/19/2021	1323	4			x		x				x	x	x	x	x	x				
10																						

Relinquished by: <i>Brandon V.</i> Date/Time: <i>5/19/21 1600</i>	Received by: <i>Tasman Lockbox</i> Date/Time: <i>5/19/21 1600</i>	<b>Turn Around Time</b> (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <u>X</u> 48 hours _____ <b>Sample Integrity:</b> Temperature Upon Receipt: <u>3</u> Samples Intact: <u>Yes</u> No	<b>Notes:</b>
Relinquished by: <i>Tasman Lockbox</i> Date/Time: <i>5/19/21 1715</i>	Received by: <i>Josh Brn</i> Date/Time: <i>5/19/21 1715</i>		
Relinquished by:	Received by:		

# Sample Receipt Checklist

S2 Work Order 2105314

Client: PDC / Tasman

Client Project ID: Latham 2-31, Latham Reservoir 1

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>3</u>
-----------	----------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
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 <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 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 <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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
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.

JB  
Custodian Printed Name or Initials

Josh Br  
Signature of Custodian

5/19/21  
Date/Time



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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH01**  
**2105314-01 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEE0414	05/21/21	05/21/21	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: **05/19/21 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %		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: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH02**  
**2105314-02 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEE0414	05/21/21	05/22/21	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: **05/19/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH03**  
**2105314-03 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEE0414	05/21/21	05/22/21	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: **05/19/21 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		81.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH04**  
**2105314-04 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>530</b>	10		ug/l	10	BEE0414	05/21/21	05/22/21	EPA 8260B	
Toluene	ND	1.0		"	1	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>480</b>	2.0		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>4.9</b>	1.0		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>70</b>	1.0		"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>76</b>	1.0		"	"	"	"	"	"	

Date Sampled: **05/19/21 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH05**  
**2105314-05 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEE0414	05/21/21	05/22/21	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: **05/19/21 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/19/21 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	<b>618</b>	12.0	mg/L	200	BEE0435	05/24/21	05/24/21	EPA 300.0	
Sulfate	<b>1680</b>	60.0	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/19/21 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	<b>3810</b>	10.0	mg/L	1	BEE0361	05/20/21	05/20/21	SM2540C	

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH06**  
**2105314-06 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEE0414	05/21/21	05/22/21	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: **05/19/21 13:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/19/21 13:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sulfate	1170	60.0		mg/L	200	BEE0435	05/24/21	05/24/21	EPA 300.0	
Chloride	370	12.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/19/21 13:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2260	10.0		mg/L	1	BEE0361	05/20/21	05/20/21	SM2540C	

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH07**  
**2105314-07 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEE0414	05/21/21	05/22/21	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: **05/19/21 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		123 %	21-167		"	"	"	"	

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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH08**  
**2105314-08 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEE0414	05/21/21	05/22/21	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: **05/19/21 13:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**BH09**  
**2105314-09 (Water)**

**Summit Scientific**

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

Date Sampled: **05/19/21 13:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEE0414	05/21/21	05/22/21	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: **05/19/21 13:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.7 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/19/21 13:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Sulfate	1540	60.0	mg/L	200	BEE0435	05/24/21	05/24/21	EPA 300.0	
Chloride	438	12.0	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/19/21 13:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3730	10.0	mg/L	1	BEE0361	05/20/21	05/20/21	SM2540C	

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

## 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 BEE0414 - EPA 5030 Water MS

##### Blank (BEE0414-BLK1)

Prepared & Analyzed: 05/21/21

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	14.4		"	13.3		108	23-173			
Surrogate: Toluene-d8	13.8		"	13.3		104	20-170			
Surrogate: 4-Bromofluorobenzene	14.2		"	13.3		107	21-167			

##### LCS (BEE0414-BS1)

Prepared & Analyzed: 05/21/21

Benzene	25.2	1.0	ug/l	33.3		75.6	51-132			
Toluene	27.5	1.0	"	33.3		82.5	51-138			
Ethylbenzene	40.8	1.0	"	33.3		122	58-146			
m,p-Xylene	74.5	2.0	"	66.7		112	57-144			
o-Xylene	45.8	1.0	"	33.3		137	53-146			
Naphthalene	36.3	1.0	"	33.3		109	70-130			
1,2,4-Trimethylbenzene	31.7	1.0	"	33.3		95.0	70-130			
1,3,5-Trimethylbenzene	34.7	1.0	"	33.3		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	11.3		"	13.3		84.8	20-170			
Surrogate: 4-Bromofluorobenzene	11.9		"	13.3		89.3	21-167			

##### Matrix Spike (BEE0414-MS1)

Source: 2105314-01

Prepared & Analyzed: 05/21/21

Benzene	25.9	1.0	ug/l	33.3	ND	77.7	34-141			
Toluene	33.9	1.0	"	33.3	ND	102	27-151			
Ethylbenzene	42.6	1.0	"	33.3	ND	128	29-160			
m,p-Xylene	82.3	2.0	"	66.7	ND	123	20-166			
o-Xylene	45.3	1.0	"	33.3	ND	136	33-159			
Naphthalene	45.2	1.0	"	33.3	ND	136	70-130			
1,2,4-Trimethylbenzene	38.2	1.0	"	33.3	ND	114	70-130			
1,3,5-Trimethylbenzene	33.8	1.0	"	33.3	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	14.5		"	13.3		109	21-167			

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**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 BEE0414 - EPA 5030 Water MS**

Matrix Spike Dup (BEE0414-MSD1)	Source: 2105314-01			Prepared & Analyzed: 05/21/21						
Benzene	24.9	1.0	ug/l	33.3	ND	74.7	34-141	3.98	30	
Toluene	33.0	1.0	"	33.3	ND	99.0	27-151	2.63	30	
Ethylbenzene	42.3	1.0	"	33.3	ND	127	29-160	0.707	30	
m,p-Xylene	82.3	2.0	"	66.7	ND	123	20-166	0.0365	30	
o-Xylene	46.2	1.0	"	33.3	ND	139	33-159	1.97	30	
Naphthalene	35.8	1.0	"	33.3	ND	107	70-130	23.4	30	
1,2,4-Trimethylbenzene	31.6	1.0	"	33.3	ND	94.8	70-130	18.8	30	
1,3,5-Trimethylbenzene	33.6	1.0	"	33.3	ND	101	70-130	0.741	30	
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		110	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.9	21-167			

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

### 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 BEE0435 - General Preparation

##### Blank (BEE0435-BLK1)

Prepared & Analyzed: 05/24/21

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

##### LCS (BEE0435-BS1)

Prepared & Analyzed: 05/24/21

Sulfate	16.2	0.300	mg/L	15.0	108	90-110
Chloride	3.26	0.0600	"	3.00	109	90-110

##### Duplicate (BEE0435-DUP1)

Source: 2105313-02

Prepared & Analyzed: 05/24/21

Sulfate	1070	60.0	mg/L	1120	4.34	20
Chloride	178	12.0	"	180	0.894	20

##### Matrix Spike (BEE0435-MS1)

Source: 2105313-02

Prepared & Analyzed: 05/24/21

Sulfate	3870	60.0	mg/L	3000	1120	91.6	80-120
Chloride	793	12.0	"	600	180	102	80-120

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

**Total Dissolved Solids by SM2540C - Quality Control**  
**Summit Scientific**

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

**Batch BEE0361 - General Preparation**

**Blank (BEE0361-BLK1)**

Prepared & Analyzed: 05/20/21

Total Dissolved Solids ND 10.0 mg/L

**Duplicate (BEE0361-DUP1)**

Source: 2105278-01

Prepared & Analyzed: 05/20/21

Total Dissolved Solids 3550 10.0 mg/L 3550 0.197 20

Summit Scientific

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

Project: Latham 2-31; Latham Reservoir 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/27/21 13:23

### 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