

TABLE 1
FORMER L-H #1, EDWARDS 16U TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
CONTAMINANTS OF CONCERN

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH ⁽⁴⁾ (mg/kg)	Fluorene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	240	18	24
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	0.54	0.006	0.019
AST01 @ 0-6"	7/14/2021	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA
SEP01-DL @ 4'	7/14/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA
SEP01-FL @ 4'	7/14/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA
SS01 @ 5'	7/14/2021	5 ft. bgs	0.12	<0.0050	0.37	<0.010	6.0	<0.0050	0.27	1,680	0.119	0.435	1.02
SS02 @ 20'	7/15/2021	20 ft. bgs	0.023	<0.0050	0.21	1.2	3.4	0.43	0.17	2,680	NA	NA	NA
SS03 @ 24'	8/13/2021	24 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA

Notes:

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

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

4. Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

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

TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH-ORO = Total extactable petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

M = Methylnaphthalene

TMB = Trimethylbenzene

= Source material characterization sample

ft. = Feet

in. = Inches

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

TABLE 2
FORMER L-H #1, EDWARDS 16U TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
SS01 @ 5'	7/14/2021	5 ft. bgs	8.01	0.438	0.455	0.171

Notes:

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

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

bgs = Below ground surface

= Source material characterization sample

TABLE 3
FORMER L-H #1, EDWARDS 16U TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS - PAHs

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^(1,2)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^(1,2,3)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS01 @ 5'	7/14/2021	5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.119	<0.00500	<0.00500	0.435	1.02

Notes:
1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with
COGCC = Colorado Oil and Gas Conservation Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
PAHs = Polycyclic aromatic hydrocarbons
Benz(a) = Benzanthracene
Benzo(a) = Benzopyrene
Benzo(b) = Benzofluoranthene
Benzo(k) = Benzofluoranthene
A,H = Dibenzoanthracene
1,2,3-CD = Indenopyrene
M = Methylnaphthalene
mg/kg = Milligrams per kilogram
= Source material characterization sample
ft. = Feet
bgs = Below ground surface
BOLD = Analytical result is in exceedance of applicable standard.

TABLE 4
FORMER L-H #1, EDWARDS 16U TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
METALS

Sample ID	Date Sampled	Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^(1,2)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^(1,2,3)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SS01 @ 5'	7/14/2021	5 ft. bgs	2.27	139	<0.246	<0.30 ⁽⁴⁾	11.0	7.95	10.9	0.786	0.0343	39.6
BKG01 @ 2.5'	7/14/2021	2.5 ft. bgs	4.37	154	<0.218	<0.30 ⁽⁴⁾	11.6	7.69	13.9	0.918	0.0488	40.0

Notes:

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.
- Compound falls within COGCC Table 915-1 Footnote 9.

COGCC = Colorado Oil and Gas Conservation Commission

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

mg/kg = Milligrams per kilogram

= Source material characterization sample

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

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

TABLE 5
FORMER L-H #1, EDWARDS 16U TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
AST01 @ 0-6"	7/14/2021	0-6 in. bgs	40.399583	-104.888779	1.0	0.0
SEP01-DL @ 4'	7/14/2021	4 ft. bgs	40.399488	-104.889167	1.2	0.0
SEP01-FL @ 4'	7/14/2021	4 ft. bgs	40.399475	-104.889215	1.1	0.0
SS01 @ 5'	7/14/2021	5 ft. bgs	NC	NC	NC	1,128
SS02 @ 20'	7/15/2021	20 ft. bgs	NC	NC	NC	548
SS03 @ 24'	8/13/2021	24 ft. bgs	NC	NC	NC	127
BKG01 @ 2.5'	7/14/2021	2.5 ft. bgs	40.399454	-104.889429	1.1	0.0

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

 = Source material characterization sample

in. = Inches

ft. = Feet

bgs = Below ground surface

NC = Data not collected

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 22, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

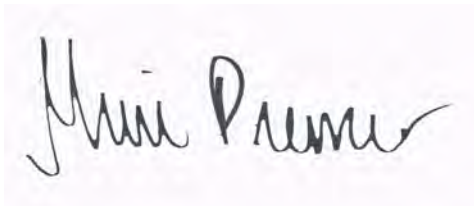
Denver, CO 80203

RE: LH#1, Edwards 16U Tank Battery

Work Order #2107181

Enclosed are the results of analyses for samples received by Summit Scientific on 07/14/21 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is shown on a light pink background.

Muri Premier For Paul Shrewsbury

President



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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5'	2107181-01	Soil	07/14/21 09:40	07/14/21 17:55
BKG01@2.5'	2107181-02	Soil	07/14/21 11:40	07/14/21 17:55

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

2107181

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

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303-487-1228 Project Name: LH#1 - EDWARDS 164 Tank Battery
Sampler Name: AJ DALE Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	VOC - 915	PAH - 915	Metals - 915		
1	SS01 @ 5'	7/14/21	0940	3			X			X				X	X	X	X	X	X	X	
2	BK601 @ 2.5'	7/14/21	1140	1			X			X									X		
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: AJ DALE	Date/Time: 7/14/21 1630	Received by: Tasman's Lock Box	Date/Time: 7/14/21 1630	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours 48 hours	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 7/14/21 1755	Received by: JH [Signature]	Date/Time: 7/14/21 1755	Sample Integrity: Temperature Upon Receipt: 11	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes No	

Sample Receipt Checklist

S2 Work Order 2107181

Client: PDC / Tasman Client Project ID: LH#1, Edwards 16u Tank Butting

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

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

Temp (°C)

//

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day.
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.

JB

Custodian Printed Name or Initials

John B...

Signature of Custodian

7/14/21

Date/Time



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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

SS01@5'
2107181-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.12	0.0020	mg/kg	1	BEG0240	07/14/21	07/14/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.37	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	6.0	0.050	"	10	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	1	"	"	"	"	
Naphthalene	0.27	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	550	5.0	"	10	"	"	"	"	

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		169 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	970	50	mg/kg	1	BEG0248	"	07/14/21	EPA 8015M	
C28-C36 (ORO)	160	50	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Denver CO, 80203

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Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

SS01@5'
2107181-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0261	07/15/21	07/16/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.119	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.435	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	1.02	0.00500	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.171	0.0100	mg/L	1	BEG0255	07/15/21	07/17/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

SS01@5'
2107181-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.27	0.246	mg/kg dry	1	BEG0254	07/15/21	07/15/21	EPA 6020B
Barium	139	0.492	"	"	"	"	"	"
Cadmium	ND	0.246	"	"	"	"	"	"
Copper	11.0	0.492	"	"	"	"	"	"
Lead	7.95	0.246	"	"	"	"	"	"
Nickel	10.9	0.492	"	"	"	"	"	"
Selenium	0.786	0.320	"	"	"	"	"	"
Silver	0.0343	0.0246	"	"	"	"	"	"
Zinc	39.6	0.492	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEG0260	07/15/21	07/16/21	EPA 7196A	

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

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	67.7	0.0615	mg/L dry	1	BEG0267	07/15/21	07/17/21	EPA 6020B	
Magnesium	27.1	0.0615	"	"	"	"	"	"	
Sodium	17.5	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.455	0.00100	units	1	BEG0336	07/20/21	07/20/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

SS01@5'
2107181-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.2	%	1	BEG0256	07/15/21	07/15/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.438	0.0100	mmhos/cm	1	BEG0286	07/16/21	07/16/21	EPA 120.1	

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

Date Sampled: **07/14/21 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.01		pH Units	1	BEG0285	07/16/21	07/16/21	EPA 9045D	

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

BKG01@2.5'
2107181-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **07/14/21 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.37	0.218	mg/kg dry	1	BEG0254	07/15/21	07/15/21	EPA 6020B	
Barium	154	0.436	"	"	"	"	"	"	
Cadmium	ND	0.218	"	"	"	"	"	"	
Copper	11.6	0.436	"	"	"	"	"	"	
Lead	7.69	0.218	"	"	"	"	"	"	
Nickel	13.9	0.436	"	"	"	"	"	"	
Selenium	0.918	0.283	"	"	"	"	"	"	
Silver	0.0488	0.0218	"	"	"	"	"	"	
Zinc	40.0	0.436	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/14/21 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEG0260	07/15/21	07/16/21	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/14/21 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	91.8		%	1	BEG0256	07/15/21	07/15/21	Calculation	

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: LH#1, Edwards 16U Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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 BEG0240 - EPA 5030 Soil MS

Blank (BEG0240-BLK1)

Prepared & Analyzed: 07/14/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0283		"	0.0400		70.7	23-173			
Surrogate: Toluene-d8	0.0518		"	0.0400		130	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	21-167			

LCS (BEG0240-BS1)

Prepared & Analyzed: 07/14/21

Benzene	0.161	0.0020	mg/kg	0.150		108	70-130			
Toluene	0.128	0.0050	"	0.150		85.3	70-130			
Ethylbenzene	0.132	0.0050	"	0.150		88.3	70-130			
m,p-Xylene	0.269	0.010	"	0.300		89.7	70-130			
o-Xylene	0.137	0.0050	"	0.150		91.5	70-130			
1,2,4-Trimethylbenzene	0.140	0.0050	"	0.150		93.0	70-130			
1,3,5-Trimethylbenzene	0.135	0.0050	"	0.150		89.9	70-130			
Naphthalene	0.155	0.0038	"	0.150		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		111	23-173			
Surrogate: Toluene-d8	0.0366		"	0.0400		91.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.3	21-167			

Matrix Spike (BEG0240-MS1)

Source: 2107166-01

Prepared & Analyzed: 07/14/21

Benzene	0.134	0.0020	mg/kg	0.150	ND	89.4	70-130			
Toluene	0.107	0.0050	"	0.150	ND	71.6	70-130			
Ethylbenzene	0.116	0.0050	"	0.150	ND	77.5	70-130			
m,p-Xylene	0.237	0.010	"	0.300	ND	79.1	70-130			
o-Xylene	0.121	0.0050	"	0.150	ND	80.9	70-130			
1,2,4-Trimethylbenzene	0.118	0.0050	"	0.150	ND	78.9	70-130			
1,3,5-Trimethylbenzene	0.114	0.0050	"	0.150	ND	76.1	70-130			
Naphthalene	0.143	0.0038	"	0.150	0.00459	92.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.1	23-173			
Surrogate: Toluene-d8	0.0352		"	0.0400		87.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.1	21-167			

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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 BEG0240 - EPA 5030 Soil MS

Matrix Spike Dup (BEG0240-MSD1)	Source: 2107166-01			Prepared: 07/14/21 Analyzed: 07/15/21						
Benzene	0.151	0.0020	mg/kg	0.150	ND	101	70-130	11.9	30	
Toluene	0.123	0.0050	"	0.150	ND	82.3	70-130	13.9	30	
Ethylbenzene	0.118	0.0050	"	0.150	ND	78.8	70-130	1.64	30	
m,p-Xylene	0.240	0.010	"	0.300	ND	79.8	70-130	0.931	30	
o-Xylene	0.124	0.0050	"	0.150	ND	82.4	70-130	1.84	30	
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.150	ND	81.2	70-130	2.90	30	
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.150	ND	78.9	70-130	3.54	30	
Naphthalene	0.142	0.0038	"	0.150	0.00459	91.8	70-130	0.819	30	
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	21-167			

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEG0248 - EPA 3550A

Blank (BEG0248-BLK1)

Prepared & Analyzed: 07/14/21

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

LCS (BEG0248-BS1)

Prepared & Analyzed: 07/14/21

C10-C28 (DRO)	470	50	mg/kg	500	94.0	70-130
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Matrix Spike (BEG0248-MS1)

Source: 2107177-01

Prepared & Analyzed: 07/14/21

C10-C28 (DRO)	483	50	mg/kg	500	15.8	93.5	70-130
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Matrix Spike Dup (BEG0248-MSD1)

Source: 2107177-01

Prepared & Analyzed: 07/14/21

C10-C28 (DRO)	480	50	mg/kg	500	15.8	92.9	70-130	0.607	20
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Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEG0261 - EPA 5030 Soil MS

Blank (BEG0261-BLK1)

Prepared: 07/15/21 Analyzed: 07/16/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Naphthalene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0187		"	0.0333		56.0	40-150			
Surrogate: Fluoranthene-d10	0.0221		"	0.0333		66.4	40-150			

LCS (BEG0261-BS1)

Prepared: 07/15/21 Analyzed: 07/16/21

Acenaphthene	0.0252	0.00500	mg/kg	0.0333		75.7	31-137			
Anthracene	0.0259	0.00500	"	0.0333		77.8	30-120			
Benzo (a) anthracene	0.0266	0.00500	"	0.0333		80.0	30-120			
Benzo (a) pyrene	0.0255	0.00500	"	0.0333		76.6	30-120			
Benzo (b) fluoranthene	0.0267	0.00500	"	0.0333		80.1	30-120			
Benzo (k) fluoranthene	0.0273	0.00500	"	0.0333		81.8	30-120			
Chrysene	0.0253	0.00500	"	0.0333		75.9	30-120			
Dibenz (a,h) anthracene	0.0179	0.00500	"	0.0333		53.7	30-120			
Fluoranthene	0.0259	0.00500	"	0.0333		77.6	30-120			
Fluorene	0.0267	0.00500	"	0.0333		80.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0175	0.00500	"	0.0333		52.6	30-120			
Naphthalene	0.0258	0.00500	"	0.0333		77.4	30-120			
Pyrene	0.0243	0.00500	"	0.0333		72.9	35-142			
1-Methylnaphthalene	0.0227	0.00500	"	0.0333		68.1	35-142			
2-Methylnaphthalene	0.0212	0.00500	"	0.0333		63.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0239		"	0.0333		71.7	40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.7	40-150			

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEG0261 - EPA 5030 Soil MS

Matrix Spike (BEG0261-MS1)

Source: 2107177-01

Prepared: 07/15/21 Analyzed: 07/16/21

Acenaphthene	0.0281	0.00500	mg/kg	0.0333	ND	84.2	31-137			
Anthracene	0.0281	0.00500	"	0.0333	ND	84.3	30-120			
Benzo (a) anthracene	0.0286	0.00500	"	0.0333	ND	85.8	30-120			
Benzo (a) pyrene	0.0267	0.00500	"	0.0333	ND	80.1	30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333	ND	75.8	30-120			
Benzo (k) fluoranthene	0.0280	0.00500	"	0.0333	ND	83.9	30-120			
Chrysene	0.0266	0.00500	"	0.0333	ND	79.7	30-120			
Dibenz (a,h) anthracene	0.0192	0.00500	"	0.0333	ND	57.6	30-120			
Fluoranthene	0.0267	0.00500	"	0.0333	ND	80.1	30-120			
Fluorene	0.0285	0.00500	"	0.0333	ND	85.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0184	0.00500	"	0.0333	ND	55.2	30-120			
Naphthalene	0.0284	0.00500	"	0.0333	ND	85.2	30-120			
Pyrene	0.0256	0.00500	"	0.0333	ND	76.8	35-142			
1-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.9	15-130			
2-Methylnaphthalene	0.0241	0.00500	"	0.0333	ND	72.3	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0280		"	0.0333		84.0	40-150			
Surrogate: Fluoranthene-d10	0.0293		"	0.0333		88.0	40-150			

Matrix Spike Dup (BEG0261-MSD1)

Source: 2107177-01

Prepared: 07/15/21 Analyzed: 07/16/21

Acenaphthene	0.0248	0.00500	mg/kg	0.0333	ND	74.4	31-137	12.3	30	
Anthracene	0.0255	0.00500	"	0.0333	ND	76.6	30-120	9.52	30	
Benzo (a) anthracene	0.0259	0.00500	"	0.0333	ND	77.7	30-120	9.93	30	
Benzo (a) pyrene	0.0244	0.00500	"	0.0333	ND	73.3	30-120	8.91	30	
Benzo (b) fluoranthene	0.0256	0.00500	"	0.0333	ND	76.9	30-120	1.42	30	
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.7	30-120	5.08	30	
Chrysene	0.0243	0.00500	"	0.0333	ND	72.8	30-120	9.13	30	
Dibenz (a,h) anthracene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	10.5	30	
Fluoranthene	0.0254	0.00500	"	0.0333	ND	76.1	30-120	5.06	30	
Fluorene	0.0258	0.00500	"	0.0333	ND	77.5	30-120	9.88	30	
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	11.4	30	
Naphthalene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	14.0	30	
Pyrene	0.0234	0.00500	"	0.0333	ND	70.2	35-142	8.97	30	
1-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.2	15-130	9.20	50	
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.7	15-130	9.66	50	
Surrogate: 2-Methylnaphthalene-d10	0.0249		"	0.0333		74.8	40-150			
Surrogate: Fluoranthene-d10	0.0275		"	0.0333		82.5	40-150			

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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

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

Batch BEG0255 - EPA 3050B

Blank (BEG0255-BLK1)

Prepared: 07/15/21 Analyzed: 07/17/21

Boron ND 0.0100 mg/L

LCS (BEG0255-BS1)

Prepared: 07/15/21 Analyzed: 07/17/21

Boron 5.90 0.0100 mg/L 5.00 118 80-120

Duplicate (BEG0255-DUP1)

Source: 2107181-01

Prepared: 07/15/21 Analyzed: 07/17/21

Boron 0.178 0.0100 mg/L 0.171 3.81 20

Matrix Spike (BEG0255-MS1)

Source: 2107181-01

Prepared: 07/15/21 Analyzed: 07/17/21

Boron 5.95 0.0100 mg/L 5.00 0.171 116 75-125

Matrix Spike Dup (BEG0255-MSD1)

Source: 2107181-01

Prepared: 07/15/21 Analyzed: 07/17/21

Boron 6.16 0.0100 mg/L 5.00 0.171 120 75-125 3.46 25

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEG0254 - EPA 3050B

Blank (BEG0254-BLK1)

Prepared & Analyzed: 07/15/21

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BEG0254-BS1)

Prepared & Analyzed: 07/15/21

Arsenic	40.9	0.200	mg/kg wet	40.0	102	80-120
Barium	40.0	0.400	"	40.0	99.9	80-120
Cadmium	1.97	0.200	"	2.00	98.4	80-120
Copper	40.1	0.400	"	40.0	100	80-120
Lead	19.7	0.200	"	20.0	98.7	80-120
Nickel	38.7	0.400	"	40.0	96.9	80-120
Selenium	3.89	0.260	"	4.00	97.2	80-120
Silver	1.95	0.0200	"	2.00	97.4	80-120
Zinc	41.2	0.400	"	40.0	103	80-120

Duplicate (BEG0254-DUP1)

Source: 2106411-01

Prepared & Analyzed: 07/15/21

Arsenic	ND	0.206	mg/kg dry	ND		20
Barium	11.8	0.411	"	13.7	15.0	20
Cadmium	0.0176	0.206	"	0.0207	16.7	20
Copper	1.58	0.411	"	1.61	1.99	20
Lead	1.49	0.206	"	1.46	1.57	20
Nickel	1.08	0.411	"	0.911	17.4	20
Selenium	ND	0.267	"	0.275	200	20
Silver	0.00992	0.0206	"	0.00825	18.4	20
Zinc	6.45	0.411	"	6.82	5.55	20

QR-01

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEG0254 - EPA 3050B

Matrix Spike (BEG0254-MS1)

Source: 2106411-01

Prepared & Analyzed: 07/15/21

Arsenic	36.8	0.206	mg/kg dry	41.1	ND	89.4	75-125
Barium	49.1	0.411	"	41.1	13.7	86.2	75-125
Cadmium	1.76	0.206	"	2.06	0.0207	84.6	75-125
Copper	37.4	0.411	"	41.1	1.61	87.1	75-125
Lead	18.2	0.206	"	20.6	1.46	81.5	75-125
Nickel	35.3	0.411	"	41.1	0.911	83.6	75-125
Selenium	3.78	0.267	"	4.11	0.275	85.2	75-125
Silver	1.69	0.0206	"	2.06	0.00825	81.8	75-125
Zinc	43.7	0.411	"	41.1	6.82	89.8	75-125

Matrix Spike Dup (BEG0254-MSD1)

Source: 2106411-01

Prepared & Analyzed: 07/15/21

Arsenic	38.0	0.206	mg/kg dry	41.1	ND	92.4	75-125	3.25	25
Barium	59.2	0.411	"	41.1	13.7	111	75-125	18.6	25
Cadmium	1.91	0.206	"	2.06	0.0207	92.1	75-125	8.35	25
Copper	39.6	0.411	"	41.1	1.61	92.3	75-125	5.62	25
Lead	21.1	0.206	"	20.6	1.46	95.3	75-125	14.4	25
Nickel	37.2	0.411	"	41.1	0.911	88.1	75-125	5.19	25
Selenium	4.73	0.267	"	4.11	0.275	108	75-125	22.4	25
Silver	1.82	0.0206	"	2.06	0.00825	88.0	75-125	7.15	25
Zinc	46.1	0.411	"	41.1	6.82	95.5	75-125	5.23	25

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BEG0260 - 3060A Mod

Blank (BEG0260-BLK1)

Prepared: 07/15/21 Analyzed: 07/16/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEG0260-BS1)

Prepared: 07/15/21 Analyzed: 07/16/21

Chromium, Hexavalent 25.5 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BEG0260-DUP1)

Source: 2107181-01

Prepared: 07/15/21 Analyzed: 07/16/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEG0260-MS1)

Source: 2107181-01

Prepared: 07/15/21 Analyzed: 07/16/21

Chromium, Hexavalent 25.8 0.30 mg/kg dry 30.8 ND 84.0 75-125

Matrix Spike Dup (BEG0260-MSD1)

Source: 2107181-01

Prepared: 07/15/21 Analyzed: 07/16/21

Chromium, Hexavalent 26.0 0.30 mg/kg dry 30.8 ND 84.4 75-125 0.475 20

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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

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

Batch BEG0267 - General Preparation

Blank (BEG0267-BLK1)

Prepared: 07/15/21 Analyzed: 07/17/21

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

LCS (BEG0267-BS1)

Prepared: 07/15/21 Analyzed: 07/17/21

Calcium	6.48	0.0500	mg/L wet	5.00	130	70-130
Magnesium	5.76	0.0500	"	5.00	115	70-130
Sodium	6.28	0.0500	"	5.00	126	70-130

Summit Scientific

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



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

Project: LH#1, Edwards 16U Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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

Summit Scientific

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

Batch BEG0256 - General Preparation

Duplicate (BEG0256-DUP1)

Source: 2106410-01

Prepared & Analyzed: 07/15/21

% Solids	79.1	%		78.3		1.06	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: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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

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

Batch BEG0286 - General Preparation

Blank (BEG0286-BLK1)

Prepared & Analyzed: 07/16/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEG0286-BS1)

Prepared & Analyzed: 07/16/21

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.1 90-110

Duplicate (BEG0286-DUP1)

Source: 2106379-01

Prepared & Analyzed: 07/16/21

Specific Conductance (EC) 0.492 0.0100 mmhos/cm 0.493 0.284 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: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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

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

Batch BEG0285 - General Preparation

LCS (BEG0285-BS1)

Prepared & Analyzed: 07/16/21

pH	9.33	pH Units	9.21	101	95-105
----	------	----------	------	-----	--------

Duplicate (BEG0285-DUP1)

Source: 2106379-01

Prepared & Analyzed: 07/16/21

pH	8.18	pH Units	8.17	0.122	20
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Summit Scientific

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



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

Project: LH#1, Edwards 16U Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 11:06

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.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
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

July 22, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

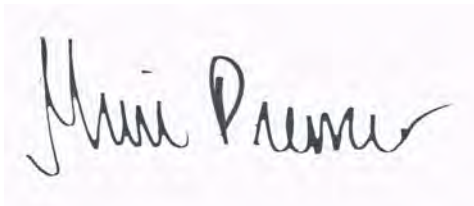
Denver, CO 80203

RE: LH#1, Edwards 16U Tank Battery

Work Order #2107196

Enclosed are the results of analyses for samples received by Summit Scientific on 07/14/21 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is shown on a light pink background.

Muri Premier For Paul Shrewsbury

President



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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2107196-01	Soil	07/14/21 09:30	07/14/21 17:55
SEP01-DL@4'	2107196-02	Soil	07/14/21 09:32	07/14/21 17:55
SEP01-FL@4'	2107196-03	Soil	07/14/21 09:34	07/14/21 17:55

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.

2107196

303-277-9310

Page 1 of 1

Project Number:

[illegible]

Sample Receipt Checklist

S2 Work Order 2107196

Client: PDC / Tasman Client Project ID: L-H2, Edwards 16U Tank Battery

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

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

Temp (°C) 11

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 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.

JB
Custodian Printed Name or Initials

John Br
Signature of Custodian

7/14/21
Date/Time



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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

AST01@0-6"
2107196-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/14/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEG0252	07/15/21	07/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/14/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEG0253	07/15/21	07/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.3 %	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: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

SEP01-DL@4'
2107196-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/14/21 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEG0252	07/15/21	07/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/14/21 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEG0253	07/15/21	07/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		92.9 %	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: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

SEP01-FL@4'
2107196-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/14/21 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEG0252	07/15/21	07/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/14/21 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEG0253	07/15/21	07/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/14/21 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.2 %	30-150		"	"	"	"	

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

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 BEG0252 - EPA 5030 Soil MS

Blank (BEG0252-BLK1)

Prepared: 07/15/21 Analyzed: 07/16/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.8	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	21-167			

LCS (BEG0252-BS1)

Prepared: 07/15/21 Analyzed: 07/16/21

Benzene	0.0940	0.0020	mg/kg	0.0750		125	70-130			
Toluene	0.0913	0.0050	"	0.0750		122	70-130			
Ethylbenzene	0.0850	0.0050	"	0.0750		113	70-130			
m,p-Xylene	0.195	0.010	"	0.150		130	70-130			
o-Xylene	0.0948	0.0050	"	0.0750		126	70-130			
1,2,4-Trimethylbenzene	0.0967	0.0050	"	0.0750		129	70-130			
1,3,5-Trimethylbenzene	0.0897	0.0050	"	0.0750		120	70-130			
Naphthalene	0.0842	0.0038	"	0.0750		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.6	23-173			
Surrogate: Toluene-d8	0.0436		"	0.0400		109	20-170			
Surrogate: 4-Bromofluorobenzene	0.0430		"	0.0400		107	21-167			

Matrix Spike (BEG0252-MS1)

Source: 2107170-01

Prepared: 07/15/21 Analyzed: 07/16/21

Benzene	0.0755	0.0020	mg/kg	0.0750	ND	101	70-130			
Toluene	0.0954	0.0050	"	0.0750	ND	127	70-130			
Ethylbenzene	0.0940	0.0050	"	0.0750	ND	125	70-130			
m,p-Xylene	0.184	0.010	"	0.150	0.00342	120	70-130			
o-Xylene	0.0903	0.0050	"	0.0750	ND	120	70-130			
1,2,4-Trimethylbenzene	0.0925	0.0050	"	0.0750	ND	123	70-130			
1,3,5-Trimethylbenzene	0.0931	0.0050	"	0.0750	ND	124	70-130			
Naphthalene	0.0929	0.0038	"	0.0750	ND	124	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0424		"	0.0400		106	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: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

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 BEG0252 - EPA 5030 Soil MS

Matrix Spike Dup (BEG0252-MSD1)	Source: 2107170-01			Prepared: 07/15/21 Analyzed: 07/16/21						
Benzene	0.0772	0.0020	mg/kg	0.0750	ND	103	70-130	2.20	30	
Toluene	0.0955	0.0050	"	0.0750	ND	127	70-130	0.0629	30	
Ethylbenzene	0.0939	0.0050	"	0.0750	ND	125	70-130	0.192	30	
m,p-Xylene	0.181	0.010	"	0.150	0.00342	118	70-130	1.66	30	
o-Xylene	0.0896	0.0050	"	0.0750	ND	119	70-130	0.834	30	
1,2,4-Trimethylbenzene	0.0915	0.0050	"	0.0750	ND	122	70-130	1.01	30	
1,3,5-Trimethylbenzene	0.0924	0.0050	"	0.0750	ND	123	70-130	0.744	30	
Naphthalene	0.0938	0.0038	"	0.0750	ND	125	70-130	0.932	30	
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0436		"	0.0400		109	20-170			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	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: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEG0253 - EPA 3550A

Blank (BEG0253-BLK1)

Prepared: 07/15/21 Analyzed: 07/16/21

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

LCS (BEG0253-BS1)

Prepared: 07/15/21 Analyzed: 07/16/21

C10-C28 (DRO)	488	50	mg/kg	500	97.6	70-130
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Matrix Spike (BEG0253-MS1)

Source: 2107170-01

Prepared: 07/15/21 Analyzed: 07/16/21

C10-C28 (DRO)	486	50	mg/kg	500	41.7	88.9	70-130
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Matrix Spike Dup (BEG0253-MSD1)

Source: 2107170-01

Prepared: 07/15/21 Analyzed: 07/16/21

C10-C28 (DRO)	537	50	mg/kg	500	41.7	99.1	70-130	9.90	20
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Summit Scientific

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



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

Project: LH#1, Edwards 16U Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/22/21 09:53

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 15, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH#1, Edwards 16U Tank Battery

Work Order #2108201

Enclosed are the results of analyses for samples received by Summit Scientific on 08/13/21 17:55. 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: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/15/21 20:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@24'	2108201-01	Soil	08/13/21 09:48	08/13/21 17:55

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

2-1000001

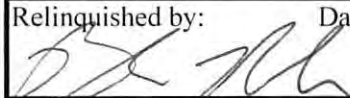
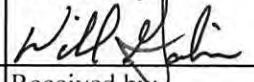
4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: PDC / Tasman Project Manager: Mark Longhurst
 Address: 6855 W 119th Ave E-Mail: mark.longhurst@PDCE.com
 City/State/Zip: Broomfield/ CO/ 80020
 Phone: 303-487-1228 Project Name: L-H # 1, Edwards 16V Tank Battery
 Sampler Name: Brock Nelson Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 8260B	TPH - (C6 - C36)	pH, EC, SAR	Boron - HWS	VOC - 915	PAH - 915	Metals - 915				
1	SS030 24'	8/13/21	948	3			X			X				X	X								pH, EC, SAR by saturated paste
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Relinquished by:  Date/Time: 8/13/2021 12:12	Received by: Tasman's Lock Box Date/Time: 8/13/2021 12:15	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: 15 Samples Intact: <input checked="" type="radio"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box Date/Time: 8/13/21 1755	Received by:  Date/Time: 8/13/21 1755		
Relinquished by: Date/Time:	Received by: Date/Time:		

Sample Receipt Checklist

S2 Work Order 2108201

Client: PDX/TASMAN

Client Project ID: L-H #1, Edwards 16V Tank battery

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

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

Temp (°C)

15

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"/>	<u>on ice</u>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>same day</u>
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.

WGA
Custodian Printed Name or Initials

Will Hall
Signature of Custodian

8/13/21
Date/Time



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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/15/21 20:32

SS03@24'
2108201-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/13/21 09:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEH0231	08/13/21	08/14/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/13/21 09:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/13/21 09:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEH0232	08/13/21	08/13/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/13/21 09:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		81.9 %	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: LH#1, Edwards 16U Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/15/21 20:32

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 BEH0231 - EPA 5030 Soil MS

Blank (BEH0231-BLK1)

Prepared & Analyzed: 08/13/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0400		108	23-173			
Surrogate: Toluene-d8	0.0434		"	0.0400		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.2	21-167			

LCS (BEH0231-BS1)

Prepared & Analyzed: 08/13/21

Benzene	0.121	0.0020	mg/kg	0.100		121	70-130			
Toluene	0.113	0.0050	"	0.100		113	70-130			
Ethylbenzene	0.0981	0.0050	"	0.100		98.1	70-130			
m,p-Xylene	0.194	0.010	"	0.200		96.8	70-130			
o-Xylene	0.0941	0.0050	"	0.100		94.1	70-130			
1,2,4-Trimethylbenzene	0.0980	0.0050	"	0.100		98.0	70-130			
1,3,5-Trimethylbenzene	0.0977	0.0050	"	0.100		97.7	70-130			
Naphthalene	0.114	0.0038	"	0.100		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0461		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0442		"	0.0400		110	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.1	21-167			

Matrix Spike (BEH0231-MS1)

Source: 2108199-01

Prepared & Analyzed: 08/13/21

Benzene	0.117	0.0020	mg/kg	0.100	ND	117	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.0952	0.0050	"	0.100	ND	95.2	70-130			
m,p-Xylene	0.187	0.010	"	0.200	ND	93.4	70-130			
o-Xylene	0.0900	0.0050	"	0.100	ND	90.0	70-130			
1,2,4-Trimethylbenzene	0.0913	0.0050	"	0.100	ND	91.3	70-130			
1,3,5-Trimethylbenzene	0.0914	0.0050	"	0.100	ND	91.4	70-130			
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0460		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0443		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	21-167			

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/15/21 20:32

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 BEH0231 - EPA 5030 Soil MS

Matrix Spike Dup (BEH0231-MSD1)	Source: 2108199-01			Prepared & Analyzed: 08/13/21						
Benzene	0.117	0.0020	mg/kg	0.100	ND	117	70-130	0.359	30	
Toluene	0.109	0.0050	"	0.100	ND	109	70-130	0.220	30	
Ethylbenzene	0.0964	0.0050	"	0.100	ND	96.4	70-130	1.22	30	
m,p-Xylene	0.190	0.010	"	0.200	ND	95.0	70-130	1.67	30	
o-Xylene	0.0910	0.0050	"	0.100	ND	91.0	70-130	1.13	30	
1,2,4-Trimethylbenzene	0.0938	0.0050	"	0.100	ND	93.8	70-130	2.76	30	
1,3,5-Trimethylbenzene	0.0934	0.0050	"	0.100	ND	93.4	70-130	2.11	30	
Naphthalene	0.111	0.0038	"	0.100	ND	111	70-130	2.47	30	
Surrogate: 1,2-Dichloroethane-d4	0.0464		"	0.0400		116	23-173			
Surrogate: Toluene-d8	0.0442		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	21-167			

Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/15/21 20:32

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEH0232 - EPA 3550A

Blank (BEH0232-BLK1)

Prepared & Analyzed: 08/13/21

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

LCS (BEH0232-BS1)

Prepared: 08/13/21 Analyzed: 08/14/21

C10-C28 (DRO)	575	50	mg/kg	500	115	70-130
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Matrix Spike (BEH0232-MS1)

Source: 2108199-01

Prepared: 08/13/21 Analyzed: 08/14/21

C10-C28 (DRO)	520	50	mg/kg	500	14.3	101	70-130
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Matrix Spike Dup (BEH0232-MSD1)

Source: 2108199-01

Prepared: 08/13/21 Analyzed: 08/14/21

C10-C28 (DRO)	495	50	mg/kg	500	14.3	96.2	70-130	4.93	20
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Summit Scientific

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

Project: LH#1, Edwards 16U Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
08/15/21 20:32

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference