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March 28, 2024

Jessica Johannsen
PDC Energy
1775 Sherman Street
Suite 3000
Denver, CO 80203

Work Order: **HS24031180**

Laboratory Results for: **Seeley Federal 108-20N-30C-L**

Dear Jessica Johannsen,

ALS Environmental received 1 sample(s) on Mar 20, 2024 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Tyler Monroe

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
Work Order: HS24031180

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24031180-01	Seeley Federal 108-20N-30C-L	Water		18-Mar-2024 10:00	20-Mar-2024 09:40	<input type="checkbox"/>

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
Work Order: HS24031180

CASE NARRATIVE

GC Semivolatiles by Method RSK-175**Batch ID: R461930**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GC Semivolatiles by Method SW8015M**Batch ID: 209385****Sample ID: Seeley Federal 108-20N-30C-L (HS24031180-01)**

- The surrogate recoveries could not be determined due to dilution below the calibration range.

GC Volatiles by Method SW8015**Batch ID: R462419****Sample ID: Seeley Federal 108-20N-30C-L (HS24031180-01)**

- Lowest possible dilution due to sample matrix.

GCMS Volatiles by Method SW8260**Batch ID: R462069****Sample ID: Seeley Federal 108-20N-30C-L (HS24031180-01)**

- Lowest practical dilution due to sample matrix and/or high concentration of non-target analyte(s).

Metals by Method E200.8**Batch ID: 209298****Sample ID: HS24031124-01MS**

- MS and MSD are for an unrelated sample

WetChemistry by Method SM2320B**Batch ID: R462259**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E300**Batch ID: R462049****Sample ID: HS24030884-01MS**

- MS and MSD are for an unrelated sample (Sulfate)

WetChemistry by Method M2540C**Batch ID: R461997**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: PDC Energy
 Project: Seeley Federal 108-20N-30C-L
 Sample ID: Seeley Federal 108-20N-30C-L
 Collection Date: 18-Mar-2024 10:00

ANALYTICAL REPORT

WorkOrder: HS24031180
 Lab ID: HS24031180-01
 Matrix: Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		Method: SW8260		Analyst: AKP		
Benzene	ND		100	ug/L	100	23-Mar-2024 05:04
Ethylbenzene	ND		100	ug/L	100	23-Mar-2024 05:04
m,p-Xylene	ND		200	ug/L	100	23-Mar-2024 05:04
o-Xylene	ND		100	ug/L	100	23-Mar-2024 05:04
Toluene	120		100	ug/L	100	23-Mar-2024 05:04
Xylenes, Total	ND		300	ug/L	100	23-Mar-2024 05:04
Surr: 1,2-Dichloroethane-d4	99.8		70-126	%REC	100	23-Mar-2024 05:04
Surr: 4-Bromofluorobenzene	99.9		77-113	%REC	100	23-Mar-2024 05:04
Surr: Dibromofluoromethane	87.2		77-123	%REC	100	23-Mar-2024 05:04
Surr: Toluene-d8	100.0		82-127	%REC	100	23-Mar-2024 05:04
GASOLINE RANGE ORGANICS BY SW8015C		Method: SW8015		Analyst: TS		
Gasoline Range Organics	ND		25.0	mg/L	500	28-Mar-2024 04:58
Surr: 4-Bromofluorobenzene	106		70-123	%REC	500	28-Mar-2024 04:58
DISSOLVED GASES BY RSK-175		Method: RSK-175		Analyst: E.H.		
Ethane	44.3		1.00	ug/L	1	21-Mar-2024 17:02
Methane	109		2.50	ug/L	5	21-Mar-2024 17:47
Propane	20.6		1.00	ug/L	1	21-Mar-2024 17:02
TPH DRO/ORO BY SW8015C		Method: SW8015M		Prep: SW3511 / 25-Mar-2024 Analyst: SAM		
TPH (Diesel Range)	210		5.4	mg/L	100	26-Mar-2024 04:58
Surr: 2-Fluorobiphenyl	0	JS	60-135	%REC	100	26-Mar-2024 04:58
TOTAL METALS BY E200.8, REV 5.4, 1994		Method: E200.8		Prep: E200.8 / 22-Mar-2024 Analyst: JC		
Calcium	61.0		5.00	mg/L	1	23-Mar-2024 01:26
Magnesium	ND		5.00	mg/L	1	23-Mar-2024 01:26
Potassium	3,020		100	mg/L	20	25-Mar-2024 12:10
Sodium	1,830		40.0	mg/L	20	25-Mar-2024 12:10
ANIONS BY E300.0, REV 2.1, 1993		Method: E300		Analyst: TH		
Chloride	1,470		25.0	mg/L	50	24-Mar-2024 14:34
Sulfate	658		25.0	mg/L	50	24-Mar-2024 14:34
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		Method: M2540C		Analyst: HB		
Total Dissolved Solids (Residue, Filterable)	11,600		10.0	mg/L	1	22-Mar-2024 08:00
ALKALINITY BY -2011		Method: SM2320B		Analyst: JAC		
Alkalinity, Bicarbonate (As CaCO3)	ND		50.0	mg/L	10	26-Mar-2024 13:01
Alkalinity, Carbonate (As CaCO3)	734		50.0	mg/L	10	26-Mar-2024 13:01
Alkalinity, Total (As CaCO3)	6,590		50.0	mg/L	10	26-Mar-2024 13:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

Batch ID: 209298	Start Date: 22 Mar 2024 12:00	End Date: 22 Mar 2024 12:00
Method: TOTAL METALS PREP BY E200.8, REV 5.4, 1994		Prep Code: 200.8PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24031180-01		1 (mL)	10 (mL)	10	250 mL plastic, HNO3 to pH <2

Batch ID: 209385	Start Date: 25 Mar 2024 10:00	End Date: 25 Mar 2024 10:00
Method: SW3511		Prep Code: 3511_DRO

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24031180-01		30.63 (mL)	2 (mL)	0.0653	40 mL Amber

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 209298 (0)		Test Name : TOTAL METALS BY E200.8, REV 5.4, 1994			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L			22 Mar 2024 12:00	25 Mar 2024 12:10	20
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L			22 Mar 2024 12:00	23 Mar 2024 01:26	1
Batch ID: 209385 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L			25 Mar 2024 10:00	26 Mar 2024 04:58	100
Batch ID: R461930 (0)		Test Name : DISSOLVED GASES BY RSK-175			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L				21 Mar 2024 17:47	5
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L				21 Mar 2024 17:02	1
Batch ID: R461997 (0)		Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L				22 Mar 2024 08:00	1
Batch ID: R462049 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L				24 Mar 2024 14:34	50
Batch ID: R462069 (0)		Test Name : LOW LEVEL VOLATILES BY SW8260C			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L				23 Mar 2024 05:04	100
Batch ID: R462259 (0)		Test Name : ALKALINITY BY -2011			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L				26 Mar 2024 13:01	10
Batch ID: R462419 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS24031180-01	Seeley Federal 108-20N-30C-18 Mar 2024 10:00 L				28 Mar 2024 04:58	500

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: 209385 (0)		Instrument: FID-16		Method: TPH DRO/ORO BY SW8015C					
MBLK	Sample ID: MBLK-209385	Units: mg/L		Analysis Date: 25-Mar-2024 16:07					
Client ID:	Run ID: FID-16_462436		SeqNo: 7913130		PrepDate: 25-Mar-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	ND	0.050							
Surr: 2-Fluorobiphenyl	0.06257	0.0050	0.06	0	104	60 - 135			
LCS	Sample ID: LCS-209385	Units: mg/L		Analysis Date: 25-Mar-2024 16:37					
Client ID:	Run ID: FID-16_462436		SeqNo: 7913131		PrepDate: 25-Mar-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.6593	0.050	0.6	0	110	70 - 130			
Surr: 2-Fluorobiphenyl	0.05341	0.0050	0.06	0	89.0	60 - 135			
MS	Sample ID: HS24031062-01MS	Units: mg/L		Analysis Date: 25-Mar-2024 17:36					
Client ID:	Run ID: FID-16_462436		SeqNo: 7913133		PrepDate: 25-Mar-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.7258	0.051	0.6143	0.04228	111	70 - 130			
Surr: 2-Fluorobiphenyl	0.04574	0.0051	0.06143	0	74.5	60 - 135			
MSD	Sample ID: HS24031062-01MSD	Units: mg/L		Analysis Date: 25-Mar-2024 18:06					
Client ID:	Run ID: FID-16_462436		SeqNo: 7913134		PrepDate: 25-Mar-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.7449	0.052	0.6199	0.04228	113	70 - 130	0.7258	2.6	20
Surr: 2-Fluorobiphenyl	0.05125	0.0052	0.06199	0	82.7	60 - 135	0.04574	11.4	20
The following samples were analyzed in this batch: HS24031180-01									

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R461930 (0)		Instrument: FID-4		Method: DISSOLVED GASES BY RSK-175					
MBLK	Sample ID: MBLK-240321	Units: ug/L		Analysis Date: 21-Mar-2024 08:46					
Client ID:	Run ID: FID-4_461930		SeqNo: 7901743		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	ND	1.00							
Methane	ND	0.500							
Propane	ND	1.50							

LCS	Sample ID: LCS-240321	Units: ug/L		Analysis Date: 21-Mar-2024 09:18					
Client ID:	Run ID: FID-4_461930		SeqNo: 7901744		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	17.24	1.00	18.04	0	95.6	75 - 125			
Methane	9.874	0.500	9.647	0	102	75 - 125			
Propane	24.34	1.50	26.46	0	92.0	75 - 125			

LCSD	Sample ID: LCSD-240321	Units: ug/L		Analysis Date: 21-Mar-2024 09:39					
Client ID:	Run ID: FID-4_461930		SeqNo: 7901745		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	17.72	1.00	18.04	0	98.2	75 - 125	17.24	2.7	30
Methane	9.828	0.500	9.647	0	102	75 - 125	9.874	0.469	30
Propane	24.11	1.50	26.46	0	91.1	75 - 125	24.34	0.945	30

The following samples were analyzed in this batch: HS24031180-01

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R462419 (0)		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
MBLK	Sample ID: MBLK-240327	Units: mg/L		Analysis Date: 27-Mar-2024 23:29						
Client ID:	Run ID: FID-20_462419		SeqNo: 7912843		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	ND	0.0500								
Surr: 4-Bromofluorobenzene	0.1039	0.00500	0.1	0	104	70 - 121				
LCS	Sample ID: LCS-240327	Units: mg/L		Analysis Date: 27-Mar-2024 23:01						
Client ID:	Run ID: FID-20_462419		SeqNo: 7912841		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.029	0.0500	1	0	103	76 - 124				
Surr: 4-Bromofluorobenzene	0.09246	0.00500	0.1	0	92.5	52 - 138				
LCSD	Sample ID: LCSD-240327	Units: mg/L		Analysis Date: 27-Mar-2024 23:15						
Client ID:	Run ID: FID-20_462419		SeqNo: 7912842		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.047	0.0500	1	0	105	76 - 124	1.029	1.75	20	
Surr: 4-Bromofluorobenzene	0.08849	0.00500	0.1	0	88.5	52 - 138	0.09246	4.4	20	
The following samples were analyzed in this batch: HS24031180-01										

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: 209298 (0)		Instrument: ICPMS06		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
MBLK	Sample ID: MBLK-209298	Units: ug/L		Analysis Date: 25-Mar-2024 12:00					
Client ID:	Run ID: ICPMS06_462098	SeqNo: 7905349		PrepDate: 22-Mar-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	ND	500							
Magnesium	ND	500							
Potassium	ND	500							
Sodium	ND	200							

LCS	Sample ID: LCS-209298	Units: ug/L		Analysis Date: 23-Mar-2024 00:34					
Client ID:	Run ID: ICPMS06_462061	SeqNo: 7904703		PrepDate: 22-Mar-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	4982	500	5000	0	99.6	85 - 115			
Magnesium	5267	500	5000	0	105	85 - 115			
Potassium	5124	500	5000	0	102	85 - 115			
Sodium	5260	200	5000	0	105	85 - 115			

MS	Sample ID: HS24031202-01MS	Units: ug/L		Analysis Date: 23-Mar-2024 00:44					
Client ID:	Run ID: ICPMS06_462061	SeqNo: 7904708		PrepDate: 22-Mar-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	23320	500	5000	17850	109	70 - 130			
Magnesium	5439	500	5000	555.2	97.7	70 - 130			
Potassium	5407	500	5000	658.8	95.0	70 - 130			
Sodium	6962	200	5000	2560	88.1	70 - 130			

MS	Sample ID: HS24031124-01MS	Units: ug/L		Analysis Date: 23-Mar-2024 00:38					
Client ID:	Run ID: ICPMS06_462061	SeqNo: 7904705		PrepDate: 22-Mar-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	30130	500	5000	28810	26.4	70 - 130			SO
Magnesium	7695	500	5000	3346	87.0	70 - 130			
Potassium	27120	500	5000	25260	37.1	70 - 130			SO
Sodium	516000	200	5000	572500	-1130	70 - 130			SEO

Client:

Project:

WorkOrder:

PDC Energy

Seeley Federal 108-20N-30C-L

HS24031180

QC BATCH REPORT

Batch ID: 209298 (0)		Instrument: ICPMS06		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
MSD	Sample ID: HS24031202-01MSD	Units: ug/L		Analysis Date: 23-Mar-2024 00:46					
Client ID:	Run ID: ICPMS06_462061		SeqNo: 7904709		PrepDate: 22-Mar-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	23170	500	5000	17850	106	70 - 130	23320	0.609	20
Magnesium	5511	500	5000	555.2	99.1	70 - 130	5439	1.31	20
Potassium	5523	500	5000	658.8	97.3	70 - 130	5407	2.12	20
Sodium	6973	200	5000	2560	88.3	70 - 130	6962	0.148	20

MSD	Sample ID: HS24031124-01MSD	Units: ug/L		Analysis Date: 23-Mar-2024 00:40					
Client ID:	Run ID: ICPMS06_462061		SeqNo: 7904706		PrepDate: 22-Mar-2024		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	30940	500	5000	28810	42.5	70 - 130	30130	2.64	20 SO
Magnesium	7905	500	5000	3346	91.2	70 - 130	7695	2.69	20
Potassium	27770	500	5000	25260	50.0	70 - 130	27120	2.35	20 SO
Sodium	523700	200	5000	572500	-975	70 - 130	516000	1.48	20 SEO

The following samples were analyzed in this batch: HS24031180-01

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R462069 (0)		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C					
MBLK	Sample ID: VBLKW-240322	Units: ug/L		Analysis Date: 22-Mar-2024 21:44					
Client ID:	Run ID: VOA4_462069	SeqNo: 7904812		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	ND	1.0							
Ethylbenzene	ND	1.0							
m,p-Xylene	ND	2.0							
o-Xylene	ND	1.0							
Toluene	ND	1.0							
Xylenes, Total	ND	3.0							
Surr: 1,2-Dichloroethane-d4	50.93	1.0	50	0	102	70 - 123			
Surr: 4-Bromofluorobenzene	48.87	1.0	50	0	97.7	77 - 113			
Surr: Dibromofluoromethane	45.13	1.0	50	0	90.3	73 - 126			
Surr: Toluene-d8	49.23	1.0	50	0	98.5	81 - 120			

LCS	Sample ID: VLCSW-240322	Units: ug/L		Analysis Date: 22-Mar-2024 20:35					
Client ID:	Run ID: VOA4_462069	SeqNo: 7904810		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.49	1.0	20	0	102	74 - 120			
Ethylbenzene	19.08	1.0	20	0	95.4	77 - 117			
m,p-Xylene	38.16	2.0	40	0	95.4	77 - 122			
o-Xylene	18.99	1.0	20	0	95.0	75 - 119			
Toluene	20.22	1.0	20	0	101	77 - 118			
Xylenes, Total	57.15	3.0	60	0	95.3	75 - 122			
Surr: 1,2-Dichloroethane-d4	50.72	1.0	50	0	101	70 - 123			
Surr: 4-Bromofluorobenzene	49.18	1.0	50	0	98.4	77 - 113			
Surr: Dibromofluoromethane	46.78	1.0	50	0	93.6	73 - 126			
Surr: Toluene-d8	50.77	1.0	50	0	102	81 - 120			

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R462069 (0)		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C					
LCSD		Sample ID: VLCSDW-240322		Units: ug/L		Analysis Date: 22-Mar-2024 20:58			
Client ID:		Run ID: VOA4_462069		SeqNo: 7904811		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Benzene	19.89	1.0	20	0	99.4	74 - 120	20.49	2.97	20
Ethylbenzene	18.14	1.0	20	0	90.7	77 - 117	19.08	5.02	20
m,p-Xylene	36.98	2.0	40	0	92.4	77 - 122	38.16	3.15	20
o-Xylene	18.58	1.0	20	0	92.9	75 - 119	18.99	2.21	20
Toluene	19.5	1.0	20	0	97.5	77 - 118	20.22	3.6	20
Xylenes, Total	55.55	3.0	60	0	92.6	75 - 122	57.15	2.84	20
Surr: 1,2-Dichloroethane-d4	49.93	1.0	50	0	99.9	70 - 123	50.72	1.58	20
Surr: 4-Bromofluorobenzene	49.43	1.0	50	0	98.9	77 - 113	49.18	0.522	20
Surr: Dibromofluoromethane	44.74	1.0	50	0	89.5	73 - 126	46.78	4.45	20
Surr: Toluene-d8	50.92	1.0	50	0	102	81 - 120	50.77	0.298	20

MS		Sample ID: HS24031181-01MS		Units: ug/L		Analysis Date: 23-Mar-2024 05:50			
Client ID:		Run ID: VOA4_462069		SeqNo: 7904833		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Benzene	19.49	1.0	20	0	97.4	70 - 127			
Ethylbenzene	17.52	1.0	20	0	87.6	70 - 124			
m,p-Xylene	34.94	2.0	40	0	87.4	70 - 130			
o-Xylene	17.08	1.0	20	0	85.4	70 - 124			
Toluene	19.26	1.0	20	0	96.3	70 - 123			
Xylenes, Total	52.02	3.0	60	0	86.7	70 - 130			
Surr: 1,2-Dichloroethane-d4	50.45	1.0	50	0	101	70 - 126			
Surr: 4-Bromofluorobenzene	49.09	1.0	50	0	98.2	77 - 113			
Surr: Dibromofluoromethane	44.48	1.0	50	0	89.0	77 - 123			
Surr: Toluene-d8	50.69	1.0	50	0	101	82 - 127			

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R462069 (0)		Instrument: VOA4		Method: LOW LEVEL VOLATILES BY SW8260C						
MSD		Sample ID: HS24031181-01MSD		Units: ug/L		Analysis Date: 23-Mar-2024 06:12				
Client ID:		Run ID: VOA4_462069		SeqNo: 7904834		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.31	1.0	20	0	96.5	70 - 127	19.49	0.938	20	
Ethylbenzene	17.45	1.0	20	0	87.3	70 - 124	17.52	0.378	20	
m,p-Xylene	34.96	2.0	40	0	87.4	70 - 130	34.94	0.0504	20	
o-Xylene	17.32	1.0	20	0	86.6	70 - 124	17.08	1.41	20	
Toluene	19.11	1.0	20	0	95.6	70 - 123	19.26	0.766	20	
Xylenes, Total	52.28	3.0	60	0	87.1	70 - 130	52.02	0.498	20	
Surr: 1,2-Dichloroethane-d4	49.17	1.0	50	0	98.3	70 - 126	50.45	2.55	20	
Surr: 4-Bromofluorobenzene	48.25	1.0	50	0	96.5	77 - 113	49.09	1.74	20	
Surr: Dibromofluoromethane	43.67	1.0	50	0	87.3	77 - 123	44.48	1.84	20	
Surr: Toluene-d8	50.83	1.0	50	0	102	82 - 127	50.69	0.263	20	

The following samples were analyzed in this batch: HS24031180-01

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R461997 (0)		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
MBLK	Sample ID: WMBLK-03222024	Units: mg/L		Analysis Date: 22-Mar-2024 08:00						
Client ID:	Run ID: Balance1_461997	SeqNo: 7902996		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)		ND	10.0							

LCS	Sample ID: WLCS-03222024	Units: mg/L		Analysis Date: 22-Mar-2024 08:00						
Client ID:	Run ID: Balance1_461997	SeqNo: 7902995		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)		940	10.0	1000	0	94.0	85 - 115			

DUP	Sample ID: HS24031179-02DUP	Units: mg/L		Analysis Date: 22-Mar-2024 08:00						
Client ID:	Run ID: Balance1_461997	SeqNo: 7902990		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)		2160	10.0				2180	0.922	20	

The following samples were analyzed in this batch: HS24031180-01

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R462049 (0)		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
MBLK	Sample ID: MBLK	Units: mg/L		Analysis Date: 24-Mar-2024 10:42					
Client ID:	Run ID: ICS-Integrion_462049		SeqNo: 7904293		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	ND	0.500							
Sulfate	ND	0.500							

LCS	Sample ID: LCS	Units: mg/L		Analysis Date: 24-Mar-2024 10:59					
Client ID:	Run ID: ICS-Integrion_462049		SeqNo: 7904294		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	20.87	0.500	20	0	104	90 - 110			
Sulfate	21.44	0.500	20	0	107	90 - 110			

MS	Sample ID: HS24031333-01MS	Units: mg/L		Analysis Date: 24-Mar-2024 11:11					
Client ID:	Run ID: ICS-Integrion_462049		SeqNo: 7904296		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	18.67	0.500	10	8.559	101	80 - 120			
Sulfate	15	0.500	10	4.636	104	80 - 120			

MS	Sample ID: HS24030884-01MS	Units: mg/L		Analysis Date: 24-Mar-2024 11:35					
Client ID:	Run ID: ICS-Integrion_462049		SeqNo: 7904300		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	67.62	0.500	10	59.01	86.1	80 - 120			O
Sulfate	126.5	0.500	10	123.1	34.0	80 - 120			SEO

MSD	Sample ID: HS24031333-01MSD	Units: mg/L		Analysis Date: 24-Mar-2024 11:17					
Client ID:	Run ID: ICS-Integrion_462049		SeqNo: 7904297		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Chloride	18.88	0.500	10	8.559	103	80 - 120	18.67	1.12	20
Sulfate	15.17	0.500	10	4.636	105	80 - 120	15	1.17	20

Client:

Project:

WorkOrder:

PDC Energy

Seeley Federal 108-20N-30C-L

HS24031180

QC BATCH REPORT

Batch ID: R462049 (0)		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993						
MSD	Sample ID: HS24030884-01MSD	Units: mg/L		Analysis Date: 24-Mar-2024 11:41						
Client ID:	Run ID: ICS-Integrion_462049		SeqNo: 7904301		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	68.44	0.500	10	59.01	94.3	80 - 120	67.62	1.21	20	O
Sulfate	127.7	0.500	10	123.1	45.6	80 - 120	126.5	0.916	20	SEO

The following samples were analyzed in this batch:

HS24031180-01

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

QC BATCH REPORT

Batch ID: R462259 (0)		Instrument: Skalar 03		Method: ALKALINITY BY -2011					
MBLK	Sample ID: MBLK	Units: mg/L		Analysis Date: 26-Mar-2024 12:29					
Client ID:	Run ID: Skalar 03_462259	SeqNo: 7908965		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	5.00							
Alkalinity, Carbonate (As CaCO3)	ND	5.00							
Alkalinity, Total (As CaCO3)	ND	5.00							

LCS	Sample ID: LCS 03262024	Units: mg/L		Analysis Date: 26-Mar-2024 12:35					
Client ID:	Run ID: Skalar 03_462259	SeqNo: 7908966		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Carbonate (As CaCO3)	924	5.00	1000	0	92.4	85 - 115			
Alkalinity, Total (As CaCO3)	929	5.00	1000	0	92.9	85 - 115			

LCSD	Sample ID: LCSD 03262024	Units: mg/L		Analysis Date: 26-Mar-2024 12:41					
Client ID:	Run ID: Skalar 03_462259	SeqNo: 7908967		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Carbonate (As CaCO3)	917.4	5.00	1000	0	91.7	85 - 115	924	0.717	20
Alkalinity, Total (As CaCO3)	925.4	5.00	1000	0	92.5	85 - 115	929	0.388	20

DUP	Sample ID: HS24031345-01 DUP	Units: mg/L		Analysis Date: 26-Mar-2024 13:12					
Client ID:	Run ID: Skalar 03_462259	SeqNo: 7908957		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)	293.5	5.00					297.8	1.45	20
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20
Alkalinity, Total (As CaCO3)	293.5	5.00					297.8	1.45	20

The following samples were analyzed in this batch: HS24031180-01

Client: PDC Energy
Project: Seeley Federal 108-20N-30C-L
WorkOrder: HS24031180

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919; 2024	30-Apr-2024
Dept of Defense	L22-90-R2	31-Mar-2024
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624 - 2024	31-Dec-2024
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-32	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS24031180

Date/Time Received: 20-Mar-2024 09:40

Client Name: PDC Energy 80203

Received by: Paresh M. Giga

Completed By: /S/ Paresh M. Giga	21-Mar-2024 14:56	Reviewed by: /S/ Tyler Monroe	25-Mar-2024 14:06
eSignature	Date/Time	eSignature	Date/Time

Matrices: WaterCarrier name: FedEx Priority Overnight

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	1 Page(s)
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	COC IDs:none
Samplers name present on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	1.6C/1.5C U/C IR31		
Cooler(s)/Kit(s):	Red		
Date/Time sample(s) sent to storage:	3/21/24 15:25		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	Paresh M. Giga		
Login Notes:	Metals pH >2 (13). Preserved with 2ml HNO3 (Lot 324065308) 3/21/24 @ 15:10. Final pH (13)		

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

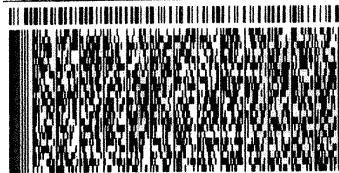
Corrective Action:

ORIGIN ID: GKYA (281) 530-5656
SAMPLE RECEIVING
ALS
10450 STANCLIFF RD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 19MAR24
ACTWTG: 51.75 LB
CAD: 0760439/CAFE3709
DIMS: 23x14x13 IN
BILL THIRD PARTY

TO **SAMPLE RECEIVING
ALS HOUSTON
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099**

(281) 530-5656
PO: 967554812



FedEx
Express



TRK# 7122 9261 8394
0201

WED - 20 MAR 10:30A
PRIORITY OVERNIGHT

NA SGRA *12-D*

77099
TX-US IAH

Print #: 157077-434 MTW EXP 06/22



3/20/24 12D 1.60
09-40-431
CIF - 0.10