



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

October 23, 2024

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

Work Order: **HS24100847**

Laboratory Results for: **Burton K25-68-1HNL**

Dear Jessica Johannsen,

ALS Environmental received 1 sample(s) on Oct 12, 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

Anna Kinchen
Project Manager

Client: PDC Energy
Project: Burton K25-68-1HNL
Work Order: HS24100847

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24100847-01	Burton K25-68-1HNL	Water		10-Oct-2024 12:20	12-Oct-2024 09:00	<input type="checkbox"/>

Client: PDC Energy
Project: Burton K25-68-1HNL
Work Order: HS24100847

CASE NARRATIVE

GC Semivolatiles by Method RSK-175**Batch ID: R479846**

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

GC Semivolatiles by Method SW8015M**Batch ID: 218985**

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

GC Volatiles by Method SW8015**Batch ID: R480220****Sample ID: Burton K25-68-1HNL (HS24100847-01)**

- Lowest possible dilution due to sample matrix

GCMS Volatiles by Method SW8260**Batch ID: R480666****Sample ID: HS24101213-03MS**

- MS and MSD are for an unrelated sample

Metals by Method E200.8**Batch ID: 219293****Sample ID: Burton K25-68-1HNL (HS24100847-01)**

- Sample ran at (2)X dilution due to high concentration of Sodium.

Sample ID: HS24101030-03MS

- MS and MSD are for an unrelated sample (Calcium,Sodium)

WetChemistry by Method SM2320B**Batch ID: R480615**

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

WetChemistry by Method E300**Batch ID: R480617****Sample ID: Burton K25-68-1HNL (HS24100847-01)**

- The reporting limit is elevated due to dilution for high concentrations of non-target analytes. (Sulfate)

Batch ID: R480489

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

Client: PDC Energy
Project: Burton K25-68-1HNL
Work Order: HS24100847

CASE NARRATIVE

WetChemistry by Method M2540C

Batch ID: R480317

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

Client: PDC Energy
 Project: Burton K25-68-1HNL
 Sample ID: Burton K25-68-1HNL
 Collection Date: 10-Oct-2024 12:20

ANALYTICAL REPORT

WorkOrder:HS24100847
 Lab ID:HS24100847-01
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		Method:SW8260		Analyst: DP		
Benzene	ND		500	ug/L	500	22-Oct-2024 12:24
Ethylbenzene	ND		500	ug/L	500	22-Oct-2024 12:24
m,p-Xylene	ND		1000	ug/L	500	22-Oct-2024 12:24
o-Xylene	ND		500	ug/L	500	22-Oct-2024 12:24
Toluene	ND		500	ug/L	500	22-Oct-2024 12:24
Xylenes, Total	ND		1500	ug/L	500	22-Oct-2024 12:24
Surr: 1,2-Dichloroethane-d4	101		70-126	%REC	500	22-Oct-2024 12:24
Surr: 4-Bromofluorobenzene	101		77-113	%REC	500	22-Oct-2024 12:24
Surr: Dibromofluoromethane	99.1		77-123	%REC	500	22-Oct-2024 12:24
Surr: Toluene-d8	99.1		82-127	%REC	500	22-Oct-2024 12:24
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: LC		
Gasoline Range Organics	ND		100	mg/L	500	16-Oct-2024 15:52
Surr: 4-Bromofluorobenzene	121		70-123	%REC	500	16-Oct-2024 15:52
DISSOLVED GASES BY RSK-175		Method:RSK-175		Analyst: RG		
Ethane	132		100	ug/L	100	14-Oct-2024 15:01
Methane	3,130		50.0	ug/L	100	14-Oct-2024 16:03
Propane	36.1		1.00	ug/L	1	14-Oct-2024 12:06
DIESEL RANGE ORGANICS BY SW8015C		Method:SW8015M		Prep:SW3510C / 14-Oct-2024 Analyst: SAM		
DRO (>C10 - C28)	0.879		0.417	mg/L	1	14-Oct-2024 18:18
Surr: 2-Fluorobiphenyl	80.7		60-135	%REC	1	14-Oct-2024 18:18
TOTAL METALS BY E200.8, REV 5.4, 1994		Method:E200.8		Prep:E200.8 / 19-Oct-2024 Analyst: MSC		
Calcium	7.69		2.50	mg/L	5	21-Oct-2024 16:26
Magnesium	ND		1.00	mg/L	2	21-Oct-2024 17:19
Potassium	54.6		2.50	mg/L	5	21-Oct-2024 16:26
Sodium	1,400		20.0	mg/L	100	21-Oct-2024 17:29
ANIONS BY E300.0, REV 2.1, 1993		Method:E300		Analyst: TH		
Chloride	1,330		25.0	mg/L	50	19-Oct-2024 16:22
Sulfate	ND		1.00	mg/L	2	21-Oct-2024 15:07
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		Method:M2540C		Analyst: KC		
Total Dissolved Solids (Residue, Filterable)	3,540		10.0	mg/L	1	17-Oct-2024 08:00
ALKALINITY BY -2011		Method:SM2320B		Analyst: AR		
Alkalinity, Bicarbonate (As CaCO3)	1,090		50.0	mg/L	10	21-Oct-2024 12:47
Alkalinity, Carbonate (As CaCO3)	448		50.0	mg/L	10	21-Oct-2024 12:47
Alkalinity, Total (As CaCO3)	1,540		50.0	mg/L	10	21-Oct-2024 12:47

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

Weight / Prep Log

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

Batch ID: 218985	Start Date: 14 Oct 2024 13:41	End Date: 14 Oct 2024 13:41
Method: AQPREP: 3510C TPH	Prep Code: 8015WPR_LL	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS24100847-01	1	120 (mL)	1 (mL)	0.008333	40 mL Amber

Batch ID: 219293	Start Date: 19 Oct 2024 07:30	End Date: 19 Oct 2024 07:30
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	
HS24100847-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 218985 (0)		Test Name : DIESEL RANGE ORGANICS BY SW8015C			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20		14 Oct 2024 13:41	14 Oct 2024 18:18	1
Batch ID: 219293 (0)		Test Name : TOTAL METALS BY E200.8, REV 5.4, 1994			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20		19 Oct 2024 07:30	21 Oct 2024 17:29	100
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20		19 Oct 2024 07:30	21 Oct 2024 17:19	2
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20		19 Oct 2024 07:30	21 Oct 2024 16:26	5
Batch ID: R479846 (0)		Test Name : DISSOLVED GASES BY RSK-175			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			14 Oct 2024 16:03	100
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			14 Oct 2024 15:01	100
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			14 Oct 2024 12:06	1
Batch ID: R480220 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			16 Oct 2024 15:52	500
Batch ID: R480317 (0)		Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C-2011			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			17 Oct 2024 08:00	1
Batch ID: R480489 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			19 Oct 2024 16:22	50
Batch ID: R480615 (0)		Test Name : ALKALINITY BY -2011			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			21 Oct 2024 12:47	10
Batch ID: R480617 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			21 Oct 2024 15:07	2
Batch ID: R480666 (0)		Test Name : LOW LEVEL VOLATILES BY SW8260C			Matrix: Water	
HS24100847-01	Burton K25-68-1HNL	10 Oct 2024 12:20			22 Oct 2024 12:24	500

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: 218985 (0)		Instrument: FID-22		Method: DIESEL RANGE ORGANICS BY SW8015C						
MBLK	Sample ID: MBLK-218985	Units: mg/L		Analysis Date: 14-Oct-2024 15:35						
Client ID:	Run ID: FID-22_480106		SeqNo: 8315119		PrepDate: 14-Oct-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	ND	0.0500								
Surr: 2-Fluorobiphenyl	0.08495	0.00500	0.1	0	84.9	60 - 135				
LCS	Sample ID: LCS-218985	Units: mg/L		Analysis Date: 14-Oct-2024 15:59						
Client ID:	Run ID: FID-22_480106		SeqNo: 8315120		PrepDate: 14-Oct-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	1.015	0.0500	1	0	101	70 - 130				
Surr: 2-Fluorobiphenyl	0.09978	0.00500	0.1	0	99.8	60 - 135				
LCSD	Sample ID: LCSD-218985	Units: mg/L		Analysis Date: 14-Oct-2024 17:55						
Client ID:	Run ID: FID-22_480106		SeqNo: 8315123		PrepDate: 14-Oct-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	0.9775	0.0500	1	0	97.8	70 - 130	1.015	3.72	20	
Surr: 2-Fluorobiphenyl	0.09802	0.00500	0.1	0	98.0	60 - 135	0.09978	1.78	20	
The following samples were analyzed in this batch: HS24100847-01										

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R479846 (0)		Instrument: FID-4		Method: DISSOLVED GASES BY RSK-175					
MBLK	Sample ID: MBLK-241014	Units: ug/L		Analysis Date: 14-Oct-2024 09:25					
Client ID:	Run ID: FID-4_479846		SeqNo: 8309634		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-241014	Units: ug/L		Analysis Date: 14-Oct-2024 09:42					
Client ID:	Run ID: FID-4_479846		SeqNo: 8309635		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	17.45	1.00	18.04	0	96.7	75 - 125			
Methane	9.499	0.500	9.647	0	98.5	75 - 125			
Propane	25.2	1.50	26.46	0	95.2	75 - 125			

LCSD	Sample ID: LCSD-241014	Units: ug/L		Analysis Date: 14-Oct-2024 10:00					
Client ID:	Run ID: FID-4_479846		SeqNo: 8309636		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	17.26	1.00	18.04	0	95.7	75 - 125	17.45	1.11	30
Methane	9.199	0.500	9.647	0	95.4	75 - 125	9.499	3.2	30
Propane	24.83	1.50	26.46	0	93.8	75 - 125	25.2	1.49	30

The following samples were analyzed in this batch: HS24100847-01

Client: PDC Energy
 Project: Burton K25-68-1HNL
 WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R480220 (0)		Instrument: FID-20		Method: GASOLINE RANGE ORGANICS BY SW8015C						
MBLK	Sample ID: MBLK-241016	Units: mg/L		Analysis Date: 16-Oct-2024 13:50						
Client ID:	Run ID: FID-20_480220	SeqNo: 8318180		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	0.200								
Surr: 4-Bromofluorobenzene	0.1055	0.00500	0.1	0	106	70 - 121				

LCS	Sample ID: LCS-241016	Units: mg/L		Analysis Date: 16-Oct-2024 13:09						
Client ID:	Run ID: FID-20_480220	SeqNo: 8318178		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.088	0.200	1	0	109	76 - 124				
Surr: 4-Bromofluorobenzene	0.08716	0.00500	0.1	0	87.2	52 - 138				

LCSD	Sample ID: LCSD-241016	Units: mg/L		Analysis Date: 16-Oct-2024 13:23						
Client ID:	Run ID: FID-20_480220	SeqNo: 8318179		PrepDate:		DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.059	0.200	1	0	106	76 - 124	1.088	2.66	20	
Surr: 4-Bromofluorobenzene	0.09012	0.00500	0.1	0	90.1	52 - 138	0.08716	3.34	20	

The following samples were analyzed in this batch: HS24100847-01

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: 219293 (0)		Instrument: ICPMS07		Method: TOTAL METALS BY E200.8, REV 5.4, 1994					
MBLK	Sample ID: MBLK-219293	Units: ug/L		Analysis Date: 21-Oct-2024 15:47					
Client ID:	Run ID: ICPMS07_480520	SeqNo: 8326106		PrepDate: 19-Oct-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-219293	Units: ug/L		Analysis Date: 21-Oct-2024 16:04					
Client ID:	Run ID: ICPMS07_480520	SeqNo: 8326107		PrepDate: 19-Oct-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	4689	500	5000	0	93.8	85 - 115			
Magnesium	4690	500	5000	0	93.8	85 - 115			
Potassium	4603	500	5000	0	92.1	85 - 115			
Sodium	4733	200	5000	0	94.7	85 - 115			

MS	Sample ID: HS24101030-03MS	Units: ug/L		Analysis Date: 21-Oct-2024 16:16					
Client ID:	Run ID: ICPMS07_480520	SeqNo: 8326121		PrepDate: 19-Oct-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	71070	500	5000	60700	207	70 - 130			SO
Magnesium	16130	500	5000	10340	116	70 - 130			
Potassium	6728	500	5000	1761	99.3	70 - 130			
Sodium	46380	200	5000	38520	157	70 - 130			SO

MSD	Sample ID: HS24101030-03MSD	Units: ug/L		Analysis Date: 21-Oct-2024 16:18					
Client ID:	Run ID: ICPMS07_480520	SeqNo: 8326122		PrepDate: 19-Oct-2024		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	70390	500	5000	60700	194	70 - 130	71070	0.956	20 SO
Magnesium	16060	500	5000	10340	114	70 - 130	16130	0.452	20
Potassium	6554	500	5000	1761	95.9	70 - 130	6728	2.62	20
Sodium	46400	200	5000	38520	158	70 - 130	46380	0.056	20 SO

The following samples were analyzed in this batch: HS24100847-01

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R480666 (0)		Instrument: VOA14		Method: LOW LEVEL VOLATILES BY SW8260C					
MBLK	Sample ID: VBLKW-241021	Units: ug/L		Analysis Date: 22-Oct-2024 03:38					
Client ID:	Run ID: VOA14_480666	SeqNo: 8327622		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	50.9	1.0	50	0	102	70 - 123			
Surr: 4-Bromofluorobenzene	50.71	1.0	50	0	101	77 - 113			
Surr: Dibromofluoromethane	50.43	1.0	50	0	101	73 - 126			
Surr: Toluene-d8	49.9	1.0	50	0	99.8	81 - 120			

LCS	Sample ID: VLCSW-241021	Units: ug/L		Analysis Date: 22-Oct-2024 12:48					
Client ID:	Run ID: VOA14_480666	SeqNo: 8328081		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	18.45	1.0	20	0	92.3	74 - 120			
Ethylbenzene	20.06	1.0	20	0	100	77 - 117			
m,p-Xylene	39.72	2.0	40	0	99.3	77 - 122			
o-Xylene	19.64	1.0	20	0	98.2	75 - 119			
Toluene	19.45	1.0	20	0	97.3	77 - 118			
Xylenes, Total	59.36	3.0	60	0	98.9	75 - 122			
Surr: 1,2-Dichloroethane-d4	48.58	1.0	50	0	97.2	70 - 123			
Surr: 4-Bromofluorobenzene	49.34	1.0	50	0	98.7	77 - 113			
Surr: Dibromofluoromethane	48.88	1.0	50	0	97.8	73 - 126			
Surr: Toluene-d8	50.54	1.0	50	0	101	81 - 120			

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R480666 (0) **Instrument:** VOA14 **Method:** LOW LEVEL VOLATILES BY SW8260C

MS	Sample ID: HS24101213-03MS	Units: ug/L			Analysis Date: 22-Oct-2024 05:14				
Client ID:	Run ID: VOA14_480666	SeqNo: 8327626			PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	18.64	1.0	20	0	93.2	70 - 127			
Ethylbenzene	20.08	1.0	20	0	100	70 - 124			
m,p-Xylene	40.2	2.0	40	0	100	70 - 130			
o-Xylene	19.64	1.0	20	0	98.2	70 - 124			
Toluene	19.26	1.0	20	0	96.3	70 - 123			
Xylenes, Total	59.84	3.0	60	0	99.7	70 - 130			
Surr: 1,2-Dichloroethane-d4	50.77	1.0	50	0	102	70 - 126			
Surr: 4-Bromofluorobenzene	50.41	1.0	50	0	101	77 - 113			
Surr: Dibromofluoromethane	50.25	1.0	50	0	101	77 - 123			
Surr: Toluene-d8	50.41	1.0	50	0	101	82 - 127			

MSD	Sample ID: HS24101213-03MSD	Units: ug/L	Analysis Date: 22-Oct-2024 05:38							
Client ID:	Run ID: VOA14_480666	SeqNo: 8327627	PrepDate:		DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Benzene	13.73	1.0	20	0	68.7	70 - 127	18.64	30.3	20	SR
Ethylbenzene	14.53	1.0	20	0	72.6	70 - 124	20.08	32.1	20	R
m,p-Xylene	28.32	2.0	40	0	70.8	70 - 130	40.2	34.7	20	R
o-Xylene	14.2	1.0	20	0	71.0	70 - 124	19.64	32.2	20	R
Toluene	13.91	1.0	20	0	69.5	70 - 123	19.26	32.3	20	SR
Xylenes, Total	42.52	3.0	60	0	70.9	70 - 130	59.84	33.8	20	R
Surr: 1,2-Dichloroethane-d4	49.89	1.0	50	0	99.8	70 - 126	50.77	1.75	20	
Surr: 4-Bromofluorobenzene	50.16	1.0	50	0	100	77 - 113	50.41	0.498	20	
Surr: Dibromofluoromethane	50.18	1.0	50	0	100	77 - 123	50.25	0.154	20	
Surr: Toluene-d8	50.26	1.0	50	0	101	82 - 127	50.41	0.308	20	

The following samples were analyzed in this batch: HS24100847-01

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R480317 (0)		Instrument: Balance1		Method: TOTAL DISSOLVED SOLIDS BY SM2540C-2011						
MBLK	Sample ID: WMBLK-10172024	Units: mg/L		Analysis Date: 17-Oct-2024 08:00						
Client ID:	Run ID: Balance1_480317	SeqNo: 8319671		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-10172024	Units: mg/L		Analysis Date: 17-Oct-2024 08:00						
Client ID:	Run ID: Balance1_480317	SeqNo: 8319670		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)		998	10.0	1000	0	99.8	85 - 115			
DUP	Sample ID: HS24100845-04 DUP	Units: mg/L		Analysis Date: 17-Oct-2024 08:00						
Client ID:	Run ID: Balance1_480317	SeqNo: 8319665		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)		1056	10.0				1080	2.25	20	
DUP	Sample ID: HS24100774-01 DUP	Units: mg/L		Analysis Date: 17-Oct-2024 08:00						
Client ID:	Run ID: Balance1_480317	SeqNo: 8319652		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)		578	10.0				554	4.24	20	
The following samples were analyzed in this batch:		HS24100847-01								

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R480489 (0)		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993					
MBLK	Sample ID: MBLK	Units: mg/L		Analysis Date: 19-Oct-2024 15:22					
Client ID:	Run ID: ICS-Integrion_480489		SeqNo: 8324181		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	ND	0.500							
LCS	Sample ID: LCS	Units: mg/L		Analysis Date: 19-Oct-2024 15:34					
Client ID:	Run ID: ICS-Integrion_480489		SeqNo: 8324182		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	20.14	0.500	20	0	101	90 - 110			
MS	Sample ID: HS24100978-01MS	Units: mg/L		Analysis Date: 19-Oct-2024 15:52					
Client ID:	Run ID: ICS-Integrion_480489		SeqNo: 8324184		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	9.797	0.500	10	0.101	97.0	80 - 120			
MS	Sample ID: HS24100853-01MS	Units: mg/L		Analysis Date: 19-Oct-2024 14:35					
Client ID:	Run ID: ICS-Integrion_480489		SeqNo: 8324176		PrepDate:		DF: 500		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	19710	250	5000	15470	84.7	80 - 120			
MSD	Sample ID: HS24100978-01MSD	Units: mg/L		Analysis Date: 19-Oct-2024 15:58					
Client ID:	Run ID: ICS-Integrion_480489		SeqNo: 8324185		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	9.761	0.500	10	0.101	96.6	80 - 120	9.797	0.368	20
MSD	Sample ID: HS24100853-01MSD	Units: mg/L		Analysis Date: 19-Oct-2024 14:41					
Client ID:	Run ID: ICS-Integrion_480489		SeqNo: 8324177		PrepDate:		DF: 500		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Chloride	19690	250	5000	15470	84.4	80 - 120	19710	0.0863	20
The following samples were analyzed in this batch: HS24100847-01									

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R480615 (0)		Instrument: Skalar 03		Method: ALKALINITY BY -2011					
MBLK	Sample ID: MBLK-10212024	Units: mg/L		Analysis Date: 21-Oct-2024 10:05					
Client ID:	Run ID: Skalar 03_480615	SeqNo: 8326567		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-10212024	Units: mg/L		Analysis Date: 21-Oct-2024 10:11					
Client ID:	Run ID: Skalar 03_480615	SeqNo: 8326568		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)	938.8	5.00	1000	0	93.9	85 - 115			
Alkalinity, Total (As CaCO3)	948.2	5.00	1000	0	94.8	85 - 115			

LCSD	Sample ID: LCSD-10212024	Units: mg/L		Analysis Date: 21-Oct-2024 10:17					
Client ID:	Run ID: Skalar 03_480615	SeqNo: 8326569		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)	942.2	5.00	1000	0	94.2	85 - 115	938.8	0.362	20
Alkalinity, Total (As CaCO3)	949.7	5.00	1000	0	95.0	85 - 115	948.2	0.158	20

DUP	Sample ID: HS24100524-02DUP	Units: mg/L		Analysis Date: 21-Oct-2024 10:37					
Client ID:	Run ID: Skalar 03_480615	SeqNo: 8326572		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)	418.1	5.00					414.3	0.913	20
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20
Alkalinity, Total (As CaCO3)	418.1	5.00					414.3	0.913	20

The following samples were analyzed in this batch: HS24100847-01

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

QC BATCH REPORT

Batch ID: R480617 (0)		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993						
MBLK	Sample ID: MBLK	Units: mg/L		Analysis Date: 21-Oct-2024 13:15						
Client ID:	Run ID: ICS-Integrion_480617		SeqNo: 8326658		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	ND	0.500								
LCS	Sample ID: LCS	Units: mg/L		Analysis Date: 21-Oct-2024 13:27						
Client ID:	Run ID: ICS-Integrion_480617		SeqNo: 8326659		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	21.83	0.500	20	0	109	90 - 110				
MS	Sample ID: HS24101187-03MS	Units: mg/L		Analysis Date: 21-Oct-2024 17:17						
Client ID:	Run ID: ICS-Integrion_480617		SeqNo: 8326690		PrepDate:		DF: 500			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	7876	250	5000	3028	97.0	80 - 120				
MS	Sample ID: HS24101187-02MS	Units: mg/L		Analysis Date: 21-Oct-2024 16:59						
Client ID:	Run ID: ICS-Integrion_480617		SeqNo: 8326687		PrepDate:		DF: 500			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	8664	250	5000	3578	102	80 - 120				
MSD	Sample ID: HS24101187-03MSD	Units: mg/L		Analysis Date: 21-Oct-2024 17:23						
Client ID:	Run ID: ICS-Integrion_480617		SeqNo: 8326691		PrepDate:		DF: 500			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	7839	250	5000	3028	96.2	80 - 120	7876	0.474	20	
MSD	Sample ID: HS24101187-02MSD	Units: mg/L		Analysis Date: 21-Oct-2024 17:05						
Client ID:	Run ID: ICS-Integrion_480617		SeqNo: 8326688		PrepDate:		DF: 500			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	8631	250	5000	3578	101	80 - 120	8664	0.385	20	
The following samples were analyzed in this batch: HS24100847-01										

Client: PDC Energy
Project: Burton K25-68-1HNL
WorkOrder: HS24100847

**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
Arizona	AZ0793	27-May-2025
Arkansas	88-00356_2024	27-Mar-2025
California	2919; 2025	30-Apr-2025
Dept of Defense	L24-240	30-Apr-2026
Dept of Defense	L24-239	30-Apr-2026
Florida	E87611-38	30-Jun-2025
Illinois	2000322023-11	31-Jul-2025
Kansas	E-10352 2023-2024	31-Jul-2025
Kentucky	123043	30-Apr-2025
Louisiana	03087 2023-2024	30-Jun-2025
Maine	2024017	23-Jun-2026
Michigan	9971	30-Apr-2025
Nebraska	NE-OS-25-13	30-Apr-2025
New Jersey	TX008	30-Jun-2025
North Carolina	624 - 2024	31-Dec-2024
Pennsylvania	018	30-Jun-2025
Tennessee	04016	30-Apr-2025
Texas	T104704231 TX-C24-00130	30-Apr-2025
Utah	TX026932023-14	31-Jul-2025

Sample Receipt Checklist

Work Order ID: HS24100847

Date/Time Received: **12-Oct-2024 09:00**

Client Name: PDC Energy 80203

Received by: **Kaycee Rogers**Completed By: /S/ Kaycee Rogers

12-Oct-2024 15:14

Reviewed by: /S/ Anna Kinchen

15-Oct-2024 13:11

eSignature

Date/Time

eSignature

Date/Time

Matrices: **W**Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒No ☐Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐No ☐Not Present ☒

Custody seals intact on sample bottles?

Yes ☐No ☐Not Present ☒

VOA/TX1005/TX1006 Solids in hermetically sealed vials?

Yes ☐No ☐Not Present ☒

Chain of custody present?

Yes ☒No ☐

1 Page(s)

Chain of custody signed when relinquished and received?

Yes ☒No ☐

Samplers name present on COC?

Yes ☐No ☒

Chain of custody agrees with sample labels?

Yes ☒No ☐

Samples in proper container/bottle?

Yes ☒No ☐

Sample containers intact?

Yes ☒No ☐

Sufficient sample volume for indicated test?

Yes ☒No ☐

All samples received within holding time?

Yes ☒No ☐

Container/Temp Blank temperature in compliance?

Yes ☒No ☐

Temperature(s)/Thermometer(s):

2.0UC/2.0C

IR 34

Cooler(s)/Kit(s):

BLUE

Date/Time sample(s) sent to storage:

10/12/2024 1514

Water - VOA vials have zero headspace?

Yes ☒No ☐No VOA vials submitted ☐

Water - pH acceptable upon receipt?

Yes ☒No ☐N/A ☐

pH adjusted?

Yes ☐No ☒N/A ☐

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

Corrective Action:

**ALS Environmental**965 E 11th St
Loveland, CO 80537
PH: 970-305-1648**Chain-of-Custody**

WORKORDER #

SAMPLER Jeff Braden		DATE 10/10/24		PAGE 1 of 1												
PROJECT NAME Burton K25-68-1 HNL	FACILITY ID 123-38367	TURNAROUND Standard		DISPOSAL By Lab or Return to Client												
PROJECT No. 09F2073362	EDD FORMAT ECMC EDD, LTE	<div>Disolved Methane, Ethane, Propane BTEx & TPH GRO TPH DRO Alkalinity, Carbonate, Bicarbonate, Total Total Cations - see comments Total Anions - see comments Total Dissolved Solids</div>		<div>Barcode</div>												
PDCE Bradenhead Sampling	PURCHASE ORDER N/A															
COMPANY NAME PDC Energy	BILL TO COMPANY PDC Energy															
SEND REPORT TO Jessica Johannsen, Cassie Gonzalez, Raul Sanchez, Evan Varnas	INVOICE ATTN TO Christopher Schelich															
ADDRESS 1775 Sherman ST, Suite 3000	ADDRESS 1775 Sherman Street, Suite 3000															
CITY / STATE / ZIP Denver, CO 80203	CITY / STATE / ZIP Denver, Colorado															
PHONE 303-860-5815	PHONE 970-415-1881															
FAX	FAX															
E-MAIL Jessica.Johannsen@chevron.com Cassie.Gonzales@chevron.com Raul.Sanchez@chevron.com Evan.Varnas@chevron.com	E-MAIL Christopher.Schelich@pdce.com															
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	RSK 175	SW8260_25	SW8015M	SM2320B	EPA200.7/208	EPA 300.0	SM2540C		
	Burton K25-68-1 HNL	W	10/10/24	1220	11	1,2	II	X	X	X	X	X	X	X		

*Time Zone: MST

Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	Cations/Anions:	QC PACKAGE (check below)	
Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate* Samples analyzed per ECMC Bradenhead Sampling Program If bubbles are present in voas, please proceed with analysis		X	LEVEL II (Standard QC)
			LEVEL III (Std QC + forms)
			LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035			

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
		Jeff Braden	10/11/24	1100
RECEIVED BY		Jenny Morgan	10/11/24	1100
RELINQUISHED BY		Jenny Morgan	10/11/24	1600
RECEIVED BY		Kaycee Rogers	10/12/24	900
RELINQUISHED BY				
RECEIVED BY				

Blue 2.1 cc.0 ir 34
Page 21 of 21