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March 31, 2023

Jenifer Hakkarinen
PDC Energy
1775 Sherman Street
Suite 3000
Denver, CO 80203

Work Order: **HS23031123**

Laboratory Results for: **Postle IC 09-022HC**

Dear Jenifer Hakkarinen,

ALS Environmental received 1 sample(s) on Mar 18, 2023 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: DAYNA.FISHER
Tyler Monroe

Client: PDC Energy
Project: Postle IC 09-022HC
Work Order: HS23031123

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23031123-01	Postle IC 09-022HC	Water		17-Mar-2023 09:30	18-Mar-2023 09:53	☐

Client: PDC Energy **CASE NARRATIVE**
Project: Postle IC 09-022HC
Work Order: HS23031123

GC Semivolatiles by Method RSK-175

Batch ID: R430633

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

GC Semivolatiles by Method SW8015M

Batch ID: 191101

Sample ID: Postle IC 09-022HC (HS23031123-01)

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

GC Volatiles by Method SW8015

Batch ID: R430526

Sample ID: Postle IC 09-022HC (HS23031123-01)

• Surrogate failed outside of control limits high due to sample matrix interference. This was confirmed by sample reanalysis.

GCMS Volatiles by Method SW8260

Batch ID: R430759

Sample ID: Postle IC 09-022HC (HS23031123-01)

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

Metals by Method E200.8

Batch ID: 191568

Sample ID: HS23031133-01MS

• MS and MSD are for an unrelated sample

Sample ID: HS23031461-01MS

• MS and MSD are for an unrelated sample

WetChemistry by Method SM2320B

Batch ID: R431477

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

WetChemistry by Method E300

Batch ID: R430863

Sample ID: HS23031321-02MS

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

WetChemistry by Method M2540C

Batch ID: R430666

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

Client: PDC Energy
Project: Postle IC 09-022HC
Sample ID: Postle IC 09-022HC
Collection Date: 17-Mar-2023 09:30

ANALYTICAL REPORT
WorkOrder:HS23031123
Lab ID:HS23031123-01
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: AKP
Benzene	ND		500	ug/L	500	23-Mar-2023 04:01
Ethylbenzene	ND		500	ug/L	500	23-Mar-2023 04:01
m,p-Xylene	ND		1000	ug/L	500	23-Mar-2023 04:01
o-Xylene	ND		500	ug/L	500	23-Mar-2023 04:01
Toluene	ND		500	ug/L	500	23-Mar-2023 04:01
Xylenes, Total	ND		500	ug/L	500	23-Mar-2023 04:01
Surr: 1,2-Dichloroethane-d4	*98.5*		*70-126*	*%REC*	*500*	*23-Mar-2023 04:01*
Surr: 4-Bromofluorobenzene	*87.9*		*77-113*	*%REC*	*500*	*23-Mar-2023 04:01*
Surr: Dibromofluoromethane	*98.6*		*77-123*	*%REC*	*500*	*23-Mar-2023 04:01*
Surr: Toluene-d8	*98.1*		*82-127*	*%REC*	*500*	*23-Mar-2023 04:01*
GASOLINE RANGE ORGANICS BY SW8015C		**Method:SW8015**				Analyst: PJM
Gasoline Range Organics	**84.7**		**25.0**	**mg/L**	500	20-Mar-2023 18:03
Surr: 4-Bromofluorobenzene	*315*	*S*	*70-123*	*%REC*	*500*	*20-Mar-2023 18:03*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**				Analyst: SAM
Ethane	**64.5**		**1.00**	**ug/L**	1	21-Mar-2023 13:53
Methane	**141**		**2.50**	**ug/L**	5	21-Mar-2023 14:15
Propane	**61.0**		**1.00**	**ug/L**	1	21-Mar-2023 13:53
TPH DRO/ORO BY SW8015C		**Method:SW8015M**		Prep:SW3511 / 21-Mar-2023		Analyst: SAM
TPH (Diesel Range)	**420**		**5.1**	**mg/L**	100	22-Mar-2023 21:53
Surr: 2-Fluorobiphenyl	*0*	*JS*	*60-135*	*%REC*	*100*	*22-Mar-2023 21:53*
TOTAL METALS BY E200.8, REV 5.4, 1994		**Method:E200.8**		Prep:E200.8 / 30-Mar-2023		Analyst: JC
Calcium	**329**		**5.00**	**mg/L**	10	30-Mar-2023 19:42
Magnesium	**8.10**		**5.00**	**mg/L**	10	30-Mar-2023 19:42
Potassium	**220**		**5.00**	**mg/L**	10	30-Mar-2023 19:42
Sodium	**233**		**2.00**	**mg/L**	10	30-Mar-2023 19:42
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**				Analyst: TH
Chloride	**884**		**25.0**	**mg/L**	50	23-Mar-2023 17:44
Sulfate	ND		0.500	mg/L	1	23-Mar-2023 19:22
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**				Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**3,570**		**10.0**	**mg/L**	1	21-Mar-2023 12:03
ALKALINITY BY SM 2320B-2011		**Method:SM2320B**				Analyst: JAC
Alkalinity, Bicarbonate (As CaCO3)	**285**		**5.00**	**mg/L**	1	30-Mar-2023 19:50
Alkalinity, Carbonate (As CaCO3)	**59.6**		**5.00**	**mg/L**	1	30-Mar-2023 19:50
Alkalinity, Total (As CaCO3)	**344**		**5.00**	**mg/L**	1	30-Mar-2023 19:50

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

Weight / Prep Log

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

Batch ID: 191101 **Start Date:** 21 Mar 2023 10:00 **End Date:** 21 Mar 2023 14:00
Method: SW3511 **Prep Code:** 3511_DRO

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23031123-01		32.44 (mL)	2 (mL)	0.06165	40 mL Amber

Batch ID: 191568 **Start Date:** 30 Mar 2023 12:00 **End Date:** 30 Mar 2023 16:00
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	
HS23031123-01		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 191101 (0)	**Test Name :** TPH DRO/ORO BY SW8015C				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30		21 Mar 2023 10:00	22 Mar 2023 21:53	100
Batch ID: 191568 (0)	**Test Name :** TOTAL METALS BY E200.8, REV 5.4, 1994				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30		30 Mar 2023 12:00	30 Mar 2023 19:42	10
Batch ID: R430526 (0)	**Test Name :** GASOLINE RANGE ORGANICS BY SW8015C				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			20 Mar 2023 18:03	500
Batch ID: R430633 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			21 Mar 2023 14:15	5
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			21 Mar 2023 13:53	1
Batch ID: R430666 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			21 Mar 2023 12:03	1
Batch ID: R430759 (0)	**Test Name :** LOW LEVEL VOLATILES BY SW8260C				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			23 Mar 2023 04:01	500
Batch ID: R430863 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			23 Mar 2023 19:22	1
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			23 Mar 2023 17:44	50
Batch ID: R431477 (0)	**Test Name :** ALKALINITY BY SM 2320B-2011				**Matrix:** Water	
HS23031123-01	Postle IC 09-022HC	17 Mar 2023 09:30			30 Mar 2023 19:50	1

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: 191101 (0) **Instrument: FID-16** **Method: TPH DRO/ORO BY SW8015C**

MBLK Sample ID: **MBLK-191101** Units: **mg/L** Analysis Date: **22-Mar-2023 14:32**
Client ID: Run ID: **FID-16_430854** SeqNo: **7192387** PrepDate: **21-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	ND	0.050								
Surr: 2-Fluorobiphenyl	*0.04681*	*0.0050*	*0.06*	*0*	*78.0*	*60 - 135*				

LCS Sample ID: **LCS-191101** Units: **mg/L** Analysis Date: **22-Mar-2023 15:01**
Client ID: Run ID: **FID-16_430854** SeqNo: **7192388** PrepDate: **21-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.6129	0.050	0.6	0	102	70 - 130				
Surr: 2-Fluorobiphenyl	*0.06518*	*0.0050*	*0.06*	*0*	*109*	*60 - 135*				

LCSD Sample ID: **LCSD-191101** Units: **mg/L** Analysis Date: **22-Mar-2023 15:30**
Client ID: Run ID: **FID-16_430854** SeqNo: **7192389** PrepDate: **21-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.6297	0.050	0.6	0	105	70 - 130	0.6129	2.69	20	
Surr: 2-Fluorobiphenyl	*0.06744*	*0.0050*	*0.06*	*0*	*112*	*60 - 135*	*0.06518*	*3.41*	*20*	

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R430633 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-230321** Units: **ug/L** Analysis Date: **21-Mar-2023 08:01**
Client ID: Run ID: **FID-4_430633** SeqNo: **7187072** 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	1.00								

LCS Sample ID: **LCS-230321** Units: **ug/L** Analysis Date: **21-Mar-2023 08:16**
Client ID: Run ID: **FID-4_430633** SeqNo: **7187073** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	19.52	1.00	18.04	0	108	75 - 125				
Methane	8.664	0.500	9.647	0	89.8	75 - 125				
Propane	29.61	1.00	26.46	0	112	75 - 125				

LCSD Sample ID: **LCSD-230321** Units: **ug/L** Analysis Date: **21-Mar-2023 08:39**
Client ID: Run ID: **FID-4_430633** SeqNo: **7187074** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	19.88	1.00	18.04	0	110	75 - 125	19.52	1.83	30	
Methane	8.821	0.500	9.647	0	91.4	75 - 125	8.664	1.8	30	
Propane	28.94	1.00	26.46	0	109	75 - 125	29.61	2.3	30	

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R430526 (0) **Instrument:** FID-20 **Method:** GASOLINE RANGE ORGANICS BY SW8015C

MBLK Sample ID: **MBLK-230320** Units: **mg/L** Analysis Date: **20-Mar-2023 11:36**
Client ID: Run ID: **FID-20_430526** SeqNo: **7184759** 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	*0.1145*	*0.00500*	*0.1*	*0*	*115*	*70 - 121*				

LCS Sample ID: **LCS-230320** Units: **mg/L** Analysis Date: **20-Mar-2023 10:55**
Client ID: Run ID: **FID-20_430526** SeqNo: **7184757** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9443	0.0500	1	0	94.4	76 - 124				
Surr: 4-Bromofluorobenzene	*0.08567*	*0.00500*	*0.1*	*0*	*85.7*	*52 - 138*				

LCSD Sample ID: **LCSD-230320** Units: **mg/L** Analysis Date: **20-Mar-2023 11:09**
Client ID: Run ID: **FID-20_430526** SeqNo: **7184758** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.151	0.0500	1	0	115	76 - 124	0.9443	19.8	20	
Surr: 4-Bromofluorobenzene	*0.0982*	*0.00500*	*0.1*	*0*	*98.2*	*52 - 138*	*0.08567*	*13.6*	*20*	

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: 191568 (0) **Instrument: ICPMS06** **Method: TOTAL METALS BY E200.8, REV 5.4, 1994**

MBLK Sample ID: **MBLK-191568** Units: **ug/L** Analysis Date: **30-Mar-2023 20:16**
Client ID: Run ID: **ICPMS06_431234** SeqNo: **7206705** PrepDate: **30-Mar-2023** 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-191568** Units: **ug/L** Analysis Date: **30-Mar-2023 19:15**
Client ID: Run ID: **ICPMS06_431234** SeqNo: **7206674** PrepDate: **30-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	5120	500	5000	0	102	85 - 115				
Magnesium	5117	500	5000	0	102	85 - 115				
Potassium	5167	500	5000	0	103	85 - 115				
Sodium	5008	200	5000	0	100	85 - 115				

MS Sample ID: **HS23031461-01MS** Units: **ug/L** Analysis Date: **30-Mar-2023 19:25**
Client ID: Run ID: **ICPMS06_431234** SeqNo: **7206679** PrepDate: **30-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	22970	500	5000	18460	90.1	70 - 130				
Magnesium	9168	500	5000	4019	103	70 - 130				
Potassium	90820	500	5000	86200	92.3	70 - 130				O
Sodium	525100	200	5000	531400	-126	70 - 130				SEO

MS Sample ID: **HS23031133-01MS** Units: **ug/L** Analysis Date: **30-Mar-2023 19:19**
Client ID: Run ID: **ICPMS06_431234** SeqNo: **7206676** PrepDate: **30-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	140000	500	5000	141300	-25.7	70 - 130				SO
Magnesium	27150	500	5000	22970	83.6	70 - 130				O
Potassium	14620	500	5000	9844	95.5	70 - 130				
Sodium	256600	200	5000	259700	-61.9	70 - 130				SEO

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: 191568 (0) **Instrument: ICPMS06** **Method: TOTAL METALS BY E200.8, REV 5.4, 1994**

MSD Sample ID: **HS23031461-01MSD** Units: **ug/L** Analysis Date: **30-Mar-2023 19:27**
Client ID: Run ID: **ICPMS06_431234** SeqNo: **7206680** PrepDate: **30-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	23230	500	5000	18460	95.3	70 - 130	22970	1.12	20	
Magnesium	9272	500	5000	4019	105	70 - 130	9168	1.13	20	
Potassium	90500	500	5000	86200	86.0	70 - 130	90820	0.348	20	O
Sodium	532400	200	5000	531400	20.3	70 - 130	525100	1.39	20	SEO

MSD Sample ID: **HS23031133-01MSD** Units: **ug/L** Analysis Date: **30-Mar-2023 19:21**
Client ID: Run ID: **ICPMS06_431234** SeqNo: **7206677** PrepDate: **30-Mar-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	140100	500	5000	141300	-24.0	70 - 130	140000	0.0612	20	SO
Magnesium	27290	500	5000	22970	86.3	70 - 130	27150	0.507	20	O
Potassium	14650	500	5000	9844	96.1	70 - 130	14620	0.218	20	
Sodium	257200	200	5000	259700	-49.6	70 - 130	256600	0.239	20	SEO

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R430759 (0) **Instrument: VOA7** **Method: LOW LEVEL VOLATILES BY SW8260C**

MBLK Sample ID: **VBLKW-230322** Units: **ug/L** Analysis Date: **22-Mar-2023 21:35**
Client ID: Run ID: **VOA7_430759** SeqNo: **7189946** 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	1.0								
Surr: 1,2-Dichloroethane-d4	*46.42*	*1.0*	*50*	*0*	*92.8*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*43.01*	*1.0*	*50*	*0*	*86.0*	*77 - 113*				
Surr: Dibromofluoromethane	*48.65*	*1.0*	*50*	*0*	*97.3*	*73 - 126*				
Surr: Toluene-d8	*49.04*	*1.0*	*50*	*0*	*98.1*	*81 - 120*				

LCS Sample ID: **VLCSW-230322** Units: **ug/L** Analysis Date: **22-Mar-2023 20:53**
Client ID: Run ID: **VOA7_430759** SeqNo: **7189945** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.05	1.0	20	0	85.3	74 - 120				
Ethylbenzene	18.29	1.0	20	0	91.5	77 - 117				
m,p-Xylene	36.09	2.0	40	0	90.2	77 - 122				
o-Xylene	17.7	1.0	20	0	88.5	75 - 119				
Toluene	17.47	1.0	20	0	87.4	77 - 118				
Xylenes, Total	53.79	1.0	60	0	89.6	75 - 122				
Surr: 1,2-Dichloroethane-d4	*47.92*	*1.0*	*50*	*0*	*95.8*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*46.85*	*1.0*	*50*	*0*	*93.7*	*77 - 113*				
Surr: Dibromofluoromethane	*49.76*	*1.0*	*50*	*0*	*99.5*	*73 - 126*				
Surr: Toluene-d8	*48.43*	*1.0*	*50*	*0*	*96.9*	*81 - 120*				

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R430759 (0) **Instrument: VOA7** **Method: LOW LEVEL VOLATILES BY SW8260C**

MS Sample ID: **HS23031172-01MS** Units: **ug/L** Analysis Date: **22-Mar-2023 22:40**
Client ID: Run ID: **VOA7_430759** SeqNo: **7189949** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.8	1.0	20	0	89.0	70 - 127				
Ethylbenzene	18.68	1.0	20	0	93.4	70 - 124				
m,p-Xylene	36.53	2.0	40	0	91.3	70 - 130				
o-Xylene	17.84	1.0	20	0	89.2	70 - 124				
Toluene	17.79	1.0	20	0	89.0	70 - 123				
Xylenes, Total	54.37	1.0	60	0	90.6	70 - 130				
Surr: 1,2-Dichloroethane-d4	*48.55*	*1.0*	*50*	*0*	*97.1*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*47.34*	*1.0*	*50*	*0*	*94.7*	*77 - 113*				
Surr: Dibromofluoromethane	*49.01*	*1.0*	*50*	*0*	*98.0*	*77 - 123*				
Surr: Toluene-d8	*48.83*	*1.0*	*50*	*0*	*97.7*	*82 - 127*				

MSD Sample ID: **HS23031172-01MSD** Units: **ug/L** Analysis Date: **22-Mar-2023 23:01**
Client ID: Run ID: **VOA7_430759** SeqNo: **7189950** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	16.75	1.0	20	0	83.7	70 - 127	17.8	6.1	20	
Ethylbenzene	17.88	1.0	20	0	89.4	70 - 124	18.68	4.34	20	
m,p-Xylene	35.96	2.0	40	0	89.9	70 - 130	36.53	1.6	20	
o-Xylene	17.63	1.0	20	0	88.1	70 - 124	17.84	1.18	20	
Toluene	17.28	1.0	20	0	86.4	70 - 123	17.79	2.92	20	
Xylenes, Total	53.59	1.0	60	0	89.3	70 - 130	54.37	1.46	20	
Surr: 1,2-Dichloroethane-d4	*48.37*	*1.0*	*50*	*0*	*96.7*	*70 - 126*	*48.55*	*0.384*	*20*	
Surr: 4-Bromofluorobenzene	*46.65*	*1.0*	*50*	*0*	*93.3*	*77 - 113*	*47.34*	*1.47*	*20*	
Surr: Dibromofluoromethane	*49.26*	*1.0*	*50*	*0*	*98.5*	*77 - 123*	*49.01*	*0.524*	*20*	
Surr: Toluene-d8	*48.6*	*1.0*	*50*	*0*	*97.2*	*82 - 127*	*48.83*	*0.474*	*20*	

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R430666 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-03212023** Units: **mg/L** Analysis Date: **21-Mar-2023 12:03**
Client ID: Run ID: **Balance1_430666** SeqNo: **7187892** 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: **LCS-03212023** Units: **mg/L** Analysis Date: **21-Mar-2023 12:03**
Client ID: Run ID: **Balance1_430666** SeqNo: **7187891** 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)	1092	10.0	1000	0	109	85 - 115				

DUP Sample ID: **HS23030993-06DUP** Units: **mg/L** Analysis Date: **21-Mar-2023 12:03**
Client ID: Run ID: **Balance1_430666** SeqNo: **7187877** 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)	378	10.0					376	0.531	20	

DUP Sample ID: **HS23030949-02DUP** Units: **mg/L** Analysis Date: **21-Mar-2023 12:03**
Client ID: Run ID: **Balance1_430666** SeqNo: **7187871** 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)	552	10.0					554	0.362	20	

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R430863 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0, REV 2.1, 1993**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **23-Mar-2023 14:32**
Client ID: Run ID: **ICS-Integrion_430863** SeqNo: **7192753** 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: **23-Mar-2023 14:38**
Client ID: Run ID: **ICS-Integrion_430863** SeqNo: **7192754** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.6	0.500	20	0	98.0	90 - 110				
Sulfate	19.8	0.500	20	0	99.0	90 - 110				

MS Sample ID: **HS23031321-02MS** Units: **mg/L** Analysis Date: **23-Mar-2023 14:50**
Client ID: Run ID: **ICS-Integrion_430863** SeqNo: **7192756** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	14.1	0.500	10	4.505	96.0	80 - 120				
Sulfate	1039	0.500	10	1092	-524	80 - 120				SEO

MS Sample ID: **HS23031282-14MS** Units: **mg/L** Analysis Date: **23-Mar-2023 18:41**
Client ID: Run ID: **ICS-Integrion_430863** SeqNo: **7192786** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	278.3	5.00	100	191.1	87.2	80 - 120				
Sulfate	152.2	5.00	100	57.06	95.2	80 - 120				

MSD Sample ID: **HS23031321-02MSD** Units: **mg/L** Analysis Date: **23-Mar-2023 14:55**
Client ID: Run ID: **ICS-Integrion_430863** SeqNo: **7192757** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	14.12	0.500	10	4.505	96.2	80 - 120	14.1	0.142	20	
Sulfate	1057	0.500	10	1092	-347	80 - 120	1039	1.69	20	SEO

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R430863 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MSD Sample ID: **HS23031282-14MSD** Units: **mg/L** Analysis Date: **23-Mar-2023 18:47**
Client ID: Run ID: **ICS-Integrion_430863** SeqNo: **7192787** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	278.3	5.00	100	191.1	87.2	80 - 120	278.3	0.00359	20	
Sulfate	152.4	5.00	100	57.06	95.3	80 - 120	152.2	0.0991	20	

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: HS23031123

QC BATCH REPORT

Batch ID: R431477 (0) **Instrument: Skalar 03** **Method: ALKALINITY BY SM 2320B-2011**

MBLK Sample ID: **MBLK-03302023** Units: **mg/L** Analysis Date: **30-Mar-2023 19:14**
Client ID: Run ID: **Skalar 03_431477** SeqNo: **7207488** 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-03302023** Units: **mg/L** Analysis Date: **30-Mar-2023 19:21**
Client ID: Run ID: **Skalar 03_431477** SeqNo: **7207489** 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)	939.6	5.00	1000	0	94.0	85 - 115				
Alkalinity, Total (As CaCO3)	956.6	5.00	1000	0	95.7	85 - 115				

LCSD Sample ID: **LCSD-03302023** Units: **mg/L** Analysis Date: **30-Mar-2023 19:27**
Client ID: Run ID: **Skalar 03_431477** SeqNo: **7207490** 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)	929.4	5.00	1000	0	92.9	85 - 115	939.6	1.09	20	
Alkalinity, Total (As CaCO3)	945.9	5.00	1000	0	94.6	85 - 115	956.6	1.12	20	

DUP Sample ID: **HS23031797-02DUP** Units: **mg/L** Analysis Date: **30-Mar-2023 19:38**
Client ID: Run ID: **Skalar 03_431477** SeqNo: **7207492** 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)	122.7	5.00					131.7	7.08	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20	
Alkalinity, Total (As CaCO3)	122.7	5.00					131.7	7.08	20	

The following samples were analyzed in this batch: HS23031123-01

Client: PDC Energy
Project: Postle IC 09-022HC
WorkOrder: **HS23031123**

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 Quantitaion 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 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

Sample Receipt Checklist

Work Order ID: HS23031123 **Date/Time Received:** **18-Mar-2023 09:53**

Client Name: PDC Energy 80203 **Received by:** **Paresh M. Giga**

Completed By:	/S/ Nilesh D. Ranchod	20-Mar-2023 13:15	**Reviewed by:**	/S/ Tyler Monroe	22-Mar-2023 09:44
	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):	1.5C/1.0C UC/C	IR31
Cooler(s)/Kit(s):	50497	
Date/Time sample(s) sent to storage:	03/18/23 13:00	

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 #

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

	Postle IC 09-022HC	SAMPLER	Jeff Braden
PROJECT NAME	~~Phelps 8-18~~	FACILITY ID	123-47381
PROJECT No.	09C2073360	EDD FORMAT	COGCC EDD, LTE
	PDCE Bradenhead Sampling	PURCHASE ORDER	N/A
COMPANY NAME	PDC Energy	BILL TO COMPANY	PDC Energy
SEND REPORT TO	Jenifer Hakkarinen	INVOICE ATTN TO	Jenifer Hakkarinen
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	303.860.5815
FAX		FAX	
E-MAIL	jenifer.hakkarinen@pdce.com jessica.johannsen@pdce.com jbraden@ensolum.com	E-MAIL	jenifer.hakkarinen@pdce.com

DATE 3/17/23

TURNAROUND Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	Dissolved Methane, Ethane, Propane (RSK 175)	BTEX & TPH GRO (SW8260_25)	TPH DRO (SW8015M)	Alkalinity, Carbonate, Bicarbonate, Total (SM2320B)	Total Cations - see comments (EPA200.7/208)	Total Anions - see comments (EPA 300.0)	Total Dissolved Solids (SM2540C)
	Postle IC 09-022HC	W	3/17/23	0930	11	1,2		X	X	X	X	X	X	X

HS23031123
PDC Energy
Postle IC 09-022HC

*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:

Calcium, Chloride, Magnesium, Potassium, Sodium, Sulfate
Samples analyzed per
COGCC Bradenhead Sampling Program

50497 VOCs 1.5 +31 Cl- 05

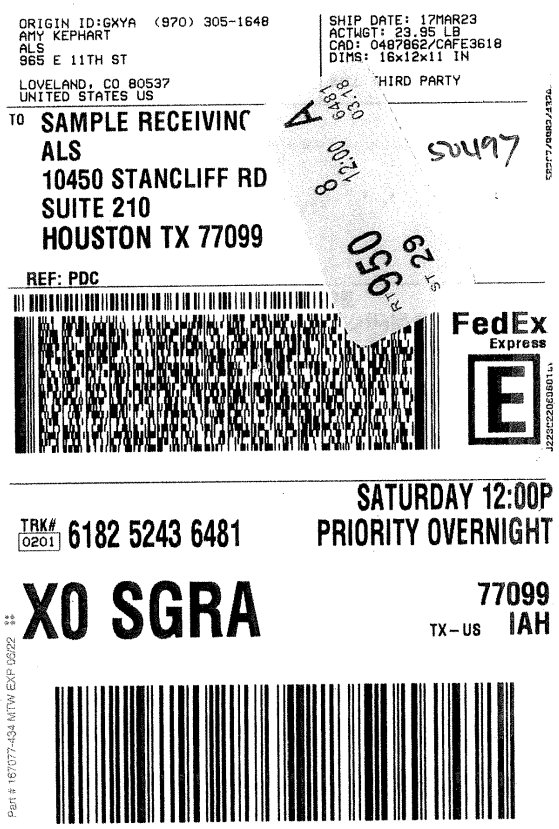
QC PACKAGE (check below)

- LEVEL II (Standard QC)
- LEVEL III (Std QC + forms)
- LEVEL IV (Std QC + forms + raw data)

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Jeff Braden	3/17/23	1200
RECEIVED BY		Amy Kephart	3/17/23	1300
RELINQUISHED BY		Amy Kephart	3/17/23	1530
RECEIVED BY	X	P.G.C.A.	3/18/23	09:53
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

50497 MAR 18 2023


ORIGIN ID:GXYA (970) 305-1648
AMY KEPHART
ALS
965 E 11TH ST

LOVELAND, CO 80537
UNITED STATES US

SHIP DATE: 17MAR23
ACTWGT: 23.95 LB
CAD: 0487862/CAFE3618
DIMS: 16x12x11 IN

THIRD PARTY

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

50497

REF: PDC

FedEx
Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 6182 5243 6481

XO SGRA

77099
TX-US IAH

Part # 167077-434 NITW EXP 03/22