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December 22, 2022

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

Work Order: **HS22120626**

Laboratory Results for: **Postle IC 09-379HC**

Dear Jenifer Hakkarinen,

ALS Environmental received 1 sample(s) on Dec 09, 2022 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 09-379HC  
**Work Order:** HS22120626

**SAMPLE SUMMARY**

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Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22120626-01	Postle IC 09-379HC	Water		07-Dec-2022 10:20	09-Dec-2022 09:15	<input type="checkbox"/>

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**Work Order:** HS22120626

**CASE NARRATIVE**

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**GC Semivolatiles by Method RSK-175**

**Batch ID: R424044**

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

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**GC Semivolatiles by Method SW8015M**

**Batch ID: 187300**

**Sample ID: Postle IC 09-379HC (HS22120626-01)**

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

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**GC Volatiles by Method SW8015**

**Batch ID: R423904**

**Sample ID: Postle IC 09-379HC (HS22120626-01)**

- Dilution required due to foamy matrix.

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**GCMS Volatiles by Method SW8260**

**Batch ID: R424374**

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

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**Metals by Method E200.8**

**Batch ID: 187661**

**Sample ID: HS22120950-01MS, HS22120950-03MS**

- MS and MSD are for an unrelated sample

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**Wet Chemistry by Method E300**

**Batch ID: R424508**

**Sample ID: HS22120878-01MS, HS22120881-01MS**

- MS and MSD are for an unrelated sample

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**WetChemistry by Method SM2320B**

**Batch ID: R424577**

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

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**WetChemistry by Method M2540C**

**Batch ID: R424111**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
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Client: PDC Energy  
 Project: Postle IC 09-379HC  
 Sample ID: Postle IC 09-379HC  
 Collection Date: 07-Dec-2022 10:20

**ANALYTICAL REPORT**

WorkOrder:HS22120626  
 Lab ID:HS22120626-01  
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>LOW LEVEL VOLATILES BY SW8260C</b>		<b>Method:SW8260</b>		Analyst: FT		
Benzene	150		50	ug/L	50	20-Dec-2022 10:19
Ethylbenzene	ND		50	ug/L	50	20-Dec-2022 10:19
m,p-Xylene	190		100	ug/L	50	20-Dec-2022 10:19
o-Xylene	110		50	ug/L	50	20-Dec-2022 10:19
Toluene	230		50	ug/L	50	20-Dec-2022 10:19
Xylenes, Total	300		50	ug/L	50	20-Dec-2022 10:19
Surr: 1,2-Dichloroethane-d4	114		70-126	%REC	50	20-Dec-2022 10:19
Surr: 4-Bromofluorobenzene	98.8		77-113	%REC	50	20-Dec-2022 10:19
Surr: Dibromofluoromethane	109		77-123	%REC	50	20-Dec-2022 10:19
Surr: Toluene-d8	103		82-127	%REC	50	20-Dec-2022 10:19
<b>GASOLINE RANGE ORGANICS BY SW8015C</b>		<b>Method:SW8015</b>		Analyst: FT		
Gasoline Range Organics	ND		2.50	mg/L	50	13-Dec-2022 14:56
Surr: 4-Bromofluorobenzene	102		70-123	%REC	50	13-Dec-2022 14:56
<b>DISSOLVED GASES BY RSK-175</b>		<b>Method:RSK-175</b>		Analyst: SAM		
Ethane	244		10.0	ug/L	10	14-Dec-2022 11:37
Methane	207		5.00	ug/L	10	14-Dec-2022 11:37
Propane	264		10.0	ug/L	10	14-Dec-2022 11:37
<b>TPH DRO/ORO BY SW8015C</b>		<b>Method:SW8015M</b>		Prep:SW3511 / 13-Dec-2022		Analyst: PPM
TPH (Diesel Range)	8.1		5.0	mg/L	100	16-Dec-2022 06:16
Surr: 2-Fluorobiphenyl	0	JS	60-135	%REC	100	16-Dec-2022 06:16
<b>TOTAL METALS BY E200.8, REV 5.4, 1994</b>		<b>Method:E200.8</b>		Prep:E200.8 / 21-Dec-2022		Analyst: JC
Calcium	160		25.0	mg/L	5	21-Dec-2022 22:45
Magnesium	ND		5.00	mg/L	1	22-Dec-2022 12:22
Potassium	7,040		25.0	mg/L	5	21-Dec-2022 22:45
Sodium	2,730		10.0	mg/L	5	21-Dec-2022 22:45
<b>ANIONS BY E300.0, REV 2.1, 1993</b>		<b>Method:E300</b>		Analyst: TH		
Chloride	2,850		25.0	mg/L	50	21-Dec-2022 11:48
Sulfate	676		25.0	mg/L	50	21-Dec-2022 11:48
<b>TOTAL DISSOLVED SOLIDS BY SM2540C -2011</b>		<b>Method:M2540C</b>		Analyst: CWG		
Total Dissolved Solids (Residue, Filterable)	19,800		10.0	mg/L	1	14-Dec-2022 15:47
<b>ALKALINITY BY SM 2320B-2011</b>		<b>Method:SM2320B</b>		Analyst: JAC		
Alkalinity, Bicarbonate (As CaCO3)	ND		5.00	mg/L	1	21-Dec-2022 22:06
Alkalinity, Carbonate (As CaCO3)	ND		5.00	mg/L	1	21-Dec-2022 22:06
Alkalinity, Total (As CaCO3)	ND		5.00	mg/L	1	21-Dec-2022 22:06

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

**Weight / Prep Log**

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

<b>Batch ID:</b> 187300	<b>Start Date:</b> 13 Dec 2022 08:09	<b>End Date:</b> 13 Dec 2022 13:00
<b>Method:</b> SW3511	<b>Prep Code:</b> 3511_DRO	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22120626-01		32.98 (mL)	2 (mL)	0.06064	40 mL Amber

<b>Batch ID:</b> 187661	<b>Start Date:</b> 21 Dec 2022 09:00	<b>End Date:</b> 21 Dec 2022 15:00
<b>Method:</b> TOTAL METALS PREP BY E200.8, REV 5.4, 1994	<b>Prep Code:</b> 200.8PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22120626-01		1 (mL)	10 (mL)	10	250 mL plastic, HNO3 to pH <2

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**DATES REPORT**

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
<b>Batch ID:</b> 187300 ( 0 )		<b>Test Name :</b> TPH DRO/ORO BY SW8015C			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20		13 Dec 2022 08:09	16 Dec 2022 06:16	100
<b>Batch ID:</b> 187661 ( 0 )		<b>Test Name :</b> TOTAL METALS BY E200.8, REV 5.4, 1994			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20		21 Dec 2022 09:00	22 Dec 2022 12:22	1
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20		21 Dec 2022 09:00	21 Dec 2022 22:45	5
<b>Batch ID:</b> R423904 ( 0 )		<b>Test Name :</b> GASOLINE RANGE ORGANICS BY SW8015C			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20			13 Dec 2022 14:56	50
<b>Batch ID:</b> R424044 ( 0 )		<b>Test Name :</b> DISSOLVED GASES BY RSK-175			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20			14 Dec 2022 11:37	10
<b>Batch ID:</b> R424111 ( 0 )		<b>Test Name :</b> TOTAL DISSOLVED SOLIDS BY SM2540C-2011			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20			14 Dec 2022 15:47	1
<b>Batch ID:</b> R424374 ( 0 )		<b>Test Name :</b> LOW LEVEL VOLATILES BY SW8260C			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20			20 Dec 2022 10:19	50
<b>Batch ID:</b> R424508 ( 0 )		<b>Test Name :</b> ANIONS BY E300.0, REV 2.1, 1993			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20			21 Dec 2022 11:48	50
<b>Batch ID:</b> R424577 ( 0 )		<b>Test Name :</b> ALKALINITY BY SM 2320B-2011			<b>Matrix:</b> Water	
HS22120626-01	Postle IC 09-379HC	07 Dec 2022 10:20			21 Dec 2022 22:06	1

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

<b>Batch ID:</b> 187300 ( 0 )	<b>Instrument:</b> FID-16	<b>Method:</b> TPH DRO/ORO BY SW8015C
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<b>MBLK</b>	Sample ID: <b>MBLK-187300</b>	Units: <b>mg/L</b>	Analysis Date: <b>16-Dec-2022 08:13</b>						
Client ID:	Run ID: <b>FID-16_424411</b>	SeqNo: <b>7042068</b>	PrepDate: <b>13-Dec-2022</b>	DF: <b>1</b>					
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							
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.03914</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>65.2</i>	<i>60 - 135</i>			

<b>LCS</b>	Sample ID: <b>LCS-187300</b>	Units: <b>mg/L</b>	Analysis Date: <b>16-Dec-2022 08:42</b>						
Client ID:	Run ID: <b>FID-16_424411</b>	SeqNo: <b>7042069</b>	PrepDate: <b>13-Dec-2022</b>	DF: <b>1</b>					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.5487	0.050	0.6	0	91.4	70 - 130			
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.06162</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>103</i>	<i>60 - 135</i>			

<b>LCSD</b>	Sample ID: <b>LCSD-187300</b>	Units: <b>mg/L</b>	Analysis Date: <b>16-Dec-2022 09:11</b>						
Client ID:	Run ID: <b>FID-16_424411</b>	SeqNo: <b>7042070</b>	PrepDate: <b>13-Dec-2022</b>	DF: <b>1</b>					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.5657	0.050	0.6	0	94.3	70 - 130	0.5487	3.06	20
<i>Surr: 2-Fluorobiphenyl</i>	<i>0.06202</i>	<i>0.0050</i>	<i>0.06</i>	<i>0</i>	<i>103</i>	<i>60 - 135</i>	<i>0.06162</i>	<i>0.647</i>	<i>20</i>

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

**Batch ID:** R424044 ( 0 )      **Instrument:** FID-4      **Method:** DISSOLVED GASES BY RSK-175

<b>MBLK</b>		Sample ID: <b>MBLK-221214</b>		Units: <b>ug/L</b>		Analysis Date: <b>14-Dec-2022 10:19</b>			
Client ID:		Run ID: <b>FID-4_424044</b>		SeqNo: <b>7033239</b>		PrepDate:		DF: <b>1</b>	
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							

<b>LCS</b>		Sample ID: <b>LCS-221214</b>		Units: <b>ug/L</b>		Analysis Date: <b>14-Dec-2022 10:35</b>			
Client ID:		Run ID: <b>FID-4_424044</b>		SeqNo: <b>7033240</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	17.39	1.00	18.04	0	96.4	75 - 125			
Methane	8.472	0.500	9.647	0	87.8	75 - 125			
Propane	27.69	1.00	26.46	0	105	75 - 125			

<b>LCSD</b>		Sample ID: <b>LCSD-221214</b>		Units: <b>ug/L</b>		Analysis Date: <b>14-Dec-2022 10:53</b>			
Client ID:		Run ID: <b>FID-4_424044</b>		SeqNo: <b>7033241</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Ethane	18.33	1.00	18.04	0	102	75 - 125	17.39	5.25	30
Methane	8.823	0.500	9.647	0	91.5	75 - 125	8.472	4.06	30
Propane	27.35	1.00	26.46	0	103	75 - 125	27.69	1.24	30

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

<b>Batch ID:</b> R423904 ( 0 )		<b>Instrument:</b> FID-20		<b>Method:</b> GASOLINE RANGE ORGANICS BY SW8015C						
<b>MBLK</b>	Sample ID: <b>MBLK-221213</b>	Units: <b>mg/L</b>			Analysis Date: <b>13-Dec-2022 11:47</b>					
Client ID:	Run ID: <b>FID-20_423904</b>	SeqNo: <b>7030500</b>		PrepDate:			DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	

Gasoline Range Organics	ND	0.0500							
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.09405</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>94.0</i>	<i>70 - 121</i>			

<b>LCS</b>	Sample ID: <b>LCS-221213</b>	Units: <b>mg/L</b>			Analysis Date: <b>13-Dec-2022 11:19</b>				
Client ID:	Run ID: <b>FID-20_423904</b>	SeqNo: <b>7030498</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Gasoline Range Organics	0.8341	0.0500	1	0	83.4	76 - 124			
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.1033</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>103</i>	<i>52 - 138</i>			

<b>LCSD</b>	Sample ID: <b>LCSD-221213</b>	Units: <b>mg/L</b>			Analysis Date: <b>13-Dec-2022 11:33</b>				
Client ID:	Run ID: <b>FID-20_423904</b>	SeqNo: <b>7030499</b>		PrepDate:			DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Gasoline Range Organics	0.8629	0.0500	1	0	86.3	76 - 124	0.8341	3.39	20
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.1058</i>	<i>0.00500</i>	<i>0.1</i>	<i>0</i>	<i>106</i>	<i>52 - 138</i>	<i>0.1033</i>	<i>2.4</i>	<i>20</i>

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

**Batch ID:** 187661 ( 0 )      **Instrument:** ICPMS06      **Method:** TOTAL METALS BY E200.8, REV 5.4, 1994

<b>MBLK</b>		Sample ID: <b>MBLK-187661</b>		Units: <b>ug/L</b>		Analysis Date: <b>22-Dec-2022 12:12</b>			
Client ID:		Run ID: <b>ICPMS06_424622</b>		SeqNo: <b>7046879</b>		PrepDate: <b>21-Dec-2022</b>		DF: <b>1</b>	
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							

<b>LCS</b>		Sample ID: <b>LCS-187661</b>		Units: <b>ug/L</b>		Analysis Date: <b>21-Dec-2022 22:14</b>			
Client ID:		Run ID: <b>ICPMS06_424482</b>		SeqNo: <b>7046132</b>		PrepDate: <b>21-Dec-2022</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	4993	500	5000	0	99.9	85 - 115			
Magnesium	5096	500	5000	0	102	85 - 115			
Potassium	5087	500	5000	0	102	85 - 115			
Sodium	5028	200	5000	0	101	85 - 115			

<b>MS</b>		Sample ID: <b>HS22120950-03MS</b>		Units: <b>ug/L</b>		Analysis Date: <b>21-Dec-2022 22:29</b>			
Client ID:		Run ID: <b>ICPMS06_424482</b>		SeqNo: <b>7046139</b>		PrepDate: <b>21-Dec-2022</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	160200	500	5000	171600	-227	70 - 130			SO
Magnesium	15880	500	5000	12180	74.2	70 - 130			
Potassium	10420	500	5000	6075	86.9	70 - 130			
Sodium	55660	200	5000	56600	-18.9	70 - 130			SO

<b>MS</b>		Sample ID: <b>HS22120950-01MS</b>		Units: <b>ug/L</b>		Analysis Date: <b>21-Dec-2022 22:24</b>			
Client ID:		Run ID: <b>ICPMS06_424482</b>		SeqNo: <b>7046136</b>		PrepDate: <b>21-Dec-2022</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	142900	500	5000	133900	180	70 - 130			SO
Magnesium	57120	500	5000	50530	132	70 - 130			SO
Potassium	15300	500	5000	9813	110	70 - 130			
Sodium	79690	200	5000	71960	155	70 - 130			SO

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

**Batch ID:** 187661 ( 0 )      **Instrument:** ICPMS06      **Method:** TOTAL METALS BY E200.8, REV 5.4, 1994

<b>MSD</b>		Sample ID: <b>HS22120950-03MSD</b>			Units: <b>ug/L</b>		Analysis Date: <b>21-Dec-2022 22:31</b>			
Client ID:		Run ID: <b>ICPMS06_424482</b>			SeqNo: <b>7046140</b>		PrepDate: <b>21-Dec-2022</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	158900	500	5000	171600	-254	70 - 130	160200	0.857	20	SO
Magnesium	15960	500	5000	12180	75.6	70 - 130	15880	0.462	20	
Potassium	10540	500	5000	6075	89.4	70 - 130	10420	1.18	20	
Sodium	56150	200	5000	56600	-9.02	70 - 130	55660	0.884	20	SO

<b>MSD</b>		Sample ID: <b>HS22120950-01MSD</b>			Units: <b>ug/L</b>		Analysis Date: <b>21-Dec-2022 22:26</b>			
Client ID:		Run ID: <b>ICPMS06_424482</b>			SeqNo: <b>7046137</b>		PrepDate: <b>21-Dec-2022</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	152200	500	5000	133900	366	70 - 130	142900	6.3	20	SO
Magnesium	61190	500	5000	50530	213	70 - 130	57120	6.89	20	SO
Potassium	16260	500	5000	9813	129	70 - 130	15300	6.08	20	
Sodium	85170	200	5000	71960	264	70 - 130	79690	6.65	20	SO

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

**Batch ID:** R424374 ( 0 )      **Instrument:** VOA11      **Method:** LOW LEVEL VOLATILES BY SW8260C

<b>MBLK</b>		Sample ID: <b>VBLKW-221220</b>		Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2022 09:16</b>			
Client ID:		Run ID: <b>VOA11_424374</b>		SeqNo: <b>7041344</b>		PrepDate:		DF: <b>1</b>	
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							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>54.87</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>47.36</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>94.7</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>53.88</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>108</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>52.02</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>81 - 120</i>			

<b>LCS</b>		Sample ID: <b>VLCSW-221220</b>		Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2022 08:34</b>			
Client ID:		Run ID: <b>VOA11_424374</b>		SeqNo: <b>7041343</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.38	1.0	20	0	102	74 - 120			
Ethylbenzene	19.52	1.0	20	0	97.6	77 - 117			
m,p-Xylene	38.69	2.0	40	0	96.7	77 - 122			
o-Xylene	19.5	1.0	20	0	97.5	75 - 119			
Toluene	19.62	1.0	20	0	98.1	77 - 118			
Xylenes, Total	58.19	1.0	60	0	97.0	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>54.89</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>70 - 123</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.07</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>96.1</i>	<i>77 - 113</i>			
<i>Surr: Dibromofluoromethane</i>	<i>54.01</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>108</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>51.37</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>81 - 120</i>			

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

**Batch ID:** R424374 ( 0 )      **Instrument:** VOA11      **Method:** LOW LEVEL VOLATILES BY SW8260C

<b>MS</b>		Sample ID: <b>HS22120622-01MS</b>			Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2022 11:01</b>			
Client ID:		Run ID: <b>VOA11_424374</b>			SeqNo: <b>7041349</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.26	1.0	20	0	91.3	70 - 127				
Ethylbenzene	17.66	1.0	20	0	88.3	70 - 124				
m,p-Xylene	34.17	2.0	40	0	85.4	70 - 130				
o-Xylene	17.23	1.0	20	0	86.2	70 - 124				
Toluene	17.73	1.0	20	0	88.6	70 - 123				
Xylenes, Total	51.4	1.0	60	0	85.7	70 - 130				
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>55.15</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>70 - 126</i>				
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.77</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>97.5</i>	<i>77 - 113</i>				
<i>Surr: Dibromofluoromethane</i>	<i>54.2</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>108</i>	<i>77 - 123</i>				
<i>Surr: Toluene-d8</i>	<i>51.21</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>82 - 127</i>				

<b>MSD</b>		Sample ID: <b>HS22120622-01MSD</b>			Units: <b>ug/L</b>		Analysis Date: <b>20-Dec-2022 11:22</b>			
Client ID:		Run ID: <b>VOA11_424374</b>			SeqNo: <b>7041350</b>		PrepDate:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.24	1.0	20	0	91.2	70 - 127	18.26	0.146	20	
Ethylbenzene	17.69	1.0	20	0	88.4	70 - 124	17.66	0.137	20	
m,p-Xylene	34.85	2.0	40	0	87.1	70 - 130	34.17	1.96	20	
o-Xylene	17.01	1.0	20	0	85.1	70 - 124	17.23	1.29	20	
Toluene	17.96	1.0	20	0	89.8	70 - 123	17.73	1.28	20	
Xylenes, Total	51.86	1.0	60	0	86.4	70 - 130	51.4	0.88	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>55.95</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>112</i>	<i>70 - 126</i>	<i>55.15</i>	<i>1.44</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.19</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>96.4</i>	<i>77 - 113</i>	<i>48.77</i>	<i>1.21</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>54.69</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>109</i>	<i>77 - 123</i>	<i>54.2</i>	<i>0.889</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>52.37</i>	<i>1.0</i>	<i>50</i>	<i>0</i>	<i>105</i>	<i>82 - 127</i>	<i>51.21</i>	<i>2.25</i>	<i>20</i>	

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

**Batch ID:** R424111 ( 0 )      **Instrument:** Balance1      **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

<b>MBLK</b>	Sample ID: <b>WBLK-121422</b>	Units: <b>mg/L</b>			Analysis Date: <b>14-Dec-2022 15:47</b>				
Client ID:	Run ID: <b>Balance1_424111</b>	SeqNo: <b>7034811</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      ND      10.0

<b>LCS</b>	Sample ID: <b>WLCS-121422</b>	Units: <b>mg/L</b>			Analysis Date: <b>14-Dec-2022 15:47</b>				
Client ID:	Run ID: <b>Balance1_424111</b>	SeqNo: <b>7034812</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      1050      10.0      1000      0      105      85 - 115

<b>DUP</b>	Sample ID: <b>HS22120540-02DUP</b>	Units: <b>mg/L</b>			Analysis Date: <b>14-Dec-2022 15:47</b>				
Client ID:	Run ID: <b>Balance1_424111</b>	SeqNo: <b>7034800</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      1060      10.0                     1068      0.752      5

<b>DUP</b>	Sample ID: <b>HS22120468-01DUP</b>	Units: <b>mg/L</b>			Analysis Date: <b>14-Dec-2022 15:47</b>				
Client ID:	Run ID: <b>Balance1_424111</b>	SeqNo: <b>7034791</b>		PrepDate:		DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Total Dissolved Solids (Residue, Filterable)      5460      10.0                     5500      0.73      5

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

Batch ID: R424508 ( 0 )		Instrument: ICS-Integrion		Method: ANIONS BY E300.0, REV 2.1, 1993						
<b>MBLK</b>	Sample ID: <b>MBLK</b>	Units: <b>mg/L</b>			Analysis Date: <b>21-Dec-2022 11:06</b>					
Client ID:		Run ID: <b>ICS-Integrion_424508</b>		SeqNo: <b>7044454</b>		PrepDate:		DF: <b>1</b>		
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								
<b>LCS</b>	Sample ID: <b>LCS</b>	Units: <b>mg/L</b>			Analysis Date: <b>21-Dec-2022 11:12</b>					
Client ID:		Run ID: <b>ICS-Integrion_424508</b>		SeqNo: <b>7044455</b>		PrepDate:		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	19.51	0.500	20	0	97.6	90 - 110				
Sulfate	19.64	0.500	20	0	98.2	90 - 110				
<b>MS</b>	Sample ID: <b>HS22120881-01MS</b>	Units: <b>mg/L</b>			Analysis Date: <b>21-Dec-2022 11:38</b>					
Client ID:		Run ID: <b>ICS-Integrion_424508</b>		SeqNo: <b>7044460</b>		PrepDate:		DF: <b>5</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	156.6	2.50	50	113.4	86.5	80 - 120				
Sulfate	249.5	2.50	50	213.3	72.3	80 - 120			SO	
<b>MS</b>	Sample ID: <b>HS22120878-01MS</b>	Units: <b>mg/L</b>			Analysis Date: <b>21-Dec-2022 11:22</b>					
Client ID:		Run ID: <b>ICS-Integrion_424508</b>		SeqNo: <b>7044457</b>		PrepDate:		DF: <b>5</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	168.2	2.50	50	124.9	86.6	80 - 120				
Sulfate	255.9	2.50	50	219.1	73.5	80 - 120			SO	
<b>MSD</b>	Sample ID: <b>HS22120881-01MSD</b>	Units: <b>mg/L</b>			Analysis Date: <b>21-Dec-2022 11:43</b>					
Client ID:		Run ID: <b>ICS-Integrion_424508</b>		SeqNo: <b>7044461</b>		PrepDate:		DF: <b>5</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual	
Chloride	156.7	2.50	50	113.4	86.7	80 - 120	156.6	0.0638	20	
Sulfate	250.8	2.50	50	213.3	74.9	80 - 120	249.5	0.518	20 SO	

Client: PDC Energy  
Project: Postle IC 09-379HC  
WorkOrder: HS22120626

QC BATCH REPORT

Batch ID: R424508 ( 0 )      Instrument: ICS-Integrion      Method: ANIONS BY E300.0, REV 2.1, 1993

MSD	Sample ID: HS22120878-01MSD	Units: mg/L			Analysis Date: 21-Dec-2022 11:28					
Client ID:	Run ID: ICS-Integrion_424508	SeqNo: 7044458	PrepDate:	DF: 5						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	169	2.50	50	124.9	88.4	80 - 120	168.2	0.516	20	
Sulfate	257.6	2.50	50	219.1	76.9	80 - 120	255.9	0.67	20	SO

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QC BATCH REPORT**

<b>Batch ID:</b> R424577 ( 0 )	<b>Instrument:</b> ManTech01	<b>Method:</b> ALKALINITY BY SM 2320B-2011
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<b>MBLK</b>	Sample ID: <b>WBLKW1-122122</b>	Units: <b>mg/L</b>	Analysis Date: <b>21-Dec-2022 20:14</b>							
Client ID:	Run ID: <b>ManTech01_424577</b>	SeqNo: <b>7045860</b>	PrepDate: DF: <b>1</b>							
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								

<b>LCS</b>	Sample ID: <b>LCS1-122122</b>	Units: <b>mg/L</b>	Analysis Date: <b>21-Dec-2022 20:24</b>							
Client ID:	Run ID: <b>ManTech01_424577</b>	SeqNo: <b>7045861</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	992.5	5.00	1000	0	99.2	85 - 115				
Alkalinity, Total (As CaCO3)	1020	5.00	1000	0	102	85 - 115				

<b>LCSD</b>	Sample ID: <b>LCSD1-122122</b>	Units: <b>mg/L</b>	Analysis Date: <b>21-Dec-2022 20:32</b>							
Client ID:	Run ID: <b>ManTech01_424577</b>	SeqNo: <b>7045862</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (As CaCO3)	986.9	5.00	1000	0	98.7	85 - 115	992.5	0.558	20	
Alkalinity, Total (As CaCO3)	1024	5.00	1000	0	102	85 - 115	1020	0.349	20	

<b>DUP</b>	Sample ID: <b>HS22120468-01DUP</b>	Units: <b>mg/L</b>	Analysis Date: <b>21-Dec-2022 20:46</b>							
Client ID:	Run ID: <b>ManTech01_424577</b>	SeqNo: <b>7045864</b>	PrepDate: DF: <b>1</b>							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	82.83	5.00					84.38	1.85	20	
Alkalinity, Carbonate (As CaCO3)	ND	5.00					0	0	20	
Alkalinity, Total (As CaCO3)	82.83	5.00					84.38	1.85	20	

The following samples were analyzed in this batch: HS22120626-01

**Client:** PDC Energy  
**Project:** Postle IC 09-379HC  
**WorkOrder:** HS22120626

**QUALIFIERS,  
ACRONYMS, UNITS**

<b>Qualifier</b>	<b>Description</b>
*	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

<b>Acronym</b>	<b>Description</b>
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

<b>Unit Reported</b>	<b>Description</b>
mg/L	Milligrams per Liter

**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

<b>Agency</b>	<b>Number</b>	<b>Expire Date</b>
Arkansas	22-041-0	27-Mar-2023
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	624-2022	31-Dec-2022
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: HS22120626

Date/Time Received: 09-Dec-2022 09:15

Client Name: PDC Energy 80203

Received by: Paresh M. Giga

Completed By: /S/ Nelson D. Dusara	10-Dec-2022 11:18	Reviewed by: /S/ Tyler Monroe	13-Dec-2022 08:19
eSignature	Date/Time	eSignature	Date/Time

Matrices: WATER

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  COC IDs:n/a
- 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):	2.4/1.9 C UC/C	IR 31
Cooler(s)/Kit(s):	Red	
Date/Time sample(s) sent to storage:	DEC/10/2022 06:50	
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:	Si Ma	

Login Notes: SX # Postl IC 09-379HC Metals pH>2(14) Preserved with 1.0ml HNO3  
 On 12/10/2022 at 06:50 by Sima  
 Acid Lot # 320070308  
 After Preserved pH (14)

Client Contacted: \_\_\_\_\_ Date Contacted: \_\_\_\_\_ Person Contacted: \_\_\_\_\_

Contacted By: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments:

Corrective Action:



**ALS Environmental**  
 965 E 11th St, Loveland, CO 80537  
 Phone: 970-305-1648

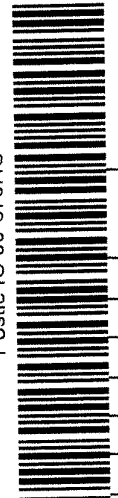
**Chain-of-Custody**

Form 202r8

WORKORDER #	
PAGE	1 of 1

PROJECT NAME	Postle IC 09-379HC	SAMPLER	Jeff Braden	DATE	12/8/2022	TURNAROUND	Standard	DISPOSAL	By Lab or Return to Client
PROJECT No.	09A2073232	FACILITY ID	123-46042	Dissolved Methane, Ethane, Propane BTEX & TPH GRO TPH DRO Alkalinity, Carbonate, Bicarbonate, Total EPA200.7/2.0.8 Total Cations - see comments Total Anions - see comments Total Dissolved Solids					
	PDCE Bradenhead Sampling	EDD FORMAT	COGCC EDD, LTE						
COMPANY NAME	PDC Energy	PURCHASE ORDER	N/A						
SEND REPORT TO	Jenifer Hakkarinen	BILL TO COMPANY	PDC Energy						
ADDRESS	1775 Sherman Street, Suite 3000	INVOICE ATTN TO	Jenifer Hakkarinen						
CITY / STATE / ZIP	Denver, Colorado 80203	ADDRESS	1775 Sherman Street, Suite 3000						
PHONE	303.860.5815	CITY / STATE / ZIP	Denver, Colorado 80203						
FAX		PHONE	303.860.5815						
		FAX							
	jenifer.hakkarinen@pdce.com jessica.johannsen@pdce.com jbraden@ensolum.com	E-MAIL	jenifer.hakkarinen@pdce.com						

**HS22120626**  
 PDC Energy  
 Postle IC 09-379HC



\*Time Zone (Circle): EST CST  PST 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		<input type="checkbox"/> LEVEL II (Standard QC)
Samples analyzed per COGCC Bradenhead Sampling Program		<input type="checkbox"/> LEVEL III (Std QC + forms)
		<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Jeff Braden</i>	Jeff Braden	12/9/22	1040
RECEIVED BY	<i>Amy Kelpart</i>	Amy Kelpart	12/9/22	1040
RELINQUISHED BY	<i>Amy Kelpart</i>	Amy Kelpart	12/9/22	1545
RECEIVED BY	<i>P. G. CCA.</i>	P. G. CCA.	12/9/22	0915
RELINQUISHED BY				
RECEIVED BY				

*Res VCC.  
 2.40  
 #31, 12/25/22*

TRK# 6182 5243 3953  
0201

FRI - 09 DEC 10:30A  
PRIORITY OVERNIGHT

**XA SGRA**

77099  
TX-US IAH

