



Wednesday, October 27, 2021

Max Trehus  
Great Western Operating Company, LLC  
4093 Specialty Place, Unit B  
Longmont, CO 80504

Re: ALS Workorder: 2110021  
Project Name: Wilson IC 03-179HNX  
Project Number:

Dear Mr. Trehus:

Two water samples were received from Great Western Operating Company, LLC, on 10/1/2021. The samples were scheduled for the following analyses:

- Dissolved Gasses
- GC/MS Volatiles
- Inorganics
- Metals
- Total Extractable Petroleum Hydrocarbons (Diesel)
- Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental  
Katie M. O'Brien  
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.



## 2110021

### **GC/MS Volatiles:**

The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

### **Dissolved Gasses:**

The sample was prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

### **GRO:**

The sample was analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All acceptance criteria were met.

### **DRO:**

The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

### **Metals:**

The samples were analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by Trace ICP followed method 200.7 and the current revision of SOP 834.

Sample 2110021-2 was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.



**Inorganics:**

The sample was analyzed following Standard Method procedures for the current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
TDS	SM2540C	1101
Chloride	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

# ALS -- Fort Collins

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 2110021

**Client Name:** Great Western Operating Company, LLC

**Client Project Name:** Wilson IC 03-179HNX

**Client Project Number:**

**Client PO Number:**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
03-179HNX-A	2110021-1		WATER	30-Sep-21	15:35
03-179HNX-B	2110021-2		WATER	30-Sep-21	15:35



# ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

# 2110021

PROJECT NAME: Wilson IC ~~03-179HNX~~ 03-179HNX

PROJECT No.

PROJECT No. 2110021

COMPANY NAME

Great Western

SEND REPORT TO

Max Trehus

ADDRESS

CITY / STATE / ZIP

PHONE

FAX

E-MAIL

MTrehus@GWP.com

# Chain-of-Custody

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.  
Turnaround time for samples received Saturday will be calculated beginning from the next business day.

LMO



2 1 1 0 0 2 1 . C

TURNAROUND TIME: \_\_\_\_\_ SAMPLER: \_\_\_\_\_

SITE ID: \_\_\_\_\_

EDD FORMAT: \_\_\_\_\_

PURCHASE ORDER: \_\_\_\_\_

BILL TO COMPANY: \_\_\_\_\_

INVOICE ATTN TO: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY / STATE / ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_

FAX: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

PARAMETER/METHOD REQUEST FOR ANALYSIS

A Dissolved Gases

B BTEX

C DRO

D GRO

E Anions, Alk, TPS

F DS Metals

G TR Metals

H

I

J

LAB ID	FIELD ID	MATRIX	SAMPLE DATE	SAMPLE TIME	# OF BOTTLES	PRESERVATIVE	QC	A	B	C	D	E	F	G	H	I	J	SEE NOTES SECTION
1	03-179HNXA	W	9/30/24	15:35	3	-		X										
1	03-179HNXA	↓	↓	↓	3	HCL			X									
1	03-179HNXA	↓	↓	↓	3	HCL				X								
1	03-179HNXA	↓	↓	↓	3	HCL					X							
1	03-179HNXA	↓	↓	↓	1	-						X						
2	03-179HNXB	↓	↓	↓	1	-							X					
1	03-179HNXA	↓	↓	↓	1	4N03								X				
67																		
10/1/21																		

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

REPORT LEVEL / QC REQUIRED	SIGNATURE	PRINTED NAME	DATE	TIME
Summary (Standard QC)	<i>[Signature]</i>	Kenny Pratt	10-1-21	14:26
LEVEL II (Standard QC)	<i>[Signature]</i>	Clare Trehus	10-1-21	14:26
LEVEL III (Std QC + forms)				
LEVEL IV (Std QC + forms + raw)				

Form 2022B

Facility ID 3.3

452182



**ALS Environmental - Fort Collins**  
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: great western oil

Workorder No: 2110021

Project Manager: KMO

Initials: CXT

Date: 10/01/2021

				N/A	YES	NO
1. Are airbills / shipping documents present and/or removable?				x		
Tracking number: _____						
2. Are custody seals on <b>shipping</b> containers intact?				x		
3. Are custody seals on <b>sample</b> containers intact?				x		
4. Is there a COC (chain-of-custody) present?					X	
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)					X	
6. Are short-hold samples present?						X
7. Are all samples within holding times for the requested analyses?					X	
8. Were all sample containers received intact? (not broken or leaking)					X	
9. Is there sufficient sample for the requested analyses?					X	
10. Are samples in proper containers for requested analyses? (form 250, <i>Sample Handling Guidelines</i> )					X	
11. Are all aqueous samples preserved correctly, if required? (excluding volatiles)					X	
12. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)					X	
13. Were the samples shipped on ice?					X	
14. Were cooler temperatures measured at 0.1-6.0°C?				IR gun used*:	#5	
				RAD ONLY	X	
Cooler #: <u>1</u>						
Temperature (°C): <u>3.3</u>						
# of custody seals on cooler: <u>0</u>						
External µR/hr reading: <u>NA</u>						
Background µR/hr reading: <u>11</u>						
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? NA (If no, see Form 008.)						

**\* Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.**

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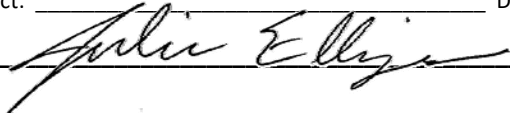
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Were unpreserved bottles pH checked? NA

All client bottle ID's vs ALS lab ID's double-checked by: CT

If applicable, was the client contacted? NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: 

**ALS -- Fort Collins**

**SAMPLE SUMMARY REPORT**

**Client:** Great Western Operating Company, LLC  
**Project:** Wilson IC 03-179HNX  
**Sample ID:** 03-179HNX-A  
**Legal Location:**  
**Collection Date:** 9/30/2021 15:35

**Date:** 27-Oct-21  
**Work Order:** 2110021  
**Lab ID:** 2110021-1  
**Matrix:** WATER  
**Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Alkalinity as Calcium Carbonate</b>			<b>SM2320B</b>			Prep Date: <b>10/13/2021</b> PrepBy: <b>AOW</b>
BICARBONATE AS CaCO3	600		20	MG/L	1	10/13/2021
CARBONATE AS CaCO3	210		20	MG/L	1	10/13/2021
TOTAL ALKALINITY AS CaCO3	810		20	MG/L	1	10/13/2021
<b>Diesel Range Organics</b>			<b>SW8015M</b>			Prep Date: <b>10/8/2021</b> PrepBy: <b>RAH</b>
Diesel Range Organics	19		1.2	MG/L	1	10/12/2021 01:40
Surr: O-TERPHENYL	88		69-120	%REC	1	10/12/2021 01:40
<b>Dissolved Gasses</b>			<b>RSK175</b>			Prep Date: <b>10/13/2021</b> PrepBy: <b>JRS</b>
METHANE	690		1	UG/L	1	10/13/2021 15:18
ETHANE	170		2	UG/L	1	10/13/2021 15:18
PROPANE	86		1	UG/L	1	10/13/2021 15:18
<b>Gasoline Range Organics</b>			<b>SW8015</b>			Prep Date: <b>10/7/2021</b> PrepBy: <b>RAH</b>
GASOLINE RANGE ORGANICS	6.4		1	MG/L	10	10/7/2021 22:43
Surr: 2,3,4-TRIFLUOROTOLUENE	111		80-120	%REC	10	10/7/2021 22:43
<b>GC/MS Volatiles</b>			<b>SW8260_25</b>			Prep Date: <b>10/7/2021</b> PrepBy: <b>DJL</b>
BENZENE	79		10	UG/L	10	10/7/2021 21:44
TOLUENE	170		10	UG/L	10	10/7/2021 21:44
ETHYLBENZENE	50		10	UG/L	10	10/7/2021 21:44
M+P-XYLENE	160		10	UG/L	10	10/7/2021 21:44
O-XYLENE	99		10	UG/L	10	10/7/2021 21:44
TOTAL XYLENES	260		1	UG/L	1	10/7/2021 21:44
Surr: 4-BROMOFLUOROBENZENE	96		80-120	%REC	10	10/7/2021 21:44
Surr: DIBROMOFLUOROMETHANE	100		80-120	%REC	10	10/7/2021 21:44
Surr: TOLUENE-D8	100		80-120	%REC	10	10/7/2021 21:44
<b>Ion Chromatography</b>			<b>EPA300.0</b>			Prep Date: <b>10/7/2021</b> PrepBy: <b>AOW</b>
CHLORIDE	8000		100	MG/L	500	10/7/2021 14:01
SULFATE	220		200	MG/L	200	10/7/2021 13:55
<b>Total Recoverable Metals by 200.7</b>			<b>EPA200.7</b>			Prep Date: <b>10/11/2021</b> PrepBy: <b>WJS</b>
CALCIUM	3100		10	MG/L	10	10/12/2021 15:56
POTASSIUM	790		10	MG/L	10	10/12/2021 15:56
MAGNESIUM	ND		10	MG/L	10	10/12/2021 15:56
SODIUM	1100		10	MG/L	10	10/12/2021 15:56
<b>Total Dissolved Solids</b>			<b>SM2540C</b>			Prep Date: <b>10/7/2021</b> PrepBy: <b>BMK</b>
TOTAL DISSOLVED SOLIDS	20000		40	MG/L	1	10/19/2021

**Client:** Great Western Operating Company, LLC

**Date:** 27-Oct-21

**Project:** Wilson IC 03-179HNX

**Work Order:** 2110021

**Sample ID:** 03-179HNX-B

**Lab ID:** 2110021-2

**Legal Location:**

**Matrix:** WATER

**Collection Date:** 9/30/2021 15:35

**Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Dissolved Metals by 200.7</b>			<b>EPA200.7</b>		Prep Date: <b>10/11/2021</b>	PrepBy: <b>WJS</b>
<b>CALCIUM</b>	3100		<b>10</b>	<b>MG/L</b>	10	10/12/2021 15:57
<b>POTASSIUM</b>	780		<b>10</b>	<b>MG/L</b>	10	10/12/2021 15:57
<b>MAGNESIUM</b>	ND		<b>10</b>	<b>MG/L</b>	10	10/12/2021 15:57
<b>SODIUM</b>	1100		<b>10</b>	<b>MG/L</b>	10	10/12/2021 15:57

**Client:** Great Western Operating Company, LLC  
**Project:** Wilson IC 03-179HNX  
**Sample ID:** 03-179HNX-B  
**Legal Location:**  
**Collection Date:** 9/30/2021 15:35

**Date:** 27-Oct-21  
**Work Order:** 2110021  
**Lab ID:** 2110021-2  
**Matrix:** WATER  
**Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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**Explanation of Qualifiers**

**Radiochemistry:**

- "Report Limit" is the MDC
- U or ND - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- \* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
- G - Sample density differs by more than 15% of LCS density.
- D - DER is greater than Control Limit
- M - Requested MDC not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

**Inorganics:**

- B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
- U or ND - Indicates that the compound was analyzed for but not detected.
- E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
- M - Duplicate injection precision was not met.
- N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
- Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
- \* - Duplicate analysis (relative percent difference) not within control limits.
- S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

**Organics:**

- U or ND - Indicates that the compound was analyzed for but not detected.
- B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E - Analyte concentration exceeds the upper level of the calibration range.
- J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A - A tentatively identified compound is a suspected aldol-condensation product.
- X - The analyte was diluted below an accurate quantitation level.
- \* - The spike recovery is equal to or outside the control criteria used.
- + - The relative percent difference (RPD) equals or exceeds the control criteria.
- G - A pattern resembling gasoline was detected in this sample.
- D - A pattern resembling diesel was detected in this sample.
- M - A pattern resembling motor oil was detected in this sample.
- C - A pattern resembling crude oil was detected in this sample.
- 4 - A pattern resembling JP-4 was detected in this sample.
- 5 - A pattern resembling JP-5 was detected in this sample.
- H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
  - gasoline
  - JP-8
  - diesel
  - mineral spirits
  - motor oil
  - Stoddard solvent
  - bunker C

ALS -- Fort Collins

Date: 10/27/2021 6:24:

Client: Great Western Operating Company, LLC  
 Work Order: 2110021  
 Project: Wilson IC 03-179HNX

**QC BATCH REPORT**

Batch ID: **HC211007-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS		Sample ID: <b>HC211007-61</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/7/2021 20:26</b>				
Client ID:		Run ID: <b>HC211007-61A</b>					Prep Date: <b>10/7/2021</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.508	0.1	0.5		102	80-120				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.0999		0.1		100	80-120					

LCSD		Sample ID: <b>HC211007-61</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/8/2021 00:59</b>				
Client ID:		Run ID: <b>HC211007-61A</b>					Prep Date: <b>10/7/2021</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.516	0.1	0.5		103	80-120		0.508	2	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.107		0.1		107	80-120			6		

MB		Sample ID: <b>HC211007-61</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/7/2021 21:12</b>				
Client ID:		Run ID: <b>HC211007-61A</b>					Prep Date: <b>10/7/2021</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.1									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.0967				97	80-120					

The following samples were analyzed in this batch:

Client: Great Western Operating Company, LLC

# QC BATCH REPORT

Work Order: 2110021

Project: Wilson IC 03-179HNX

Batch ID: **HC211008-81-1**

Instrument ID: **FUELS-1**

Method: **SW8015M**

**LCS** Sample ID: **HC211008-81** Units: **MG/L** Analysis Date: **10/11/2021 22:49**

Client ID: Run ID: **HC211011-81A** Prep Date: **10/8/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	7.65	1.07	8.33		92	53-120				20	
Surr: O-TERPHENYL	1.68		1.67		101	69-120					

**LCSD** Sample ID: **HC211008-81** Units: **MG/L** Analysis Date: **10/11/2021 23:53**

Client ID: Run ID: **HC211011-81A** Prep Date: **10/8/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	7.34	1.07	8.33		88	53-120		7.65	4	20	
Surr: O-TERPHENYL	1.7		1.67		102	69-120			1		

**MB** Sample ID: **HC211008-81** Units: **MG/L** Analysis Date: **10/11/2021 23:10**

Client ID: Run ID: **HC211011-81A** Prep Date: **10/8/2021** DF: **1**

Analyte	Result	ReportLimit										Qual
Diesel Range Organics	ND	1.1										
Surr: O-TERPHENYL	1.67				100	69-120						

The following samples were analyzed in this batch:

2110021-1

Client: Great Western Operating Company, LLC  
 Work Order: 2110021  
 Project: Wilson IC 03-179HNX

# QC BATCH REPORT

Batch ID: **HC211013-91-2** Instrument ID: **MEE-1** Method: **RSK175**

LCS		Sample ID: <b>HC211013-91</b>			Units: <b>UG/L</b>		Analysis Date: <b>10/13/2021 14:27</b>				
Client ID:		Run ID: <b>HC211013-91A</b>			Prep Date: <b>10/13/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	153	1	142		108	76-125				25	
ETHANE	288	2	267		108	70-120				25	
PROPANE	422	1	391		108	72-120				25	

LCSD		Sample ID: <b>HC211013-91</b>			Units: <b>UG/L</b>		Analysis Date: <b>10/13/2021 15:57</b>				
Client ID:		Run ID: <b>HC211013-91A</b>			Prep Date: <b>10/13/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	144	1	142		101	76-125		153	6	25	
ETHANE	270	2	267		101	70-120		288	6	25	
PROPANE	395	1	391		101	72-120		422	7	25	

MB		Sample ID: <b>HC211013-91</b>			Units: <b>UG/L</b>		Analysis Date: <b>10/13/2021 14:31</b>					
Client ID:		Run ID: <b>HC211013-91A</b>			Prep Date: <b>10/13/2021</b>		DF: <b>1</b>					
Analyte	Result	ReportLimit										Qual
METHANE	ND	1										
ETHANE	ND	2										
PROPANE	ND	1										

The following samples were analyzed in this batch:

Client: Great Western Operating Company, LLC  
 Work Order: 2110021  
 Project: Wilson IC 03-179HNX

# QC BATCH REPORT

Batch ID: **IP211011-1-5** Instrument ID: **ICPTrace2** Method: **EPA200.7**

LCS		Sample ID: <b>IP211011-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/12/2021 15:47</b>				
Client ID:		Run ID: <b>IT211012-1A6</b>			Prep Date: <b>10/11/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CALCIUM	39.1	1	40		98	85-115				20	
MAGNESIUM	40.6	1	40		101	85-115				20	
POTASSIUM	40.8	1	40		102	85-115				20	
SODIUM	40.3	1	40		101	85-115				20	

LCSD		Sample ID: <b>IP211011-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/12/2021 15:50</b>				
Client ID:		Run ID: <b>IT211012-1A6</b>			Prep Date: <b>10/11/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CALCIUM	40.1	1	40		100	85-115		39.1	2	20	
MAGNESIUM	41.4	1	40		104	85-115		40.6	2	20	
POTASSIUM	40.9	1	40		102	85-115		40.8	0	20	
SODIUM	40.3	1	40		101	85-115		40.3	0	20	

MB		Sample ID: <b>FP211004-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/12/2021 15:45</b>					
Client ID:		Run ID: <b>IT211012-1A6</b>			Prep Date: <b>10/11/2021</b>		DF: <b>1</b>					
Analyte	Result	ReportLimit										Qual
CALCIUM	ND	1										
MAGNESIUM	ND	1										
POTASSIUM	ND	1										
SODIUM	ND	1										

The following samples were analyzed in this batch: 2110021-1      2110021-2

Client: Great Western Operating Company, LLC

Work Order: 2110021

Project: Wilson IC 03-179HNX

# QC BATCH REPORT

Batch ID: VL211007-3-2

Instrument ID: HPV1

Method: SW8260\_25

LCS		Sample ID: VL211007-3			Units: %REC		Analysis Date: 10/7/2021 13:42				
Client ID:		Run ID: VL211007-3a			Prep Date: 10/7/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.2		25		101	80-120					
Surr: DIBROMOFLUOROMETHANE	25.2		25		101	80-120					
Surr: TOLUENE-D8	25.3		25		101	80-120					
BENZENE	11.3	1	10		113	80-120				20	
TOLUENE	11.3	1	10		113	80-120				20	
ETHYLBENZENE	11.6	1	10		116	80-120				20	
M+P-XYLENE	23.2	1	20		116	80-120				20	
O-XYLENE	11.6	1	10		116	80-120				20	

LCSD		Sample ID: VL211007-3			Units: %REC		Analysis Date: 10/7/2021 14:04				
Client ID:		Run ID: VL211007-3a			Prep Date: 10/7/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25		25		100	80-120			1		
Surr: DIBROMOFLUOROMETHANE	24.9		25		100	80-120			1		
Surr: TOLUENE-D8	24.9		25		100	80-120			1		
BENZENE	11.6	1	10		116	80-120		11.3	2	20	
TOLUENE	11.4	1	10		114	80-120		11.3	1	20	
ETHYLBENZENE	11.4	1	10		114	80-120		11.6	1	20	
M+P-XYLENE	23.4	1	20		117	80-120		23.2	1	20	
O-XYLENE	11.4	1	10		114	80-120		11.6	2	20	

MB		Sample ID: VL211007-3			Units: %REC		Analysis Date: 10/7/2021 14:48				
Client ID:		Run ID: VL211007-3a			Prep Date: 10/7/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.2				101	80-120					
Surr: DIBROMOFLUOROMETHANE	25				100	80-120					
Surr: TOLUENE-D8	25				100	80-120					
BENZENE	ND	1									
TOLUENE	ND	1									
ETHYLBENZENE	ND	1									
M+P-XYLENE	ND	1									
O-XYLENE	ND	1									
TOTAL XYLENES	ND	1									

The following samples were analyzed in this batch:

2110021-1

**Client:** Great Western Operating Company, LLC  
**Work Order:** 2110021  
**Project:** Wilson IC 03-179HNX

# QC BATCH REPORT

Batch ID: **AK211013-1-1**      Instrument ID: **NONE**      Method: **SM2320B**

LCS		Sample ID: <b>AK211013-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/13/2021</b>				
Client ID:		Run ID: <b>AK211013-1A1</b>			Prep Date: <b>10/13/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	99.7	5	100		100	85-115				15	

MB		Sample ID: <b>AK211013-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/13/2021</b>				
Client ID:		Run ID: <b>AK211013-1A1</b>			Prep Date: <b>10/13/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit									
BICARBONATE AS CaCO3	ND	5									
CARBONATE AS CaCO3	ND	5									
TOTAL ALKALINITY AS CaCO3	ND	5									

**The following samples were analyzed in this batch:**

Client: Great Western Operating Company, LLC  
 Work Order: 2110021  
 Project: Wilson IC 03-179HNX

# QC BATCH REPORT

Batch ID: **IC211007-1-1** Instrument ID: **IC3** Method: **EPA300.0**

LCS		Sample ID: <b>IC211007-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/7/2021 08:45</b>				
Client ID:		Run ID: <b>IC211007-1A1</b>			Prep Date: <b>10/7/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CHLORIDE	10.2	0.2	10		102	90-110				15	
SULFATE	50.3	1	50		101	90-110				15	

LCSD		Sample ID: <b>IC211007-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/7/2021 09:58</b>				
Client ID:		Run ID: <b>IC211007-1A1</b>			Prep Date: <b>10/7/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CHLORIDE	10.6	0.2	10		106	90-110		10.2	4	15	
SULFATE	51.4	1	50		103	90-110		50.3	2	15	

MB		Sample ID: <b>IC211007-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/7/2021 08:51</b>					
Client ID:		Run ID: <b>IC211007-1A1</b>			Prep Date: <b>10/7/2021</b>		DF: <b>1</b>					
Analyte	Result	ReportLimit										Qual
CHLORIDE	ND	0.2										
SULFATE	ND	1										

The following samples were analyzed in this batch:

**Client:** Great Western Operating Company, LLC  
**Work Order:** 2110021  
**Project:** Wilson IC 03-179HNX

# QC BATCH REPORT

Batch ID: **TD211007-1-1**      Instrument ID: **Balance**      Method: **SM2540C**

LCS		Sample ID: <b>TD211007-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/19/2021</b>				
Client ID:		Run ID: <b>TD211019-1A1</b>			Prep Date: <b>10/7/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	414	20	400		103	85-115				14	

LCSD		Sample ID: <b>TD211007-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/19/2021</b>				
Client ID:		Run ID: <b>TD211019-1A1</b>			Prep Date: <b>10/7/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	393	20	400		98	85-115		414	5	14	

MB		Sample ID: <b>TD211007-1</b>			Units: <b>MG/L</b>		Analysis Date: <b>10/19/2021</b>				
Client ID:		Run ID: <b>TD211019-1A1</b>			Prep Date: <b>10/7/2021</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	Qual								
TOTAL DISSOLVED SOLIDS	ND	20									

**The following samples were analyzed in this batch:**