



Thursday, February 25, 2021

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

Re: ALS Workorder: 2102138
Project Name: Wilson IC 03-262HN
Project Number:

Dear Mr. Trehus:

Two water samples were received from Great Western Operating Company, LLC, on 2/9/2021. 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.



2102138

GC/MS Volatiles:

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

The sample was re-analyzed one day out of hold. See NCR# 15210.

All remaining 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 matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria with the following exception:

Spiked Compound	QC Sample	Direction
Diesel Range Organics	MS	High

The recoveries of this compound in the laboratory control sample and laboratory control sample duplicate were within control limits, which suggest the outliers in the matrix spikes may have been due to matrix effects. No further action was taken.



All remaining 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 2102138-2 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 EMSL and 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.

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Sample Number(s) Cross-Reference Table

OrderNum: 2102138

Client Name: Great Western Operating Company, LLC

Client Project Name: Wilson IC 03-262HN

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
03-262HN A through E, G	2102138-1		WATER	08-Feb-21	15:28
03-262HN F	2102138-2		WATER	08-Feb-21	15:28



ALS Environmental

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

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.

ALS WORKORDER #
 202038

TURNAROUND TIME		SAMPLER		PAGE		of												
PROJECT NAME	Wilson IC 03-262HN			DISPOSAL	BY LAB or RETURN													
PROJECT No.	EDD FORMAT			PARAMETER/METHOD REQUEST FOR ANALYSIS														
COMPANY NAME	Great Western			A	Dissolved Gases													
SEND REPORT TO	Max Trehus			B	BTEX													
ADDRESS				C	DRO													
CITY/STATE/ZIP				D	GRO													
PHONE				E	Anions, Alk, TDS													
FAX				F	Ds Metals													
E-MAIL	MTrehus@GWP.Com			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	03-262HN A	W	2-8-21	15:28	3	-		X										
	03-262HN B				3	HCL			X									
	03-262HN C				3	HCL				X								
	03-262HN D				3	HCL					X							
	03-262HN E				1	-												
	03-262HN F				1	-								X	(2)			
	03-262HN G				1	HN03									X			

Form 2029

RELINQUISHED BY: *[Signature]* RECEIVED BY: *[Signature]* DATE: 2-9-21 TIME: 10:50

RELINQUISHED BY: *[Signature]* RECEIVED BY: *[Signature]* DATE: 2/12/21 TIME: 1050

RELINQUISHED BY: RECEIVED BY: DATE: TIME:

RELINQUISHED BY: RECEIVED BY: DATE: TIME:

RELINQUISHED BY: RECEIVED BY: DATE: TIME:

REPORT LEVEL / QC REQUIRED:
 Summary (Standard QC)
 LEVEL II (Standard QC)
 LEVEL III (Std QC + forms)
 LEVEL IV (Std QC + forms + raw)

Facility ID: 452195

NOTES: 452195

PRESERVATION KEY: 1-HCI 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/ZnAcetate 6-NaHSO4 7-4°C 8-Other

Client: Great Western Operating Company, LLC
Project: Wilson IC 03-262HN
Sample ID: 03-262HN A through E, G
Legal Location:
Collection Date: 2/8/2021 15:28

Date: 25-Feb-21
Work Order: 2102138
Lab ID: 2102138-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Alkalinity as Calcium Carbonate			SM2320B			Prep Date: 2/18/2021 PrepBy: KJS
BICARBONATE AS CaCO3	440		33	MG/L	1	2/18/2021
CARBONATE AS CaCO3	160		33	MG/L	1	2/18/2021
TOTAL ALKALINITY AS CaCO3	600		33	MG/L	1	2/18/2021
Diesel Range Organics			SW8015M			Prep Date: 2/22/2021 PrepBy: ASZ
Diesel Range Organics	17		1.1	MG/L	1	2/22/2021 12:01
Surr: O-TERPHENYL	95		69-120	%REC	1	2/22/2021 12:01
Dissolved Gasses			RSK175			Prep Date: 2/17/2021 PrepBy: ASZ
METHANE	3100		1	UG/L	1	2/17/2021 11:15
ETHANE	600		2	UG/L	1	2/17/2021 11:15
PROPANE	200		1	UG/L	1	2/17/2021 11:15
Gasoline Range Organics			SW8015			Prep Date: 2/15/2021 PrepBy: ASZ
GASOLINE RANGE ORGANICS	16		1	MG/L	10	2/15/2021 21:05
Surr: 2,3,4-TRIFLUOROTOLUENE	108		80-120	%REC	10	2/15/2021 21:05
GC/MS Volatiles			SW8260_25			Prep Date: 2/17/2021 PrepBy: AEW
BENZENE	140		4	UG/L	4	2/18/2021 00:54
TOLUENE	250		5	UG/L	5	2/23/2021 16:37
ETHYLBENZENE	59		4	UG/L	4	2/18/2021 00:54
M+P-XYLENE	220		4	UG/L	4	2/18/2021 00:54
O-XYLENE	130		4	UG/L	4	2/18/2021 00:54
TOTAL XYLENES	350		1	UG/L	1	2/18/2021 00:54
Surr: 4-BROMOFLUOROBENZENE	96		80-120	%REC	5	2/23/2021 16:37
Surr: 4-BROMOFLUOROBENZENE	99		80-120	%REC	4	2/18/2021 00:54
Surr: DIBROMOFLUOROMETHANE	96		80-120	%REC	4	2/18/2021 00:54
Surr: DIBROMOFLUOROMETHANE	99		80-120	%REC	5	2/23/2021 16:37
Surr: TOLUENE-D8	99		80-120	%REC	4	2/18/2021 00:54
Surr: TOLUENE-D8	100		80-120	%REC	5	2/23/2021 16:37
Ion Chromatography			EPA300.0			Prep Date: 2/10/2021 PrepBy: KJS
CHLORIDE	12000		200	MG/L	1000	2/11/2021 09:38
SULFATE	870		50	MG/L	50	2/10/2021 17:21
Total Recoverable Metals by 200.7			EPA200.7			Prep Date: 2/10/2021 PrepBy: TXS
CALCIUM	3700		10	MG/L	10	2/11/2021 12:05
POTASSIUM	410		10	MG/L	10	2/11/2021 12:05
MAGNESIUM	ND		10	MG/L	10	2/11/2021 12:05
SODIUM	3800		100	MG/L	100	2/11/2021 12:08
Total Dissolved Solids			SM2540C			Prep Date: 2/15/2021 PrepBy: LMC
TOTAL DISSOLVED SOLIDS	19000		400	MG/L	1	2/22/2021

Client: Great Western Operating Company, LLC
Project: Wilson IC 03-262HN
Sample ID: 03-262HN F
Legal Location:
Collection Date: 2/8/2021 15:28

Date: 25-Feb-21
Work Order: 2102138
Lab ID: 2102138-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dissolved Metals by 200.7			EPA200.7		Prep Date: 2/10/2021	PrepBy: TXS
CALCIUM	3700		10	MG/L	10	2/11/2021 12:06
POTASSIUM	410		10	MG/L	10	2/11/2021 12:06
MAGNESIUM	ND		10	MG/L	10	2/11/2021 12:06
SODIUM	4000		100	MG/L	100	2/11/2021 12:09

Client: Great Western Operating Company, LLC
Project: Wilson IC 03-262HN
Sample ID: 03-262HN F
Legal Location:
Collection Date: 2/8/2021 15:28

Date: 25-Feb-21
Work Order: 2102138
Lab ID: 2102138-2
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

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Date: 2/25/2021 3:16:1

Client: Great Western Operating Company, LLC
 Work Order: 2102138
 Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: **HC210215-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC210215-61** Units: **MG/L** Analysis Date: **2/15/2021 22:39**
 Client ID: Run ID: **HC210215-61A** Prep Date: **2/15/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.476	0.1	0.5		95	80-120				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.0989		0.1		99	80-120					

LCSD Sample ID: **HC210215-61** Units: **MG/L** Analysis Date: **2/15/2021 23:03**
 Client ID: Run ID: **HC210215-61A** Prep Date: **2/15/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.487	0.1	0.5		97	80-120		0.476	2	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.101		0.1		101	80-120			2		

MB Sample ID: **HC210215-61** Units: **MG/L** Analysis Date: **2/15/2021 19:31**
 Client ID: Run ID: **HC210215-61A** Prep Date: **2/15/2021** DF: **1**

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	0.0916				92	80-120					

The following samples were analyzed in this batch:

Client: Great Western Operating Company, LLC
 Work Order: 2102138
 Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: **HC210217-91-2** Instrument ID: **MEE-1** Method: **RSK175**

LCS Sample ID: **HC210217-91** Units: **UG/L** Analysis Date: **2/17/2021 10:00**
 Client ID: Run ID: **HC210217-91A** Prep Date: **2/17/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	161	1	142		113	76-125				25	
ETHANE	281	2	267		106	70-120				25	
PROPANE	412	1	391		105	72-120				25	

LCSD Sample ID: **HC210217-91** Units: **UG/L** Analysis Date: **2/17/2021 11:08**
 Client ID: Run ID: **HC210217-91A** Prep Date: **2/17/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	156	1	142		110	76-125		161	3	25	
ETHANE	272	2	267		102	70-120		281	3	25	
PROPANE	396	1	391		101	72-120		412	4	25	

MB Sample ID: **HC210217-91** Units: **UG/L** Analysis Date: **2/17/2021 10:03**
 Client ID: Run ID: **HC210217-91A** Prep Date: **2/17/2021** DF: **1**

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: 2102138
 Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: **HC210222-82-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS		Sample ID: HC210222-82			Units: MG/L		Analysis Date: 2/22/2021 14:31				
Client ID:		Run ID: HC210222-82A			Prep Date: 2/22/2021		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	6.96	1.07	8.33		83	53-120				20	
Surr: O-TERPHENYL	1.68		1.67		101	69-120					

LCSD		Sample ID: HC210222-82			Units: MG/L		Analysis Date: 2/22/2021 14:52				
Client ID:		Run ID: HC210222-82A			Prep Date: 2/22/2021		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	6.61	1.07	8.33		79	53-120		6.96	5	20	
Surr: O-TERPHENYL	1.63		1.67		98	69-120			3		

MB		Sample ID: HC210222-82			Units: MG/L		Analysis Date: 2/22/2021 11:40				
Client ID:		Run ID: HC210222-82A			Prep Date: 2/22/2021		DF: 1				
Analyte	Result	ReportLimit	Qual								
Diesel Range Organics	ND	1.1									
Surr: O-TERPHENYL	1.64		98	69-120							

MS		Sample ID: 2102138-1			Units: MG/L		Analysis Date: 2/22/2021 12:23				
Client ID: 03-262HN A through E, G		Run ID: HC210222-82A			Prep Date: 2/22/2021		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	27	1.04	8.1	17	122	53-120				20	*
Surr: O-TERPHENYL	1.64		1.62		101	69-120					

MSD		Sample ID: 2102138-1			Units: MG/L		Analysis Date: 2/22/2021 12:44				
Client ID: 03-262HN A through E, G		Run ID: HC210222-82A			Prep Date: 2/22/2021		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	26.6	1.08	8.45	17	112	53-120		27	2	20	
Surr: O-TERPHENYL	1.66		1.69		99	69-120			1		

The following samples were analyzed in this batch:

Client: Great Western Operating Company, LLC
 Work Order: 2102138
 Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: IP210210-3-2 Instrument ID: ICPTrace2 Method: EPA200.7

LCS		Sample ID: IP210210-3			Units: MG/L		Analysis Date: 2/11/2021 11:56				
Client ID:		Run ID: IT210211-1A3			Prep Date: 2/10/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CALCIUM	39	1	40		98	85-115				20	
MAGNESIUM	39.5	1	40		99	85-115				20	
POTASSIUM	40.9	1	40		102	85-115				20	
SODIUM	39.7	1	40		99	85-115				20	

LCSD		Sample ID: IP210210-3			Units: MG/L		Analysis Date: 2/11/2021 11:57				
Client ID:		Run ID: IT210211-1A3			Prep Date: 2/10/2021		DF: 1				
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		39	0	20	
MAGNESIUM	39.5	1	40		99	85-115		39.5	0	20	
POTASSIUM	40.7	1	40		102	85-115		40.9	0	20	
SODIUM	39.5	1	40		99	85-115		39.7	0	20	

MB		Sample ID: FP210209-1			Units: MG/L		Analysis Date: 2/11/2021 11:54					
Client ID:		Run ID: IT210211-1A3			Prep Date: 2/10/2021		DF: 1					
Analyte	Result	ReportLimit										Qual
CALCIUM	ND	1										
MAGNESIUM	ND	1										
POTASSIUM	ND	1										
SODIUM	ND	1										

MB		Sample ID: IP210210-3			Units: MG/L		Analysis Date: 2/11/2021 11:55					
Client ID:		Run ID: IT210211-1A3			Prep Date: 2/10/2021		DF: 1					
Analyte	Result	ReportLimit										Qual
CALCIUM	ND	1										
MAGNESIUM	ND	1										
POTASSIUM	ND	1										
SODIUM	ND	1										

The following samples were analyzed in this batch: 2102138-1 2102138-2

Client: Great Western Operating Company, LLC

Work Order: 2102138

Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: VL210217-3-3

Instrument ID: HPV1

Method: SW8260_25

LCS		Sample ID: VL210217-3			Units: %REC		Analysis Date: 2/17/2021 17:04				
Client ID:		Run ID: VL210217-3A			Prep Date: 2/17/2021		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	24.6		25		99	80-120					
Surr: DIBROMOFLUOROMETHANE	24.8		25		99	80-120					
Surr: TOLUENE-D8	25.1		25		100	80-120					
BENZENE	11.2	1	10		112	80-120				20	
TOLUENE	11.2	1	10		112	80-120				20	
ETHYLBENZENE	11.6	1	10		116	80-120				20	
M+P-XYLENE	21.4	1	20		107	80-120				20	
O-XYLENE	11.2	1	10		112	80-120				20	

LCSD		Sample ID: VL210217-3			Units: %REC		Analysis Date: 2/17/2021 17:28				
Client ID:		Run ID: VL210217-3A			Prep Date: 2/17/2021		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	25.3		25		101	80-120			3		
Surr: DIBROMOFLUOROMETHANE	25		25		100	80-120			1		
Surr: TOLUENE-D8	24.8		25		99	80-120			1		
BENZENE	11.7	1	10		117	80-120		11.2	4	20	
TOLUENE	11.5	1	10		115	80-120		11.2	2	20	
ETHYLBENZENE	11.8	1	10		118	80-120		11.6	2	20	
M+P-XYLENE	21.9	1	20		110	80-120		21.4	2	20	
O-XYLENE	11.4	1	10		114	80-120		11.2	1	20	

MB		Sample ID: VL210217-3			Units: %REC		Analysis Date: 2/17/2021 18:40				
Client ID:		Run ID: VL210217-3A			Prep Date: 2/17/2021		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	24.7				99	80-120					
Surr: DIBROMOFLUOROMETHANE	24.1				97	80-120					
Surr: TOLUENE-D8	24.3				97	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:

2102138-1

Client: Great Western Operating Company, LLC

Work Order: 2102138

Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: VL210223-4-2

Instrument ID: HPV4

Method: SW8260_25

LCS		Sample ID: VL210223-4			Units: %REC		Analysis Date: 2/23/2021 11:28				
Client ID:		Run ID: VL210223-4A			Prep Date: 2/23/2021		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	24.3		25		97	80-120					
Surr: DIBROMOFLUOROMETHANE	26.4		25		106	80-120					
Surr: TOLUENE-D8	24.6		25		99	80-120					
BENZENE	9.79	1	10		98	80-120				20	
TOLUENE	9.12	1	10		91	80-120				20	
ETHYLBENZENE	9.77	1	10		98	80-120				20	
M+P-XYLENE	19.7	1	20		98	80-120				20	
O-XYLENE	9.79	1	10		98	80-120				20	

LCSD		Sample ID: VL210223-4			Units: %REC		Analysis Date: 2/23/2021 11:47				
Client ID:		Run ID: VL210223-4A			Prep Date: 2/23/2021		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	24.8		25		99	80-120			2		
Surr: DIBROMOFLUOROMETHANE	26.4		25		106	80-120			0		
Surr: TOLUENE-D8	24.7		25		99	80-120			0		
BENZENE	9.34	1	10		93	80-120		9.79	5	20	
TOLUENE	8.62	1	10		86	80-120		9.12	6	20	
ETHYLBENZENE	9.3	1	10		93	80-120		9.77	5	20	
M+P-XYLENE	18.6	1	20		93	80-120		19.7	5	20	
O-XYLENE	9.22	1	10		92	80-120		9.79	6	20	

MB		Sample ID: VL210223-4			Units: %REC		Analysis Date: 2/23/2021 12:29				
Client ID:		Run ID: VL210223-4A			Prep Date: 2/23/2021		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	26.3		25		105	80-120					
Surr: DIBROMOFLUOROMETHANE	26.4		25		106	80-120					
Surr: TOLUENE-D8	24.9		25		99	80-120					
BENZENE	ND	1	10								
TOLUENE	ND	1	10								
ETHYLBENZENE	ND	1	10								
M+P-XYLENE	ND	1	20								
O-XYLENE	ND	1	10								
TOTAL XYLENES	ND	1	20								

The following samples were analyzed in this batch:

2102138-1

Client: Great Western Operating Company, LLC
 Work Order: 2102138
 Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: **AK210218-1-1** Instrument ID: **NONE** Method: **SM2320B**

LCS		Sample ID: AK210218-1			Units: MG/L		Analysis Date: 2/18/2021				
Client ID:		Run ID: AK210218-1a1			Prep Date: 2/18/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	98.8	5	100		99	85-115				15	

LCSD		Sample ID: AK210218-1			Units: MG/L		Analysis Date: 2/18/2021				
Client ID:		Run ID: AK210218-1a1			Prep Date: 2/18/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	98.9	5	100		99	85-115		98.8	0	15	

MB		Sample ID: AK210218-1			Units: MG/L		Analysis Date: 2/18/2021				
Client ID:		Run ID: AK210218-1a1			Prep Date: 2/18/2021		DF: 1				
Analyte	Result	ReportLimit	Qual								
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: 2102138
 Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: **IC210210-1-1** Instrument ID: **IC3** Method: **EPA300.0**

LCS		Sample ID: IC210210-1			Units: MG/L		Analysis Date: 2/10/2021 08:12				
Client ID:		Run ID: IC210210-1a1			Prep Date: 2/10/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CHLORIDE	10.1	0.2	10		101	90-110				15	
SULFATE	50.7	1	50		101	90-110				15	

LCSD		Sample ID: IC210210-1			Units: MG/L		Analysis Date: 2/10/2021 10:51				
Client ID:		Run ID: IC210210-1a1			Prep Date: 2/10/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
CHLORIDE	10.1	0.2	10		101	90-110		10.1	0	15	
SULFATE	50.6	1	50		101	90-110		50.7	0	15	

MB		Sample ID: IC210210-1			Units: MG/L		Analysis Date: 2/10/2021 08:26					
Client ID:		Run ID: IC210210-1a1			Prep Date: 2/10/2021		DF: 1					
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: 2102138
 Project: Wilson IC 03-262HN

QC BATCH REPORT

Batch ID: **TD210215-1-1** Instrument ID: **Balance** Method: **SM2540C**

LCS		Sample ID: TD210215-1			Units: MG/L		Analysis Date: 2/22/2021				
Client ID:		Run ID: TD210222-1A1			Prep Date: 2/15/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	397	20	400		99	85-115				14	

LCSD		Sample ID: TD210215-1			Units: MG/L		Analysis Date: 2/22/2021				
Client ID:		Run ID: TD210222-1A1			Prep Date: 2/15/2021		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	420	20	400		105	85-115		397	6	14	

MB		Sample ID: TD210215-1			Units: MG/L		Analysis Date: 2/22/2021				
Client ID:		Run ID: TD210222-1A1			Prep Date: 2/15/2021		DF: 1				
Analyte	Result	ReportLimit	Qual								
TOTAL DISSOLVED SOLIDS	ND	20									

The following samples were analyzed in this batch:

CONTROLLED NON-CONFORMANCE REPORT

Non-Conformance

Initiated By: Tyler W. Knaebel on 2/25/2021

Event Type: Method Requirements Not Met -- Holding Time Exceeded

Event Explanation: The sample was diluted (toluene only) and analyzed 1 day outside of holding time requirements. No further action was taken.

Action To

Prevent Recurrence: isolated incident - incorrect dilution within holding trime

Corrective Action

Corrective Action:

Department Manager Approval:

Approval Date:

Corrective Action Comments:

Workorders Affected

Workorder -- Procedure

Approved By

Approval Date

2102138 -- SW8260_25

No client contact information.

PENDING

Associated Batches

The samples were originally associated with the following Batch(es):

All rework was completed in the following Batch(es):

VL210223-4A created on 2/23/2021

Not Applicable

NCR Approval

Project Manager Approval:

Department Manager Approval:

QA Manager Approval: