Friday, June 25, 2021

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

Re: ALS Workorder: 2105355
Project Name: Schneider HD 11-102 HNX
Project Number:

Dear Mr. Trehus:

Two water samples were received from Great Western Operating Company, LLC, on 5/17/2021. 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)
Chloride and Sulfate - Subcontracted to ALS MI

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. OBrien
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.

2105355

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 matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
Ethane	MS	Low
Propane	MS	Low

The recoveries of these compounds in the laboratory control sample and laboratory control sample duplicate were within control limits, which suggest that the outliers in the matrix spikes may have been due to matrix effects. No further action was taken. Laboratory control sample and laboratory control sample duplicate results have been included.

The concentration of methane in the native sample was greater than 4x times the concentration of matrix spike added. When sample concentration is that much greater than the spike added, spike recoveries may not be accurate. The recoveries of this compound in the laboratory control sample and laboratory control sample duplicate were within control limits.

All remaining 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 surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
O-terphenyl	-1	low

The surrogate was below the lower contol limit for sample -1. The recovery was 42% where the lower limit is 69%. The sample was injected on a separate day with similar results. The sample required a 10X dilution for the targtet compound.

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 2105355-2 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:

Analyte	Method	SOP #
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
TDS	SM2540C	1101

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2105355
Client Name: Great Western Operating Company, LLC
Client Project Name: Schneider HD 11-102 HNX
Client Project Number:
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
11-102HNXA	2105355-1		WATER	14-May-21	13:50
11-102HNXB	2105355-2		WATER	14-May-21	13:50

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 #: 2105355

TURNAROUND TIME		SAMPLER		PAGE	of
PROJECT NAME	Schneider HD 11-102HNX	SITE ID		DISPOSAL	BY LAB or RETURN
PROJECT No.		EDD FORMAT		PARAMETER/METHOD REQUEST FOR ANALYSIS	
		PURCHASE ORDER		A	Dissolved Gasses
COMPANY NAME	Great Western	BILL TO COMPANY		B	BTEX
SEND REPORT TO	Matt Trehus	INVOICE ATTN TO		C	DRO
ADDRESS		ADDRESS		D	GRO
CITY / STATE / ZIP		CITY / STATE / ZIP		E	Anions, Alk, TDS
PHONE		PHONE		F	DS Metals
FAX		FAX		G	TR Metals
E-MAIL	MTrehus@GWP.com	E-MAIL		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	11-102HNX A	W	5/14/21	13:50	3	-		X										
1	11-102HNX A				3	HCL			X									
1	11-102HNX A				3	HCL				X								
1	11-102HNX A				3	HCL					X							
1	11-102HNX A				1	-						X						
2	11-102HNX B				1	-							X					
1	11-102HNX A				1	HNO3								X				

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

NOTES

Facility ID 454113

6 of 25

Seal

2.6

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

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

Form 202r9

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Kenny Pyatt	5-17-21	12:56
RECEIVED BY		Shiloh Sunny	5/17/21	12:50
RELINQUISHED BY				
RECEIVED BY	5/14/21			
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: GREAT WESTERN Workorder No: 2105355

Project Manager: KMO Initials: JPE Date: 05/17/2021

		N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable? Tracking number:	X		
2.	Are custody seals on **shipping** containers intact?	X		
3.	Are custody seals on **sample** 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, *Sample Handling Guidelines*)		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 #:	1						
Temperature (°C):	2.6						
# of custody seals on cooler:	1						
External µR/hr reading:	11						
Background µR/hr reading:	11						

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES** (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.**

11-102HNXA BOTTLE #14 was basic upon testing, added 0.5ml conc HNO3, final pH <2

Were unpreserved bottles pH checked? YES All client bottle ID's vs ALS lab ID's double-checked by:

If applicable, was the client contacted? **YES / NO / NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date: 05/18/2021

Form 201r30.xls
03/18/2021

*IR Gun #5, VWR SN 192272629

Client: Great Western Operating Company, LLC **Date:** *02-Jun-21*
Project: Schneider HD 11-102 HNX **Work Order:** 2105355
Sample ID: 11-102HNXA **Lab ID:** 2105355-1
Legal Location: **Matrix:** WATER
Collection Date: 5/14/2021 13:50 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Alkalinity as Calcium Carbonate			**SM2320B**		Prep Date: **5/24/2021**	PrepBy: **BMK**
BICARBONATE AS CaCO3	ND		50	MG/L	1	5/24/2021
CARBONATE AS CaCO3	**360**		**50**	**MG/L**	1	5/24/2021
TOTAL ALKALINITY AS CaCO3	**1100**		**50**	**MG/L**	1	5/24/2021
Diesel Range Organics			**SW8015M**		Prep Date: **5/18/2021**	PrepBy: **JRS**
Diesel Range Organics	**210**		**11**	**MG/L**	10	5/28/2021 16:45
Surr: O-TERPHENYL	*42*	*	*69-120*	*%REC*	10	5/28/2021 16:45
Dissolved Gasses			**RSK175**		Prep Date: **5/28/2021**	PrepBy: **JRS**
METHANE	**2300**		**1**	**UG/L**	1	5/28/2021 15:49
ETHANE	**320**		**2**	**UG/L**	1	5/28/2021 15:49
PROPANE	**140**		**1**	**UG/L**	1	5/28/2021 15:49
Gasoline Range Organics			**SW8015**		Prep Date: **5/20/2021**	PrepBy: **JRS**
GASOLINE RANGE ORGANICS	**70**		**5**	**MG/L**	50	5/20/2021 16:48
Surr: 2,3,4-TRIFLUOROTOLUENE	*104*		*80-120*	*%REC*	50	5/20/2021 16:48
GC/MS Volatiles			**SW8260_25**		Prep Date: **5/21/2021**	PrepBy: **AEW**
BENZENE	**190**		**25**	**UG/L**	25	5/21/2021 15:27
TOLUENE	**920**		**25**	**UG/L**	25	5/21/2021 15:27
ETHYLBENZENE	**310**		**25**	**UG/L**	25	5/21/2021 15:27
M+P-XYLENE	**1600**		**25**	**UG/L**	25	5/21/2021 15:27
O-XYLENE	**680**		**25**	**UG/L**	25	5/21/2021 15:27
TOTAL XYLENES	**2300**		**1**	**UG/L**	1	5/21/2021 15:27
Surr: 4-BROMOFLUOROBENZENE	*106*		*80-120*	*%REC*	25	5/21/2021 15:27
Surr: DIBROMOFLUOROMETHANE	*100*		*80-120*	*%REC*	25	5/21/2021 15:27
Surr: TOLUENE-D8	*102*		*80-120*	*%REC*	25	5/21/2021 15:27
Total Recoverable Metals by 200.7			**EPA200.7**		Prep Date: **5/23/2021**	PrepBy: **JML**
CALCIUM	**1600**		**10**	**MG/L**	10	5/26/2021 12:04
POTASSIUM	**1100**		**10**	**MG/L**	10	5/26/2021 12:04
MAGNESIUM	ND		10	MG/L	10	5/26/2021 12:04
SODIUM	**1100**		**10**	**MG/L**	10	5/26/2021 12:04
Total Dissolved Solids			**SM2540C**		Prep Date: **5/20/2021**	PrepBy: **BMK**
TOTAL DISSOLVED SOLIDS	**250000**		**400**	**MG/L**	1	5/20/2021

Client:	Great Western Operating Company, LLC	**Date:**	*02-Jun-21*
Project:	Schneider HD 11-102 HNX	**Work Order:**	2105355
Sample ID:	11-102HNXB	**Lab ID:**	2105355-2
Legal Location:		**Matrix:**	WATER
Collection Date:	5/14/2021 13:50	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dissolved Metals by 200.7			**EPA200.7**		Prep Date: **5/23/2021**	PrepBy: **JML**
CALCIUM	**1600**		**10**	**MG/L**	10	5/26/2021 12:05
POTASSIUM	**1100**		**10**	**MG/L**	10	5/26/2021 12:05
MAGNESIUM	ND		10	MG/L	10	5/26/2021 12:05
SODIUM	**1200**		**10**	**MG/L**	10	5/26/2021 12:05

Client:	Great Western Operating Company, LLC	**Date:**	*02-Jun-21*
Project:	Schneider HD 11-102 HNX	**Work Order:**	2105355
Sample ID:	11-102HNXB	**Lab ID:**	2105355-2
Legal Location:		**Matrix:**	WATER
Collection Date:	5/14/2021 13:50	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

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

Batch ID: **HC210518-81-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC210518-81** Units: **MG/L** Analysis Date: **5/20/2021 18:30**

Client ID: Run ID: **HC210520-81A** Prep Date: **5/18/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.07	1.07	8.33		73	53-120				20	
Surr: O-TERPHENYL	1.26		1.67		76	69-120					

LCSD Sample ID: **HC210518-81** Units: **MG/L** Analysis Date: **5/20/2021 18:51**

Client ID: Run ID: **HC210520-81A** Prep Date: **5/18/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.03	1.07	8.33		72	53-120		6.07	1	20	
Surr: O-TERPHENYL	1.29		1.67		77	69-120			2		

MB Sample ID: **HC210518-81** Units: **MG/L** Analysis Date: **5/20/2021 18:08**

Client ID: Run ID: **HC210520-81A** Prep Date: **5/18/2021** DF: **1**

Analyte	Result	ReportLimit	%REC	Control Limit	Qual
Diesel Range Organics	ND	1.1			
Surr: O-TERPHENYL	1.24		75	69-120	

The following samples were analyzed in this batch: 2105355-1

Batch ID: **HC210520-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS Sample ID: **HC210520-61** Units: **MG/L** Analysis Date: **5/20/2021 13:49**

Client ID: Run ID: **HC210520-61A** Prep Date: **5/20/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.478	0.1	0.5		96	80-120				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.103		0.1		103	80-120					

LCSD Sample ID: **HC210520-61** Units: **MG/L** Analysis Date: **5/20/2021 18:29**

Client ID: Run ID: **HC210520-61A** Prep Date: **5/20/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	0.532	0.1	0.5		106	80-120		0.478	11	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.108		0.1		108	80-120			5		

MB Sample ID: **HC210520-61** Units: **MG/L** Analysis Date: **5/20/2021 14:11**

Client ID: Run ID: **HC210520-61A** Prep Date: **5/20/2021** DF: **1**

Analyte	Result	ReportLimit	%REC	Control Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.1			
Surr: 2,3,4-TRIFLUOROTOLUENE	0.102		102	80-120	

The following samples were analyzed in this batch: 2105355-1

Batch ID: **HC210528-91-1** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC210528-91** Units: **UG/L** Analysis Date: **5/28/2021 15:32**
Client ID: Run ID: **HC210528-91A** Prep Date: **5/28/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	152	1	142		107	76-125				25	
ETHANE	291	2	267		109	70-120				25	
PROPANE	429	1	391		110	72-120				25	

LCSD Sample ID: **HC210528-91** Units: **UG/L** Analysis Date: **5/28/2021 17:15**
Client ID: Run ID: **HC210528-91A** Prep Date: **5/28/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	152	1	142		107	76-125		152	1	25	
ETHANE	297	2	267		111	70-120		291	2	25	
PROPANE	441	1	391		113	72-120		429	3	25	

MB Sample ID: **HC210528-91** Units: **UG/L** Analysis Date: **5/28/2021 15:45**
Client ID: Run ID: **HC210528-91A** Prep Date: **5/28/2021** DF: **1**

Analyte	Result	ReportLimit	Qual
METHANE	ND	1	
ETHANE	ND	2	
PROPANE	ND	1	

MS Sample ID: **2105355-1** Units: **UG/L** Analysis Date: **5/28/2021 16:30**
Client ID: **11-102HNXA** Run ID: **HC210528-91A** Prep Date: **5/28/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
ETHANE	389	2	133	320	48	70-120				25	*
PROPANE	277	1	196	140	71	72-120				25	*

The following samples were analyzed in this batch: 2105355-1

Batch ID: **IP210523-1-3** Instrument ID **ICPTrace2** Method: **EPA200.7**

LCS Sample ID: **IP210523-1** Units: **MG/L** Analysis Date: **5/26/2021 12:02**
Client ID: Run ID: **IT210526-1A6** Prep Date: **5/23/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	38.9	1	40		97	85-115				20	
MAGNESIUM	39.7	1	40		99	85-115				20	
POTASSIUM	41.9	1	40		105	85-115				20	
SODIUM	41	1	40		102	85-115				20	

LCSD Sample ID: **IP210523-1** Units: **MG/L** Analysis Date: **5/26/2021 12:03**
Client ID: Run ID: **IT210526-1A6** Prep Date: **5/23/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	39.1	1	40		98	85-115		38.9	0	20	
MAGNESIUM	39.9	1	40		100	85-115		39.7	0	20	
POTASSIUM	42	1	40		105	85-115		41.9	0	20	
SODIUM	41	1	40		103	85-115		41	0	20	

MB Sample ID: **FP210514-1** Units: **MG/L** Analysis Date: **5/26/2021 12:00**
Client ID: Run ID: **IT210526-1A6** Prep Date: **5/23/2021** DF: **1**

Analyte	Result	ReportLimit	Qual
CALCIUM	ND	1	
MAGNESIUM	ND	1	
POTASSIUM	ND	1	
SODIUM	ND	1	

MB Sample ID: **IP210523-1** Units: **MG/L** Analysis Date: **5/26/2021 12:01**
Client ID: Run ID: **IT210526-1A6** Prep Date: **5/23/2021** 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: 2105355-1 2105355-2

Batch ID: **VL210521-3-2** Instrument ID **HPV1** Method: **SW8260_25**

LCS Sample ID: **VL210521-3** Units: **%REC** Analysis Date: **5/21/2021 11:29**

Client ID: Run ID: **VL210521-3A** Prep Date: **5/21/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.8		25		99	80-120					
Surr: DIBROMOFLUOROMETHANE	24.9		25		100	80-120					
Surr: TOLUENE-D8	25		25		100	80-120					
BENZENE	8.81	1	10		88	80-120				20	
TOLUENE	8.9	1	10		89	80-120				20	
ETHYLBENZENE	8.87	1	10		89	80-120				20	
M+P-XYLENE	17.8	1	20		89	80-120				20	
O-XYLENE	8.89	1	10		89	80-120				20	

LCSD Sample ID: **VL210521-3** Units: **%REC** Analysis Date: **5/21/2021 12:42**

Client ID: Run ID: **VL210521-3A** Prep Date: **5/21/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.8		25		99	80-120			0		
Surr: DIBROMOFLUOROMETHANE	24.5		25		98	80-120			2		
Surr: TOLUENE-D8	25.3		25		101	80-120			1		
BENZENE	9.01	1	10		90	80-120		8.81	2	20	
TOLUENE	9.23	1	10		92	80-120		8.9	4	20	
ETHYLBENZENE	9.19	1	10		92	80-120		8.87	4	20	
M+P-XYLENE	18.6	1	20		93	80-120		17.8	4	20	
O-XYLENE	9.27	1	10		93	80-120		8.89	4	20	

MB Sample ID: **VL210521-3** Units: **%REC** Analysis Date: **5/21/2021 12:19**

Client ID: Run ID: **VL210521-3A** Prep Date: **5/21/2021** DF: **1**

Analyte	Result	ReportLimit	%REC	Control Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.6		98	80-120	
Surr: DIBROMOFLUOROMETHANE	24.4		98	80-120	
Surr: TOLUENE-D8	25.2		101	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: 2105355-1

Batch ID: **AK210524-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK210524-1** Units: **MG/L** Analysis Date: **5/24/2021**
Client ID: Run ID: **AK210524-1A1** Prep Date: **5/24/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	98.5	5	100		98	85-115				15	

MB Sample ID: **AK210524-1** Units: **MG/L** Analysis Date: **5/24/2021**
Client ID: Run ID: **AK210524-1A1** Prep Date: **5/24/2021** 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: 2105355-1

Batch ID: **TD210520-1-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD210520-1** Units: **MG/L** Analysis Date: **5/20/2021**
Client ID: Run ID: **TD210520-1A1** Prep Date: **5/20/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	401	20	400		100	85-115				14	

LCSD Sample ID: **TD210520-1** Units: **MG/L** Analysis Date: **5/20/2021**
Client ID: Run ID: **TD210520-1A1** Prep Date: **5/20/2021** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	374	20	400		93	85-115		401	7	14	

MB Sample ID: **TD210520-1** Units: **MG/L** Analysis Date: **5/20/2021**
Client ID: Run ID: **TD210520-1A1** Prep Date: **5/20/2021** DF: **1**

Analyte	Result	ReportLimit	Qual
TOTAL DISSOLVED SOLIDS	ND	20	

The following samples were analyzed in this batch: 2105355-1

10-Jun-2021

Katie O`Brien
ALS Environmental
225 Commerce Dr
Ft. Collins, CO 80524

Re: **2105355** Work Order: **21060256**

Dear Katie,

ALS Environmental received 1 sample on 02-Jun-2021 10:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 8.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Ehrland Bosworth

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

Client: ALS Environmental
Project: 2105355
Work Order: **21060256**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21060256-01	11-102HNXA	Water		5/14/2021 13:50	6/2/2021 10:30	☐

Client: ALS Environmental
Project: 2105355
WorkOrder: **21060256**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
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
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

Client: ALS Environmental
Project: 2105355
Work Order: 21060256

Case Narrative

Samples for the above noted Work Order were received on 06/02/2021. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group USA, Corp

Date: *10-Jun-21*

CLIENT: ALS Environmental
Project: 2105355

Work Order: 21060256

Lab ID: 21060256-01A
Client Sample ID: 11-102HNXA

Collection Date: 5/14/2021 1:50:00 PM
Matrix: WATER

Analyses	Result	Report Limit	MDL	Qual	Units	Dilution Factor	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY		**E300.0**					Analyst: **JDR**
Chloride	**5,000**	**500**	**160**		**mg/L**	500	6/8/2021 07:02 PM
Sulfate	**680**	**500**	**95**		**mg/L**	500	6/8/2021 07:02 PM

Qualifiers:

U - Analyzed for but Not Detected
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
P - Dual Column results RPD > 40%
E - Value above quantitation range
H - Analyzed outside of Hold Time

QC BATCH REPORT

Batch ID: **R319345** Instrument ID **IC3** Method: **E300.0**

MBLK Sample ID: **MBLK-R319345** Units: **mg/L** Analysis Date: **6/8/2021 12:18 PM**
Client ID: Run ID: **IC3_210608A** SeqNo: **7471241** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

LCS Sample ID: **LCS-R319345** Units: **mg/L** Analysis Date: **6/8/2021 12:37 PM**
Client ID: Run ID: **IC3_210608A** SeqNo: **7471242** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.446	0.31	1.0	10	0	94.5	90-110	0			
Sulfate	9.829	0.19	1.0	10	0	98.3	90-110	0			

MS Sample ID: **21060693-03M MS** Units: **mg/L** Analysis Date: **6/8/2021 02:52 PM**
Client ID: Run ID: **IC3_210608A** SeqNo: **7471249** Prep Date: DF: **80**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1546	25	80	800	910.7	79.4	80-120	0			S
Sulfate	827.4	15	80	800	37.56	98.7	80-120	0			

MSD Sample ID: **21060693-03M MSD** Units: **mg/L** Analysis Date: **6/8/2021 03:11 PM**
Client ID: Run ID: **IC3_210608A** SeqNo: **7471250** Prep Date: DF: **80**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1459	25	80	800	910.7	68.5	80-120	1546	5.83	20	S
Sulfate	826.7	15	80	800	37.56	98.6	80-120	827.4	0.089	20	

The following samples were analyzed in this batch: 21060256-01A

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

ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524

TF: (800) 443-1511 w PH: (970) 490-1511 w FX: (970) 490-1522

Chain-of-Custody

LAB ID: 210600256

DATE: 5/27/2021 | PAGE: 1 of 1

PROJECT NAME	Schneider HD 11-102 HNX	E-MAIL	kathleen.obrien@alsglobal.com	TURNAROUND	standard
PROJECT No.		PHONE	970-490-1511	DISPOSAL	By Lab or Return to Client
REPORT TO	Katie O'Brien	FAX	970-490-1522		
COMPANY	ALS Environmental				
ADDRESS	225 Commerce Drive, Fort Collins, Colorado 80524				

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Btls	QC	Cl and SO4 300.0
1	11-102HNXA	WATER	05/14/2021	13:50	1		X

COMMENTS: ALS FC SDG 2105355

Summary report and COGCC EDD

IR1 3.0°C pH<27

EB

	SIGNATURE	PRINTED NAME	DATE	TIME	COMPANY
Relinquished By		Julie Ellison	6/1/21	15:25	ALS
Received By		Diane F. Shea	6/2/21	1030	ALS
Relinquished By					
Received By					

ALS Group, USA

Sample Receipt Checklist

Client Name: **ALS - FORT COLLINS** Date/Time Received: **02-Jun-21 10:30**

Work Order: **21060256** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 03-Jun-21 (Date) Reviewed by: Ehrland Bosworth (eSignature) 03-Jun-21 (Date)

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 ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	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 ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.0/3.0 c	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/3/2021 7:41:30 AM		
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:

CorrectiveAction: