2009498

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met.

Dissolved Gasses:
The samples were prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met.

DRO:
The samples were 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.

BART:
The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with "ND" in the result field. If the target analyte is detected (present), then the sample will be reported with the estimated colony forming units/mL (cfu/mL) as provided by the manufacturer based on the day reaction was observed.

Metals:
The samples were analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The samples were to be analyzed for dissolved metals. The samples were 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 samples were analyzed following EMSL and 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
pH	SM4500-H^+ B	1126
Total phosphorus	SM4500-P	1119
Specific conductance	SM2510B	1128
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Total Nitrates	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

The samples were prepared and analyzed within the established hold time for each analysis with the exception of nitrate as N and nitrite as N. The samples were received with little hold time remaining.

All remaining acceptance criteria were met.

Client: Western Water and Land, Inc. **Date:** *13-Oct-20*
Project: GM 21-12 BWQ **Work Order:** 2009498
Sample ID: 0703040 **Lab ID:** 2009498-1
Legal Location: **Matrix:** WATER
Collection Date: 9/22/2020 11:40 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **9/29/2020**		PrepBy: **KJS**
BICARBONATE AS CaCO3	**490**		**20**	**MG/L**	1		9/29/2020
CARBONATE AS CaCO3	ND		20	MG/L	1		9/29/2020
TOTAL ALKALINITY AS CaCO3	**490**		**20**	**MG/L**	1		9/29/2020
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **9/28/2020**		PrepBy: **JML**
IRON RELATED BACTERIA	**140000**		**1**	**cfu/ml**	1		10/6/2020
SLIME FORMING BACTERIA	**67000**		**1**	**cfu/ml**	1		10/6/2020
SULFATE REDUCING BACTERIA	**6000**		**1**	**cfu/ml**	1		10/6/2020
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **9/29/2020**		PrepBy: **JRS**
Diesel Range Organics	**0.53**	J	**1**	**MG/L**	1	0.52	9/30/2020 09:18
Surr: O-TERPHENYL	*94*		*69-120*	*%REC*	1		9/30/2020 09:18
DISSOLVED GASSES			**RSK175**		Prep Date: **10/5/2020**		PrepBy: **ASZ**
METHANE	ND		1	UG/L	1	1	10/5/2020 17:13
ETHANE	ND		2	UG/L	1	2	10/5/2020 17:13
PROPANE	ND		1	UG/L	1	1	10/5/2020 17:13
GC/MS VOLATILES			**SW8260_25**		Prep Date: **10/5/2020**		PrepBy: **TWK**
BENZENE	ND		1	UG/L	1	0.3	10/5/2020 19:31
TOLUENE	ND		1	UG/L	1	0.34	10/5/2020 19:31
ETHYLBENZENE	ND		1	UG/L	1	0.33	10/5/2020 19:31
M+P-XYLENE	ND		1	UG/L	1	0.55	10/5/2020 19:31
O-XYLENE	ND		1	UG/L	1	0.34	10/5/2020 19:31
TOTAL XYLENES	ND		1	UG/L	1		10/5/2020 19:31
Surr: 4-BROMOFLUOROBENZENE	*102*		*80-120*	*%REC*	1		10/5/2020 19:31
Surr: DIBROMOFLUOROMETHANE	*103*		*80-120*	*%REC*	1		10/5/2020 19:31
Surr: TOLUENE-D8	*100*		*80-120*	*%REC*	1		10/5/2020 19:31
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	51	10/5/2020 19:31
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **9/25/2020**		PrepBy: **KJS**
BROMIDE	ND		0.2	MG/L	1	0.064	9/26/2020 10:54
CHLORIDE	**49**		**2**	**MG/L**	10	0.76	9/26/2020 11:07
FLUORIDE	**0.86**		**0.1**	**MG/L**	1	0.039	9/26/2020 10:54
NITRATE/NITRITE AS N	**1.3**		**0.15**	**MG/L**	1		9/26/2020 10:54
NITRATE AS N	**1.3**		**0.2**	**MG/L**	1	0.092	9/26/2020 10:54
NITRITE AS N	ND		0.15	MG/L	1	0.069	9/26/2020 10:54
SULFATE	**360**		**10**	**MG/L**	10	5.3	9/26/2020 11:07
METALS BY 200.8			**EPA200.8**		Prep Date: **10/8/2020**		PrepBy: **JML**
BARIUM	**0.00098**	J	**0.001**	**MG/L**	10	0.00049	10/13/2020 03:09
BORON	**0.2**		**0.05**	**MG/L**	10	0.026	10/13/2020 03:09
CALCIUM	**0.98**	J	**1**	**MG/L**	10	0.18	10/13/2020 03:09
IRON	ND		0.15	MG/L	10	0.071	10/13/2020 03:09
MAGNESIUM	**0.62**		**0.1**	**MG/L**	10	0.023	10/13/2020 03:09
MANGANESE	**0.0041**		**0.004**	**MG/L**	10	0.0021	10/13/2020 03:09

Client:	Western Water and Land, Inc.	**Date:**	*13-Oct-20*
Project:	GM 21-12 BWQ	**Work Order:**	2009498
Sample ID:	0703040	**Lab ID:**	2009498-1
Legal Location:		**Matrix:**	WATER
Collection Date:	9/22/2020 11:40	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	**4.7**		**1**	**MG/L**	10	0.2	10/13/2020 03:09
SELENIUM	**0.0029**		**0.0015**	**MG/L**	10	0.00067	10/13/2020 03:09
SODIUM	**440**		**1**	**MG/L**	10	0.13	10/13/2020 03:09
STRONTIUM	**0.013**		**0.001**	**MG/L**	10	0.00024	10/13/2020 03:09
PH			**SM4500-H**		Prep Date: **9/29/2020**		PrepBy: **KJS**
PH	**7.86**		**0.1**	**pH**	1		9/29/2020
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **9/29/2020**		PrepBy: **KJS**
SPECIFIC CONDUCTIVITY	**1831**		**1**	**umhos/cm**	1		9/29/2020
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **9/28/2020**		PrepBy: **LMC**
TOTAL DISSOLVED SOLIDS	**1100**		**40**	**MG/L**	1		9/30/2020
TOTAL PHOSPHORUS AS P			**SM4500-P**		Prep Date: **9/30/2020**		PrepBy: **LMC**
TOTAL PHOSPHORUS	**0.023**	J	**0.05**	**MG/L**	1	0.016	9/30/2020

Client: Western Water and Land, Inc. **Date:** *13-Oct-20*
Project: GM 21-12 BWQ **Work Order:** 2009498
Sample ID: Orona 47731 **Lab ID:** 2009498-2
Legal Location: **Matrix:** WATER
Collection Date: 9/22/2020 12:35 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **9/29/2020**		PrepBy: **KJS**
BICARBONATE AS CaCO3	**490**		**20**	**MG/L**	1		9/29/2020
CARBONATE AS CaCO3	ND		20	MG/L	1		9/29/2020
TOTAL ALKALINITY AS CaCO3	**490**		**20**	**MG/L**	1		9/29/2020
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **9/28/2020**		PrepBy: **JML**
IRON RELATED BACTERIA	**35000**		**1**	**cfu/ml**	1		10/6/2020
SLIME FORMING BACTERIA	**67000**		**1**	**cfu/ml**	1		10/6/2020
SULFATE REDUCING BACTERIA	**27000**		**1**	**cfu/ml**	1		10/6/2020
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **9/29/2020**		PrepBy: **JRS**
Diesel Range Organics	**0.54**	J	**1**	**MG/L**	1	0.52	9/30/2020 09:39
Surr: O-TERPHENYL	*96*		*69-120*	*%REC*	1		9/30/2020 09:39
DISSOLVED GASSES			**RSK175**		Prep Date: **10/5/2020**		PrepBy: **ASZ**
METHANE	ND		1	UG/L	1	1	10/5/2020 17:20
ETHANE	ND		2	UG/L	1	2	10/5/2020 17:20
PROPANE	ND		1	UG/L	1	1	10/5/2020 17:20
GC/MS VOLATILES			**SW8260_25**		Prep Date: **10/5/2020**		PrepBy: **TWK**
BENZENE	ND		1	UG/L	1	0.3	10/5/2020 19:11
TOLUENE	ND		1	UG/L	1	0.34	10/5/2020 19:11
ETHYLBENZENE	ND		1	UG/L	1	0.33	10/5/2020 19:11
M+P-XYLENE	ND		1	UG/L	1	0.55	10/5/2020 19:11
O-XYLENE	ND		1	UG/L	1	0.34	10/5/2020 19:11
TOTAL XYLENES	ND		1	UG/L	1		10/5/2020 19:11
Surr: 4-BROMOFLUOROBENZENE	*104*		*80-120*	*%REC*	1		10/5/2020 19:11
Surr: DIBROMOFLUOROMETHANE	*102*		*80-120*	*%REC*	1		10/5/2020 19:11
Surr: TOLUENE-D8	*100*		*80-120*	*%REC*	1		10/5/2020 19:11
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	51	10/5/2020 19:11
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **9/25/2020**		PrepBy: **KJS**
BROMIDE	ND		0.2	MG/L	1	0.064	9/26/2020 11:20
CHLORIDE	**49**		**2**	**MG/L**	10	0.76	9/26/2020 11:33
FLUORIDE	**0.86**		**0.1**	**MG/L**	1	0.039	9/26/2020 11:20
NITRATE/NITRITE AS N	**1.3**		**0.15**	**MG/L**	1		9/26/2020 11:20
NITRATE AS N	**1.3**		**0.2**	**MG/L**	1	0.092	9/26/2020 11:20
NITRITE AS N	ND		0.15	MG/L	1	0.069	9/26/2020 11:20
SULFATE	**360**		**10**	**MG/L**	10	5.3	9/26/2020 11:33
METALS BY 200.8			**EPA200.8**		Prep Date: **10/8/2020**		PrepBy: **JML**
BARIUM	**0.0014**		**0.001**	**MG/L**	10	0.00049	10/13/2020 03:12
BORON	**0.21**		**0.05**	**MG/L**	10	0.026	10/13/2020 03:12
CALCIUM	**1.1**		**1**	**MG/L**	10	0.18	10/13/2020 03:12
IRON	ND		0.15	MG/L	10	0.071	10/13/2020 03:12
MAGNESIUM	**0.67**		**0.1**	**MG/L**	10	0.023	10/13/2020 03:12
MANGANESE	ND		0.004	MG/L	10	0.0021	10/13/2020 03:12

Client:	Western Water and Land, Inc.	**Date:**	*13-Oct-20*
Project:	GM 21-12 BWQ	**Work Order:**	2009498
Sample ID:	Orona 47731	**Lab ID:**	2009498-2
Legal Location:		**Matrix:**	WATER
Collection Date:	9/22/2020 12:35	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	**4.5**		**1**	**MG/L**	10	0.2	10/13/2020 03:12
SELENIUM	**0.0029**		**0.0015**	**MG/L**	10	0.00067	10/13/2020 03:12
SODIUM	**440**		**1**	**MG/L**	10	0.13	10/13/2020 03:12
STRONTIUM	**0.014**		**0.001**	**MG/L**	10	0.00024	10/13/2020 03:12
PH			**SM4500-H**		Prep Date: **9/29/2020**		PrepBy: **KJS**
PH	**7.89**		**0.1**	**pH**	1		9/29/2020
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **9/29/2020**		PrepBy: **KJS**
SPECIFIC CONDUCTIVITY	**1818**		**1**	**umhos/cm**	1		9/29/2020
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **9/28/2020**		PrepBy: **LMC**
TOTAL DISSOLVED SOLIDS	**1200**		**40**	**MG/L**	1		9/30/2020
TOTAL PHOSPHORUS AS P			**SM4500-P**		Prep Date: **9/30/2020**		PrepBy: **LMC**
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	0.016	9/30/2020

Client:	Western Water and Land, Inc.	**Date:**	*13-Oct-20*
Project:	GM 21-12 BWQ	**Work Order:**	2009498
Sample ID:	Trip Blank	**Lab ID:**	2009498-3
Legal Location:		**Matrix:**	WATER
Collection Date:	9/8/2020	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
GC/MS VOLATILES			**SW8260_25**		Prep Date: **10/5/2020**		PrepBy: **TWK**
BENZENE	ND		1	UG/L	1	0.3	10/5/2020 18:51
TOLUENE	ND		1	UG/L	1	0.34	10/5/2020 18:51
ETHYLBENZENE	ND		1	UG/L	1	0.33	10/5/2020 18:51
M+P-XYLENE	ND		1	UG/L	1	0.55	10/5/2020 18:51
O-XYLENE	ND		1	UG/L	1	0.34	10/5/2020 18:51
TOTAL XYLENES	ND		1	UG/L	1		10/5/2020 18:51
Surr: 4-BROMOFLUOROBENZENE	*103*		*80-120*	*%REC*	1		10/5/2020 18:51
Surr: DIBROMOFLUOROMETHANE	*103*		*80-120*	*%REC*	1		10/5/2020 18:51
Surr: TOLUENE-D8	*100*		*80-120*	*%REC*	1		10/5/2020 18:51
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	51	10/5/2020 18:51

Client:	Western Water and Land, Inc.	**Date:**	*13-Oct-20*
Project:	GM 21-12 BWQ	**Work Order:**	2009498
Sample ID:	Trip Blank	**Lab ID:**	2009498-3
Legal Location:		**Matrix:**	WATER
Collection Date:	9/8/2020	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	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: **HC200929-81-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC200929-81** Units: **MG/L** Analysis Date: **9/30/2020 12:31**

Client ID: Run ID: **HC200929-81A** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	7.44	1.07	8.33		89	53-120				20	
Surr: O-TERPHENYL	1.4		1.67		84	69-120					

LCSD Sample ID: **HC200929-81** Units: **MG/L** Analysis Date: **9/30/2020 13:14**

Client ID: Run ID: **HC200929-81A** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	7.21	1.07	8.33		87	53-120		7.44	3	20	
Surr: O-TERPHENYL	1.66		1.67		100	69-120			17		

MB Sample ID: **HC200929-81** Units: **MG/L** Analysis Date: **9/30/2020 13:57**

Client ID: Run ID: **HC200929-81A** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	MDL	Qual
Diesel Range Organics	ND	1.1	0.54	
Surr: O-TERPHENYL	1.5		90 69-120	

The following samples were analyzed in this batch: 2009498-1 2009498-2

QC BATCH REPORT

Batch ID: **HC201005-91-2** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC201005-91** Units: **UG/L** Analysis Date: **10/5/2020 15:45**

Client ID: Run ID: **HC201005-91A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	129	1	142		91	76-125				25	
ETHANE	251	2	267		94	70-120				25	
PROPANE	367	1	391		94	72-120				25	

LCSD Sample ID: **HC201005-91** Units: **UG/L** Analysis Date: **10/5/2020 16:50**

Client ID: Run ID: **HC201005-91A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	129	1	142		91	76-125		129	0	25	
ETHANE	248	2	267		93	70-120		251	1	25	
PROPANE	376	1	391		96	72-120		367	3	25	

MB Sample ID: **HC201005-91** Units: **UG/L** Analysis Date: **10/5/2020 15:50**

Client ID: Run ID: **HC201005-91A** Prep Date: **10/5/2020** DF: **1**

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

The following samples were analyzed in this batch: 2009498-1 2009498-2

QC BATCH REPORT

Batch ID: **IP201008-4-5** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **IM201008-4** Units: **MG/L** Analysis Date: **10/13/2020 02:27**

Client ID: Run ID: **IM201012-10A23** Prep Date: **10/8/2020** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.0961	0.001	0.1		96	85-115				20	
BORON	0.98	0.05	1		98	85-115				20	
CALCIUM	10.3	1	10		103	85-115				20	
IRON	4.88	0.15	5		98	85-115				20	
MAGNESIUM	9.66	0.1	10		97	85-115				20	
MANGANESE	0.104	0.004	0.1		104	85-115				20	
POTASSIUM	5.18	1	5		104	85-115				20	
SELENIUM	0.101	0.0015	0.1		101	85-115				20	
SODIUM	10.5	1	10		105	85-115				20	
STRONTIUM	0.103	0.001	0.1		103	85-115				20	

LCSD Sample ID: **IM201008-4** Units: **MG/L** Analysis Date: **10/13/2020 02:33**

Client ID: Run ID: **IM201012-10A23** Prep Date: **10/8/2020** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.096	0.001	0.1		96	85-115		0.0961	0	20	
BORON	0.987	0.05	1		99	85-115		0.98	1	20	
CALCIUM	10.4	1	10		104	85-115		10.3	1	20	
IRON	4.97	0.15	5		99	85-115		4.88	2	20	
MAGNESIUM	9.71	0.1	10		97	85-115		9.66	1	20	
MANGANESE	0.104	0.004	0.1		104	85-115		0.104	1	20	
POTASSIUM	5.4	1	5		108	85-115		5.18	4	20	
SELENIUM	0.0996	0.0015	0.1		100	85-115		0.101	2	20	
SODIUM	10.6	1	10		106	85-115		10.5	1	20	
STRONTIUM	0.102	0.001	0.1		102	85-115		0.103	1	20	

QC BATCH REPORT

Batch ID: **IP201008-4-5** Instrument ID **ICPMS2** Method: **EPA200.8**

MB Sample ID: **FP200922-4** Units: **MG/L** Analysis Date: **10/13/2020 02:21**

Client ID: Run ID: **IM201012-10A23** Prep Date: **10/8/2020** DF: **10**

Analyte	Result	ReportLimit	MDL	Qual
BARIUM	ND	0.001	0.00049	
BORON	ND	0.05	0.026	
CALCIUM	ND	1	0.18	
IRON	ND	0.15	0.071	
MAGNESIUM	ND	0.1	0.023	
MANGANESE	0.0033	0.004	0.0021	J
POTASSIUM	ND	1	0.2	
SELENIUM	ND	0.0015	0.00067	
SODIUM	ND	1	0.13	
STRONTIUM	ND	0.001	0.00024	

The following samples were analyzed in this batch: 2009498-1 2009498-2

Client: Western Water and Land, Inc.
Work Order: 2009498
Project: GM 21-12 BWQ

QC BATCH REPORT

Batch ID: **VL201005-3-1** Instrument ID **HPV3** Method: **SW8260_25**

LCS Sample ID: **VL201005-33** Units: **UG/L** Analysis Date: **10/5/2020 13:56**
Client ID: Run ID: **VL201005-33A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1070	100	1000		107	75-121				20	

LCSD Sample ID: **VL201005-33** Units: **UG/L** Analysis Date: **10/5/2020 14:16**
Client ID: Run ID: **VL201005-33A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1000	100	1000		100	75-121		1070	6	20	

MB Sample ID: **VL201005-3** Units: **UG/L** Analysis Date: **10/5/2020 14:36**
Client ID: Run ID: **VL201005-33A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	MDL	Qual
GASOLINE RANGE ORGANICS	ND	100	51	

The following samples were analyzed in this batch: 2009498-1 2009498-2 2009498-3

Batch ID: **VL201005-3-2** Instrument ID **HPV3** Method: **SW8260_25**

LCS Sample ID: **VL201005-3** Units: **%REC** Analysis Date: **10/5/2020 13:16**

Client ID: Run ID: **VL201005-33A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.7		25		103	80-120					
Surr: DIBROMOFLUOROMETHANE	24.4		25		98	80-120					
Surr: TOLUENE-D8	24.7		25		99	80-120					
BENZENE	9.85	1	10		99	80-120				20	
TOLUENE	9.9	1	10		99	80-120				20	
ETHYLBENZENE	10.1	1	10		101	80-120				20	
M+P-XYLENE	20.3	1	20		101	80-120				20	
O-XYLENE	10	1	10		100	80-120				20	

LCSD Sample ID: **VL201005-3** Units: **%REC** Analysis Date: **10/5/2020 13:36**

Client ID: Run ID: **VL201005-33A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.8		25		103	80-120			1		
Surr: DIBROMOFLUOROMETHANE	25.1		25		100	80-120			3		
Surr: TOLUENE-D8	24.9		25		100	80-120			1		
BENZENE	10.2	1	10		102	80-120		9.85	4	20	
TOLUENE	10	1	10		100	80-120		9.9	1	20	
ETHYLBENZENE	10.3	1	10		103	80-120		10.1	2	20	
M+P-XYLENE	20.5	1	20		103	80-120		20.3	1	20	
O-XYLENE	10.1	1	10		101	80-120		10	1	20	

MB Sample ID: **VL201005-3** Units: **%REC** Analysis Date: **10/5/2020 14:36**

Client ID: Run ID: **VL201005-33A** Prep Date: **10/5/2020** DF: **1**

Analyte	Result	ReportLimit	MDL				Qual
Surr: 4-BROMOFLUOROBENZENE	26.2			105	80-120		
Surr: DIBROMOFLUOROMETHANE	25.1			100	80-120		
Surr: TOLUENE-D8	24.3			97	80-120		
BENZENE	ND	1	0.3				
TOLUENE	ND	1	0.34				
ETHYLBENZENE	ND	1	0.33				
M+P-XYLENE	ND	1	0.55				
O-XYLENE	ND	1	0.34				
TOTAL XYLENES	ND	1					

The following samples were analyzed in this batch: 2009498-1 2009498-2 2009498-3

QC BATCH REPORT

Batch ID: **AK200929-2-1** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK200929-2** Units: **MG/L** Analysis Date: **9/29/2020**
Client ID: Run ID: **AK200929-1a1** Prep Date: **9/29/2020** 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	100	5	100		100	85-115				15	

LCSD Sample ID: **AK200929-2** Units: **MG/L** Analysis Date: **9/29/2020**
Client ID: Run ID: **AK200929-1a1** Prep Date: **9/29/2020** 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	99.1	5	100		99	85-115		100	1	15	

MB Sample ID: **AK200929-2** Units: **MG/L** Analysis Date: **9/29/2020**
Client ID: Run ID: **AK200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	MDL	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: 2009498-1 2009498-2

QC BATCH REPORT

Batch ID: **IC200926-1-2** Instrument ID **IC3** Method: **EPA300.0**

LCS Sample ID: **IC200926-1** Units: **MG/L** Analysis Date: **9/26/2020 09:08**
Client ID: Run ID: **IC200926-1a2** Prep Date: **9/25/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	10.2	0.2	10		102	90-110				15	
CHLORIDE	10.2	0.2	10		102	90-110				15	
FLUORIDE	5.12	0.1	5		102	90-110				15	
NITRATE AS N	10.2	0.2	10		102	90-110				15	
NITRITE AS N	5.08	0.15	4.99		102	90-110				15	
SULFATE	50.8	1	50		102	90-110				15	

LCSD Sample ID: **IC200926-1** Units: **MG/L** Analysis Date: **9/26/2020 11:46**
Client ID: Run ID: **IC200926-1a2** Prep Date: **9/25/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	10	0.2	10		100	90-110		10.2	2	15	
CHLORIDE	10.2	0.2	10		102	90-110		10.2	0	15	
FLUORIDE	5.04	0.1	5		101	90-110		5.12	1	15	
NITRATE AS N	10.1	0.2	10		101	90-110		10.2	0	15	
NITRITE AS N	5.06	0.15	4.99		102	90-110		5.08	0	15	
SULFATE	50.8	1	50		102	90-110		50.8	0	15	

MB Sample ID: **IC200926-1** Units: **MG/L** Analysis Date: **9/26/2020 09:21**
Client ID: Run ID: **IC200926-1a2** Prep Date: **9/25/2020** DF: **1**

Analyte	Result	ReportLimit	MDL	Qual
BROMIDE	ND	0.2	0.064	
CHLORIDE	ND	0.2	0.076	
FLUORIDE	ND	0.1	0.039	
NITRATE AS N	ND	0.2	0.092	
NITRITE AS N	ND	0.15	0.069	
SULFATE	ND	1	0.53	

The following samples were analyzed in this batch: 2009498-1 2009498-2

Batch ID: **pH200929-1-1** Instrument ID **pH-2** Method: **SM4500-H**

CCV Sample ID: **CCV1** Units: **pH** Analysis Date: **9/29/2020**
Client ID: Run ID: **pH200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.09	0.1	7			6.9-7.1					

CCV Sample ID: **CCV2** Units: **pH** Analysis Date: **9/29/2020**
Client ID: Run ID: **pH200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.07	0.1	7			6.9-7.1					

CCV Sample ID: **CCV3** Units: **pH** Analysis Date: **9/29/2020**
Client ID: Run ID: **pH200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	6.98	0.1	7			6.9-7.1					

ICV Sample ID: **ICV** Units: **pH** Analysis Date: **9/29/2020**
Client ID: Run ID: **pH200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.02	0.1	7			6.9-7.1					

The following samples were analyzed in this batch: 2009498-1 2009498-2

QC BATCH REPORT

Batch ID: **SC200929-1-1** Instrument ID **pH-2** Method: **SM2510B**

CCV Sample ID: **CCV1** Units: **umhos/cm** Analysis Date: **9/29/2020**
Client ID: Run ID: **SC200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1290	1	1410		91	90-110					

CCV Sample ID: **CCV2** Units: **umhos/cm** Analysis Date: **9/29/2020**
Client ID: Run ID: **SC200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1280	1	1410		91	90-110					

ICV Sample ID: **ICV** Units: **umhos/cm** Analysis Date: **9/29/2020**
Client ID: Run ID: **SC200929-1a1** Prep Date: **9/29/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	714	1	718		99	90-110					

The following samples were analyzed in this batch: 2009498-1 2009498-2

QC BATCH REPORT

Batch ID: **TD200928-1-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD200928-1** Units: **MG/L** Analysis Date: **9/30/2020**
Client ID: Run ID: **TD200930-1A1** Prep Date: **9/28/2020** DF: **1**

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

MB Sample ID: **TD200928-1** Units: **MG/L** Analysis Date: **9/30/2020**
Client ID: Run ID: **TD200930-1A1** Prep Date: **9/28/2020** DF: **1**

Analyte	Result	ReportLimit	MDL	Qual
TOTAL DISSOLVED SOLIDS	ND	20		

The following samples were analyzed in this batch: 2009498-1 2009498-2

Client: Western Water and Land, Inc.
Work Order: 2009498
Project: GM 21-12 BWQ

QC BATCH REPORT

Batch ID: **TP200930-1-1** Instrument ID **Spec** Method: **SM4500-P**

LCS Sample ID: **TP200930-1** Units: **MG/L** Analysis Date: **9/30/2020**
Client ID: Run ID: **TP200930-1A2** Prep Date: **9/30/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.561	0.05	0.5		112	80-120				20	

LCSD Sample ID: **TP200930-1** Units: **MG/L** Analysis Date: **9/30/2020**
Client ID: Run ID: **TP200930-1A2** Prep Date: **9/30/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.501	0.05	0.5		100	80-120		0.561	11	20	

MB Sample ID: **TP200930-1** Units: **MG/L** Analysis Date: **9/30/2020**
Client ID: Run ID: **TP200930-1A2** Prep Date: **9/30/2020** DF: **1**

Analyte	Result	ReportLimit	MDL	Qual
TOTAL PHOSPHORUS	ND	0.05	0.016	

MS Sample ID: **2009498-1** Units: **MG/L** Analysis Date: **9/30/2020**
Client ID: **0703040** Run ID: **TP200930-1A2** Prep Date: **9/30/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.273	0.05	0.25	0.023	100	80-120				20	

MSD Sample ID: **2009498-1** Units: **MG/L** Analysis Date: **9/30/2020**
Client ID: **0703040** Run ID: **TP200930-1A2** Prep Date: **9/30/2020** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.262	0.05	0.25	0.023	96	80-120		0.273	4	20	

The following samples were analyzed in this batch: 2009498-1 2009498-2