



2010685

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

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.

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 sample was 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 sample 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 MCAWW, 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
pH	SM4500-H ⁺ B	1126
Total phosphorus	365.2	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

A matrix spike (MS) was prepared and analyzed with the anion batch. All guidance criteria for precision and accuracy were met with the following exceptions:

<u>Analyte</u>	<u>Sample ID</u>
Bromide	2010685-1MS
Nitrite as N	2010685-1MS

The native sample result is flagged for bromide and nitrite as N. The laboratory control samples indicate that the procedure was in control.

All remaining acceptance criteria were met.

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
 Project: RU 11-7 BWQ
 Sample ID: Yellow Jacket Spg
 Legal Location:
 Collection Date: 10/29/2020 12:25

Date: 30-Nov-20
 Work Order: 2010685
 Lab ID: 2010685-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 11/10/2020 PrepBy: KJS		
BICARBONATE AS CaCO3	310		20	MG/L	1		11/10/2020
CARBONATE AS CaCO3	ND		20	MG/L	1		11/10/2020
TOTAL ALKALINITY AS CaCO3	310		20	MG/L	1		11/10/2020
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 11/3/2020 PrepBy: JML		
IRON RELATED BACTERIA	140000		1	cfu/ml	1		11/11/2020
SLIME FORMING BACTERIA	440000		1	cfu/ml	1		11/11/2020
SULFATE REDUCING BACTERIA	500000		1	cfu/ml	1		11/11/2020
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 11/5/2020 PrepBy: ASZ		
Diesel Range Organics	ND		1	MG/L	1	0.53	11/18/2020 06:57
Surr: O-TERPHENYL	82		69-120	%REC	1		11/18/2020 06:57
DISSOLVED GASSES			RSK175		Prep Date: 11/5/2020 PrepBy: ASZ		
METHANE	2.1		1	UG/L	1	1	11/5/2020 12:18
ETHANE	ND		2	UG/L	1	2	11/5/2020 12:18
PROPANE	ND		1	UG/L	1	1	11/5/2020 12:18
GC/MS VOLATILES			SW8260_25		Prep Date: 11/6/2020 PrepBy: TWK		
BENZENE	ND		1	UG/L	1	0.3	11/7/2020 01:42
TOLUENE	ND		1	UG/L	1	0.34	11/7/2020 01:42
ETHYLBENZENE	ND		1	UG/L	1	0.33	11/7/2020 01:42
M+P-XYLENE	ND		1	UG/L	1	0.55	11/7/2020 01:42
O-XYLENE	ND		1	UG/L	1	0.34	11/7/2020 01:42
TOTAL XYLENES	ND		1	UG/L	1		11/7/2020 01:42
Surr: 4-BROMOFLUOROBENZENE	103		80-120	%REC	1		11/7/2020 01:42
Surr: DIBROMOFLUOROMETHANE	102		80-120	%REC	1		11/7/2020 01:42
Surr: TOLUENE-D8	98		80-120	%REC	1		11/7/2020 01:42
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	51	11/7/2020 01:42
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 10/31/2020 PrepBy: KJS		
BROMIDE	0.19	JN	0.2	MG/L	1	0.064	10/31/2020 07:55
CHLORIDE	8.3		0.2	MG/L	1	0.076	10/31/2020 07:55
FLUORIDE	0.25		0.1	MG/L	1	0.039	10/31/2020 07:55
NITRATE/NITRITE AS N	0.19	J	0.15	MG/L	1		10/31/2020 07:55
NITRATE AS N	0.19	J	0.2	MG/L	1	0.092	10/31/2020 07:55
NITRITE AS N	ND	N	0.15	MG/L	1	0.069	10/31/2020 07:55
SULFATE	8.5		1	MG/L	1	0.53	10/31/2020 07:55
METALS BY 200.8			EPA200.8		Prep Date: 11/10/2020 PrepBy: JML		
BARIUM	0.14		0.001	MG/L	10	0.00049	11/11/2020 18:29
BORON	0.028	J	0.05	MG/L	10	0.026	11/11/2020 18:29
CALCIUM	92		1	MG/L	10	0.18	11/11/2020 18:29
IRON	ND		0.15	MG/L	10	0.071	11/11/2020 18:29
MAGNESIUM	16		0.1	MG/L	10	0.023	11/11/2020 18:29
MANGANESE	0.095		0.004	MG/L	10	0.0021	11/11/2020 18:29

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: RU 11-7 BWQ
Sample ID: Yellow Jacket Spg
Legal Location:
Collection Date: 10/29/2020 12:25

Date: 30-Nov-20
Work Order: 2010685
Lab ID: 2010685-1
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	1.7		1	MG/L	10	0.2	11/11/2020 18:29
SELENIUM	0.00076	J	0.0015	MG/L	10	0.00067	11/11/2020 18:29
SODIUM	14		1	MG/L	10	0.13	11/11/2020 18:29
STRONTIUM	0.49		0.001	MG/L	10	0.00024	11/11/2020 18:29
PH			SM4500-H		Prep Date: 11/4/2020		PrepBy: KJS
PH	7.71		0.1	pH	1		11/4/2020
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 11/4/2020		PrepBy: KJS
SPECIFIC CONDUCTIVITY	592		1	umhos/cm	1		11/4/2020
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 11/3/2020		PrepBy: LMC
TOTAL DISSOLVED SOLIDS	360		20	MG/L	1		11/3/2020
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 11/2/2020		PrepBy: LMC
TOTAL PHOSPHORUS	0.025	J	0.05	MG/L	1	0.016	11/2/2020

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: RU 11-7 BWQ
Sample ID: Trip Blank
Legal Location:
Collection Date: 9/8/2020

Date: 30-Nov-20
Work Order: 2010685
Lab ID: 2010685-2
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
GC/MS VOLATILES			SW8260_25				Prep Date: 11/6/2020 PrepBy: TWK
BENZENE	ND		1	UG/L	1	0.3	11/7/2020 02:02
TOLUENE	ND		1	UG/L	1	0.34	11/7/2020 02:02
ETHYLBENZENE	ND		1	UG/L	1	0.33	11/7/2020 02:02
M+P-XYLENE	ND		1	UG/L	1	0.55	11/7/2020 02:02
O-XYLENE	ND		1	UG/L	1	0.34	11/7/2020 02:02
TOTAL XYLENES	ND		1	UG/L	1		11/7/2020 02:02
Surr: 4-BROMOFLUOROBENZENE	107		80-120	%REC	1		11/7/2020 02:02
Surr: DIBROMOFLUOROMETHANE	102		80-120	%REC	1		11/7/2020 02:02
Surr: TOLUENE-D8	99		80-120	%REC	1		11/7/2020 02:02
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	51	11/7/2020 02:02

Client: Western Water and Land, Inc.
Project: RU 11-7 BWQ
Sample ID: Trip Blank
Legal Location:
Collection Date: 9/8/2020

Date: 30-Nov-20
Work Order: 2010685
Lab ID: 2010685-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	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: 11/30/2020 5:02

Client: Western Water and Land, Inc.

QC BATCH REPORT

Work Order: 2010685

Project: RU 11-7 BWQ

Batch ID: **HC201105-82-2** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: HC201105-82			Units: MG/L		Analysis Date: 11/18/2020 03:46				
Client ID:		Run ID: HC201116-81B			Prep Date: 11/5/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.98	1.07	8.33		84	53-120				20	
Surr: O-TERPHENYL	1.58		1.67		95	69-120					

LCSD		Sample ID: HC201105-82			Units: MG/L		Analysis Date: 11/18/2020 04:07				
Client ID:		Run ID: HC201116-81B			Prep Date: 11/5/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.87	1.07	8.33		82	53-120		6.98	2	20	
Surr: O-TERPHENYL	1.56		1.67		94	69-120			1		

MB		Sample ID: HC201105-82			Units: MG/L		Analysis Date: 11/18/2020 03:25				
Client ID:		Run ID: HC201116-81B			Prep Date: 11/5/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								
Diesel Range Organics	ND	1.1	0.54								
Surr: O-TERPHENYL	1.56			93	69-120						

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **HC201105-91-3** Instrument ID **MEE-1** Method: **RSK175**

LCS		Sample ID: HC201105-91			Units: UG/L		Analysis Date: 11/5/2020 10:30				
Client ID:		Run ID: HC201105-91A			Prep Date: 11/5/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	155	1	142		109	76-125				25	
ETHANE	288	2	267		108	70-120				25	
PROPANE	420	1	391		107	72-120				25	

LCSD		Sample ID: HC201105-91			Units: UG/L		Analysis Date: 11/5/2020 11:30				
Client ID:		Run ID: HC201105-91A			Prep Date: 11/5/2020		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		155	2	25	
ETHANE	282	2	267		106	70-120		288	2	25	
PROPANE	412	1	391		105	72-120		420	2	25	

MB		Sample ID: HC201105-91			Units: UG/L		Analysis Date: 11/5/2020 10:33				
Client ID:		Run ID: HC201105-91A			Prep Date: 11/5/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								
METHANE	ND	1	1								
ETHANE	ND	2	2								
PROPANE	ND	1	1								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **IP201110-1-4** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: IM201110-1			Units: MG/L		Analysis Date: 11/11/2020 18:12				
Client ID:		Run ID: IM201111-10A14			Prep Date: 11/10/2020		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.111	0.001	0.1		111	85-115				20	
BORON	0.999	0.05	1		100	85-115				20	
CALCIUM	10.9	1	10		109	85-115				20	
IRON	4.91	0.15	5		98	85-115				20	
MAGNESIUM	9.87	0.1	10		99	85-115				20	
MANGANESE	0.097	0.004	0.1		97	85-115				20	
POTASSIUM	4.79	1	5		96	85-115				20	
SELENIUM	0.1	0.0015	0.1		100	85-115				20	
SODIUM	10.7	1	10		107	85-115				20	
STRONTIUM	0.105	0.001	0.1		105	85-115				20	

LCSD		Sample ID: IM201110-1			Units: MG/L		Analysis Date: 11/11/2020 18:18				
Client ID:		Run ID: IM201111-10A14			Prep Date: 11/10/2020		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.108	0.001	0.1		108	85-115		0.111	2	20	
BORON	0.997	0.05	1		100	85-115		0.999	0	20	
CALCIUM	10.6	1	10		106	85-115		10.9	2	20	
IRON	4.92	0.15	5		98	85-115		4.91	0	20	
MAGNESIUM	9.86	0.1	10		99	85-115		9.87	0	20	
MANGANESE	0.1	0.004	0.1		101	85-115		0.097	4	20	
POTASSIUM	4.83	1	5		97	85-115		4.79	1	20	
SELENIUM	0.103	0.0015	0.1		103	85-115		0.1	3	20	
SODIUM	10.7	1	10		107	85-115		10.7	1	20	
STRONTIUM	0.104	0.001	0.1		104	85-115		0.105	0	20	

Client: Western Water and Land, Inc.
Work Order: 2010685
Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **IP201110-1-4** Instrument ID **ICPMS2** Method: **EPA200.8**

MB Sample ID: **FP201103-1** Units: **MG/L** Analysis Date: **11/11/2020 18:06**
Client ID: Run ID: **IM201111-10A14** Prep Date: **11/10/2020** 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	ND	0.004	0.0021	
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:

2010685-1

Client: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: VL201106-3-4 Instrument ID: HPV3 Method: SW8260_25

LCS		Sample ID: VL201106-3			Units: %REC		Analysis Date: 11/6/2020 17:56				
Client ID:		Run ID: VL201106-3A			Prep Date: 11/6/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	27.2		25		109	80-120					
Surr: DIBROMOFLUOROMETHANE	25.1		25		100	80-120					
Surr: TOLUENE-D8	23.7		25		95	80-120					
BENZENE	41.3	1	40		103	80-120				20	
TOLUENE	38.3	1	40		96	80-120				20	
ETHYLBENZENE	40.1	1	40		100	80-120				20	
M+P-XYLENE	79.1	1	80		99	80-120				20	
O-XYLENE	38.9	1	40		97	80-120				20	

LCSD		Sample ID: VL201106-3			Units: %REC		Analysis Date: 11/6/2020 18:37				
Client ID:		Run ID: VL201106-3A			Prep Date: 11/6/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	26.7		25		107	80-120			2		
Surr: DIBROMOFLUOROMETHANE	24.9		25		100	80-120			1		
Surr: TOLUENE-D8	24.1		25		96	80-120			2		
BENZENE	42.4	1	40		106	80-120		41.3	3	20	
TOLUENE	40.1	1	40		100	80-120		38.3	5	20	
ETHYLBENZENE	41.6	1	40		104	80-120		40.1	4	20	
M+P-XYLENE	83.1	1	80		104	80-120		79.1	5	20	
O-XYLENE	41.9	1	40		105	80-120		38.9	7	20	

MB		Sample ID: VL201106-3			Units: %REC		Analysis Date: 11/6/2020 19:58				
Client ID:		Run ID: VL201106-3A			Prep Date: 11/6/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								Qual
Surr: 4-BROMOFLUOROBENZENE	26.1				104	80-120					
Surr: DIBROMOFLUOROMETHANE	25				100	80-120					
Surr: TOLUENE-D8	24.6				98	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: 2010685-1 2010685-2

Client: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: VL201106-3-5 Instrument ID: HPV3 Method: SW8260_25

LCS		Sample ID: VL201106-33			Units: UG/L		Analysis Date: 11/6/2020 18:17				
Client ID:		Run ID: VL201106-3A			Prep Date: 11/6/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1100	100	1000		110	75-121				20	

LCSD		Sample ID: VL201106-33			Units: UG/L		Analysis Date: 11/6/2020 19:17				
Client ID:		Run ID: VL201106-3A			Prep Date: 11/6/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	999	100	1000		100	75-121		1100	9	20	

MB		Sample ID: VL201106-3			Units: UG/L		Analysis Date: 11/6/2020 19:58				
Client ID:		Run ID: VL201106-3A			Prep Date: 11/6/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								
GASOLINE RANGE ORGANICS	ND	100	51								

The following samples were analyzed in this batch:

2010685-1	2010685-2
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Client: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **AK201110-1-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK201110-1			Units: MG/L		Analysis Date: 11/10/2020				
Client ID:		Run ID: AK201110-1a1			Prep Date: 11/10/2020		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	101	5	100		101	85-115				15	

LCSD		Sample ID: AK201110-1			Units: MG/L		Analysis Date: 11/10/2020				
Client ID:		Run ID: AK201110-1a1			Prep Date: 11/10/2020		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	103	5	100		102	85-115		101	2	15	

MB		Sample ID: AK201110-1			Units: MG/L		Analysis Date: 11/10/2020				
Client ID:		Run ID: AK201110-1a1			Prep Date: 11/10/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								
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: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **IC201031-1-1** Instrument ID **IC3** Method: **EPA300.0**

LCS		Sample ID: IC201031-1			Units: MG/L		Analysis Date: 10/31/2020 07:02				
Client ID:		Run ID: IC201031-1a2			Prep Date: 10/31/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	9.9	0.2	10		99	90-110				15	
CHLORIDE	9.87	0.2	10		99	90-110				15	
FLUORIDE	4.85	0.1	5		97	90-110				15	
NITRATE AS N	9.86	0.2	10		99	90-110				15	
NITRITE AS N	4.86	0.15	4.99		98	90-110				15	
SULFATE	49	1	50		98	90-110				15	

LCSD		Sample ID: IC201031-1			Units: MG/L		Analysis Date: 10/31/2020 09:14				
Client ID:		Run ID: IC201031-1a2			Prep Date: 10/31/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	9.84	0.2	10		98	90-110		9.9	1	15	
CHLORIDE	10.3	0.2	10		103	90-110		9.87	4	15	
FLUORIDE	4.88	0.1	5		98	90-110		4.85	1	15	
NITRATE AS N	10.1	0.2	10		101	90-110		9.86	3	15	
NITRITE AS N	4.97	0.15	4.99		100	90-110		4.86	2	15	
SULFATE	49.1	1	50		98	90-110		49	0	15	

MB		Sample ID: IC201031-1			Units: MG/L		Analysis Date: 10/31/2020 07:16				
Client ID:		Run ID: IC201031-1a2			Prep Date: 10/31/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								
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								

MS		Sample ID: 2010685-1			Units: MG/L		Analysis Date: 10/31/2020 08:08				
Client ID: Yellow Jacket Spg		Run ID: IC201031-1a2			Prep Date: 10/31/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	4.37	0.2	5	0.19	84	85-115				15	N
CHLORIDE	13.2	0.2	5	8.3	98	85-115				15	
FLUORIDE	2.1	0.1	2	0.25	93	85-115				15	
NITRATE AS N	4.9	0.2	5	0.19	94	85-115				15	
NITRITE AS N	1.24	0.15	1.99	0.15	62	85-115				15	N
SULFATE	27.4	1	20	8.5	94	85-115				15	

Client: Western Water and Land, Inc.
Work Order: 2010685
Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **IC201031-1-1**

Instrument ID **IC3**

Method: **EPA300.0**

The following samples were analyzed in this batch:

2010685-1

Client: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **pH201104-1-3** Instrument ID **pH-2** Method: **SM4500-H**

CCV		Sample ID: CCV1			Units: pH		Analysis Date: 11/4/2020				
Client ID:		Run ID: pH201104-1a1			Prep Date: 11/4/2020		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					

CCV		Sample ID: CCV2			Units: pH		Analysis Date: 11/4/2020				
Client ID:		Run ID: pH201104-1a1			Prep Date: 11/4/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.06	0.1	7			6.9-7.1					

ICV		Sample ID: ICV			Units: pH		Analysis Date: 11/4/2020				
Client ID:		Run ID: pH201104-1a1			Prep Date: 11/4/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	6.96	0.1	7			6.9-7.1					

The following samples were analyzed in this batch:

2010685-1

Client: Western Water and Land, Inc.
Work Order: 2010685
Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **SC201104-1-1** Instrument ID **pH-2** Method: **SM2510B**

CCV	Sample ID: CCV						Units: umhos/cm	Analysis Date: 11/4/2020			
Client ID:		Run ID: SC201104-1a1			Prep Date: 11/4/2020			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1510	1	1410		107	90-110					

ICV	Sample ID: ICV						Units: umhos/cm	Analysis Date: 11/4/2020			
Client ID:		Run ID: SC201104-1a1			Prep Date: 11/4/2020			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	778	1	718		108	90-110					

The following samples were analyzed in this batch:

2010685-1

Client: Western Water and Land, Inc.
 Work Order: 2010685
 Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: TD201103-1-1 Instrument ID Balance Method: SM2540C

LCS		Sample ID: TD201103-1			Units: MG/L		Analysis Date: 11/3/2020				
Client ID:		Run ID: TD201103-1A1			Prep Date: 11/3/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	416	20	400		104	85-115				14	

LCSD		Sample ID: TD201103-1			Units: MG/L		Analysis Date: 11/3/2020				
Client ID:		Run ID: TD201103-1A1			Prep Date: 11/3/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	411	20	400		103	85-115		416	1	14	

MB		Sample ID: TD201103-1			Units: MG/L		Analysis Date: 11/3/2020				
Client ID:		Run ID: TD201103-1A1			Prep Date: 11/3/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								
TOTAL DISSOLVED SOLIDS	ND	20									

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
Work Order: 2010685
Project: RU 11-7 BWQ

QC BATCH REPORT

Batch ID: **TP201102-1-2** Instrument ID: **Spec** Method: **EPA365.2**

LCS		Sample ID: TP201102-1			Units: MG/L		Analysis Date: 11/2/2020				
Client ID:		Run ID: TP201102-1A2			Prep Date: 11/2/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.46	0.05	0.5		92	80-120				20	

LCSD		Sample ID: TP201102-1			Units: MG/L		Analysis Date: 11/2/2020				
Client ID:		Run ID: TP201102-1A2			Prep Date: 11/2/2020		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.495	0.05	0.5		99	80-120		0.46	7	20	

MB		Sample ID: TP201102-1			Units: MG/L		Analysis Date: 11/2/2020				
Client ID:		Run ID: TP201102-1A2			Prep Date: 11/2/2020		DF: 1				
Analyte	Result	ReportLimit	MDL								
TOTAL PHOSPHORUS	ND	0.05	0.016								

The following samples were analyzed in this batch: 2010685-1