



1708624

GC/MS Volatiles:

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

All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria with the following exception:

Spiked Compound	QC Sample	Direction
Benzene	LCS	High

The above compound was not detected in the samples. No further action was taken.

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.

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) and matrix spike duplicate (MSD) were prepared and analyzed with the anion batch. In order to achieve lower reporting limits for bromide, fluoride, nitrate as N, nitrite as N and sulfate, the sample was reanalyzed at a lower dilution. The MS and MSD were not reanalyzed. All guidance criteria for precision and accuracy were met for chloride.

All remaining acceptance criteria were met.

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
 Project: TEP TR 32-28-597 BWQ
 Sample ID: GETTY 12C
 Legal Location:
 Collection Date: 8/29/2017 14:34

Date: 26-Sep-17
 Work Order: 1708624
 Lab ID: 1708624-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B				
BICARBONATE AS CaCO3	270		20	MG/L	1		9/11/2017
CARBONATE AS CaCO3	ND		20	MG/L	1		9/11/2017
TOTAL ALKALINITY AS CaCO3	270		20	MG/L	1		9/11/2017
BIOLOGICAL ACTIVITY REACTION TEST			BART				
IRON RELATED BACTERIA	35000		1	cfu/ml	1		9/13/2017
SLIME FORMING BACTERIA	350000		1	cfu/ml	1		9/13/2017
SULFATE REDUCING BACTERIA	700000		1	cfu/ml	1		9/13/2017
DIESEL RANGE ORGANICS			SW8015M				
Diesel Range Organics	ND		0.6	MG/L	1	0.17	9/5/2017 21:29
Surr: O-TERPHENYL	109		63-126	%REC	1		9/5/2017 21:29
DISSOLVED GASSES			RSK175				
METHANE	ND		1	UG/L	1	1	9/1/2017 14:37
ETHANE	ND		2	UG/L	1	2	9/1/2017 14:37
PROPANE	ND		1	UG/L	1	1	9/1/2017 14:37
GC/MS VOLATILES			SW8260_25				
BENZENE	ND		1	UG/L	1	0.32	9/6/2017 19:01
TOLUENE	ND		1	UG/L	1	0.31	9/6/2017 19:01
ETHYLBENZENE	ND		1	UG/L	1	0.31	9/6/2017 19:01
M+P-XYLENE	ND		1	UG/L	1	0.31	9/6/2017 19:01
O-XYLENE	ND		1	UG/L	1	0.31	9/6/2017 19:01
TOTAL XYLENES	ND		1	UG/L	1		9/6/2017 19:01
Surr: 4-BROMOFLUOROBENZENE	101		85-115	%REC	1		9/6/2017 19:01
Surr: DIBROMOFLUOROMETHANE	109		84-118	%REC	1		9/6/2017 19:01
Surr: TOLUENE-D8	91		85-115	%REC	1		9/6/2017 19:01
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	47	9/6/2017 19:01
ION CHROMATOGRAPHY			EPA300.0				
BROMIDE	0.32		0.2	MG/L	1	0.06	8/30/2017 23:59
CHLORIDE	53		2	MG/L	10	0.6	8/31/2017 00:14
FLUORIDE	0.12		0.1	MG/L	1	0.03	8/30/2017 23:59
NITRATE/NITRITE AS N	0.4		0.1	MG/L	1		8/30/2017 23:59
NITRATE AS N	0.4		0.2	MG/L	1	0.06	8/30/2017 23:59
NITRITE AS N	ND		0.1	MG/L	1	0.03	8/30/2017 23:59
SULFATE	53		1	MG/L	1	0.15	8/30/2017 23:59
METALS BY 200.8			EPA200.8				
BARIUM	0.11		0.001	MG/L	10	0.0006	9/25/2017 16:40
BORON	0.031	J	0.05	MG/L	10	0.015	9/25/2017 16:40
CALCIUM	65		1	MG/L	10	0.3	9/25/2017 16:40
IRON	ND		0.1	MG/L	10	0.044	9/25/2017 16:40
MAGNESIUM	32		0.1	MG/L	10	0.03	9/25/2017 16:40
MANGANESE	0.0098		0.002	MG/L	10	0.0006	9/25/2017 16:40

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: TEP TR 32-28-597 BWQ
Sample ID: GETTY 12C
Legal Location:
Collection Date: 8/29/2017 14:34

Date: 26-Sep-17
Work Order: 1708624
Lab ID: 1708624-1
Matrix: WATER

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	0.5	J	1	MG/L	10	0.3	9/25/2017 16:40
SELENIUM	0.00047	J	0.001	MG/L	10	0.0003	9/25/2017 16:40
SODIUM	53		1	MG/L	10	0.3	9/25/2017 16:40
STRONTIUM	1.2		0.001	MG/L	10	0.00049	9/25/2017 16:40
PH			SM4500-H		Prep Date: 8/30/2017		PrepBy: HMA
PH	7.62		0.1	pH	1		8/30/2017
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 8/30/2017		PrepBy: HMA
SPECIFIC CONDUCTIVITY	787		1	umhos/cm	1		8/30/2017
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 9/5/2017		PrepBy: SKC
TOTAL DISSOLVED SOLIDS	440		20	MG/L	1		9/6/2017
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 9/23/2017		PrepBy: HMA
TOTAL PHOSPHORUS	0.088		0.05	MG/L	1	0.045	9/23/2017

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SAMPLE SUMMARY REPORT

Client: Western Water and Land, Inc.
Project: TEP TR 32-28-597 BWQ
Sample ID: TRIP BLANK
Legal Location:
Collection Date: 8/29/2017

Date: 26-Sep-17
Work Order: 1708624
Lab ID: 1708624-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
GC/MS VOLATILES			SW8260_25		Prep Date: 9/6/2017		PrepBy: JXK
BENZENE	ND		1	UG/L	1	0.32	9/6/2017 17:03
TOLUENE	ND		1	UG/L	1	0.31	9/6/2017 17:03
ETHYLBENZENE	ND		1	UG/L	1	0.31	9/6/2017 17:03
M+P-XYLENE	ND		1	UG/L	1	0.31	9/6/2017 17:03
O-XYLENE	ND		1	UG/L	1	0.31	9/6/2017 17:03
TOTAL XYLENES	ND		1	UG/L	1		9/6/2017 17:03
Surr: 4-BROMOFLUOROBENZENE	101		85-115	%REC	1		9/6/2017 17:03
Surr: DIBROMOFLUOROMETHANE	106		84-118	%REC	1		9/6/2017 17:03
Surr: TOLUENE-D8	92		85-115	%REC	1		9/6/2017 17:03
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	47	9/6/2017 17:03

Client: Western Water and Land, Inc.
Project: TEP TR 32-28-597 BWQ
Sample ID: TRIP BLANK
Legal Location:
Collection Date: 8/29/2017

Date: 26-Sep-17
Work Order: 1708624
Lab ID: 1708624-2
Matrix: WATER
Percent Moisture:

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

Radiochemistry:

- 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.
- LT - Result is less than requested MDC but greater than achieved MDC.
- 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: 9/26/2017 2:04:

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **HC170901-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC170901-9** Units: **UG/L** Analysis Date: **9/1/2017 14:14**
 Client ID: Run ID: **HC170901-9A** Prep Date: **9/1/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	139	1	142		98	80-120				25	
ETHANE	271	2	267		102	80-120				25	
PROPANE	392	1	391		100	80-120				25	

LCSD Sample ID: **HC170901-9** Units: **UG/L** Analysis Date: **9/1/2017 14:51**
 Client ID: Run ID: **HC170901-9A** Prep Date: **9/1/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	131	1	142		92	80-120		139	6	25	
ETHANE	254	2	267		95	80-120		271	7	25	
PROPANE	367	1	391		94	80-120		392	7	25	

MB Sample ID: **HC170901-9** Units: **UG/L** Analysis Date: **9/1/2017 14:17**
 Client ID: Run ID: **HC170901-9A** Prep Date: **9/1/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	ND	1									
ETHANE	ND	2									
PROPANE	ND	1									

The following samples were analyzed in this batch:

1708624-1

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **HC170905-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: HC170905-100			Units: MG/L		Analysis Date: 9/5/2017 19:09				
Client ID:		Run ID: HC170905-8A			Prep Date: 9/5/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.08	0.606	8.42		96	36-150				20	
Surr: O-TERPHENYL	0.794		0.842		94	63-126					

LCSD		Sample ID: HC170905-100			Units: MG/L		Analysis Date: 9/5/2017 19:29				
Client ID:		Run ID: HC170905-8A			Prep Date: 9/5/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.75	0.602	8.36		105	36-150		8.08	8	20	
Surr: O-TERPHENYL	0.87		0.836		104	63-126			9		

MB		Sample ID: HC170905-100			Units: MG/L		Analysis Date: 9/5/2017 18:49				
Client ID:		Run ID: HC170905-8A			Prep Date: 9/5/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.6									
Surr: O-TERPHENYL	0.832		0.84		99	63-126					

The following samples were analyzed in this batch:

1708624-1

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **IP170906-4-3** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: IM170906-4			Units: MG/L		Analysis Date: 9/25/2017 15:46				
Client ID:		Run ID: IM170925-10A4			Prep Date: 9/6/2017		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.0986	0.001	0.1		99	85-115				20	
BORON	0.918	0.05	1		92	85-115				20	
CALCIUM	9.9	1	10		99	85-115				20	
IRON	5.04	0.1	5		101	85-115				20	
MAGNESIUM	10.4	0.1	10		104	85-115				20	
MANGANESE	0.0969	0.002	0.1		97	85-115				20	
POTASSIUM	4.83	1	5.02		96	85-115				20	
SELENIUM	0.0974	0.001	0.1		97	85-115				20	
SODIUM	9.89	1	10		99	85-115				20	
STRONTIUM	0.092	0.001	0.1		92	85-115				20	

MB		Sample ID: FP170831-4			Units: MG/L		Analysis Date: 9/25/2017 15:43				
Client ID:		Run ID: IM170925-10A4			Prep Date: 9/6/2017		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	ND	0.001									
BORON	ND	0.05									
CALCIUM	ND	1									
IRON	ND	0.1									
MAGNESIUM	ND	0.1									
MANGANESE	ND	0.002									
POTASSIUM	ND	1									
SELENIUM	ND	0.001									
SODIUM	ND	1									
STRONTIUM	ND	0.001									

The following samples were analyzed in this batch:

1708624-1

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: VL170906-4-1 Instrument ID: HPV4 Method: SW8260_25

LCS		Sample ID: VL170906-4			Units: %REC		Analysis Date: 9/6/2017 11:08				
Client ID:		Run ID: VL170906-4A			Prep Date: 9/6/2017		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	85-115					
Surr: DIBROMOFLUOROMETHANE	25.8		25		103	84-118					
Surr: TOLUENE-D8	23.3		25		93	85-115					
BENZENE	12	1	10		120	83-117				20	*
TOLUENE	10.3	1	10		103	82-113				20	
ETHYLBENZENE	10.3	1	10		103	81-113				20	
M+P-XYLENE	20.6	1	20		103	82-115				20	
O-XYLENE	10.3	1	10		103	81-115				20	

LCSD		Sample ID: VL170906-4			Units: %REC		Analysis Date: 9/6/2017 11:32				
Client ID:		Run ID: VL170906-4A			Prep Date: 9/6/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.5		25		102	85-115			3		
Surr: DIBROMOFLUOROMETHANE	26.9		25		107	84-118			4		
Surr: TOLUENE-D8	23.4		25		94	85-115			0		
BENZENE	11.5	1	10		115	83-117		12	4	20	
TOLUENE	9.87	1	10		99	82-113		10.3	4	20	
ETHYLBENZENE	10.2	1	10		102	81-113		10.3	1	20	
M+P-XYLENE	20.6	1	20		103	82-115		20.6	0	20	
O-XYLENE	10	1	10		100	81-115		10.3	2	20	

MB		Sample ID: VL170906-4			Units: %REC		Analysis Date: 9/6/2017 13:53				
Client ID:		Run ID: VL170906-4A			Prep Date: 9/6/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	25.2		25		101	85-115					
Surr: DIBROMOFLUOROMETHANE	26.4		25		105	84-118					
Surr: TOLUENE-D8	22.8		25		91	85-115					
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:

1708624-1 1708624-2

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **VL170906-4-2** Instrument ID **HPV4** Method: **SW8260_25**

LCS		Sample ID: VL170906-8					Units: UG/L	Analysis Date: 9/6/2017 12:19			
Client ID:		Run ID: VL170906-4A				Prep Date: 9/6/2017		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1090	100	1000		109	80-120				20	

LCSD		Sample ID: VL170906-8					Units: UG/L	Analysis Date: 9/6/2017 12:43			
Client ID:		Run ID: VL170906-4A				Prep Date: 9/6/2017		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1060	100	1000		106	80-120		1090	3	20	

MB		Sample ID: VL170906-4					Units: UG/L	Analysis Date: 9/6/2017 13:53			
Client ID:		Run ID: VL170906-4A				Prep Date: 9/6/2017		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	100									

The following samples were analyzed in this batch: 1708624-1 1708624-2

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **AK170911-2-2** Instrument ID **NONE** Method: **SM2320B**

DUP Sample ID: **1708624-1** Units: **MG/L** Analysis Date: **9/11/2017**
 Client ID: **GETTY 12C** Run ID: **AK170911-2A1** Prep Date: **9/11/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	270	20						270	1	15	
CARBONATE AS CaCO3	ND	20						20		15	
TOTAL ALKALINITY AS CaCO3	270	20						270	1	15	

LCS Sample ID: **AK170911-2** Units: **MG/L** Analysis Date: **9/11/2017**
 Client ID: Run ID: **AK170911-2A1** Prep Date: **9/11/2017** 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	99.3	5	100		99	85-115				15	

MB Sample ID: **AK170911-2** Units: **MG/L** Analysis Date: **9/11/2017**
 Client ID: Run ID: **AK170911-2A1** Prep Date: **9/11/2017** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	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: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **IC170830-2-1** Instrument ID **IC3** Method: **EPA300.0**

LCS		Sample ID: IC170830-2			Units: MG/L		Analysis Date: 8/30/2017 23:43				
Client ID:		Run ID: IC170830-1a4			Prep Date: 8/30/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	4.69	0.2	5		94	90-110				15	
CHLORIDE	4.92	0.2	5		98	90-110				15	
FLUORIDE	1.87	0.1	2		94	90-110				15	
NITRATE AS N	5.02	0.2	5		100	90-110				15	
NITRITE AS N	1.99	0.1	2		99	90-110				15	
SULFATE	20.6	1	20		103	90-110				15	

MB		Sample ID: IC170830-2			Units: MG/L		Analysis Date: 8/30/2017 23:27				
Client ID:		Run ID: IC170830-1a4			Prep Date: 8/30/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	ND	0.2									
CHLORIDE	ND	0.2									
FLUORIDE	ND	0.1									
NITRATE AS N	ND	0.2									
NITRITE AS N	ND	0.1									
SULFATE	0.19	1									J

MS		Sample ID: 1708624-1			Units: MG/L		Analysis Date: 8/31/2017 00:30				
Client ID: GETTY 12C		Run ID: IC170830-1a4			Prep Date: 8/30/2017		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	106	2	50	53	106	85-115				15	

MSD		Sample ID: 1708624-1			Units: MG/L		Analysis Date: 8/31/2017 01:16				
Client ID: GETTY 12C		Run ID: IC170830-1a4			Prep Date: 8/30/2017		DF: 10				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHLORIDE	105	2	50	53	104	85-115		106	1	15	

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **PH170830-1-2** Instrument ID **pH-1** Method: **SM4500-H**

CCV		Sample ID: CCV1			Units: pH		Analysis Date: 8/30/2017				
Client ID:		Run ID: PH170830-1A1			Prep Date: 8/30/2017		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: 8/30/2017				
Client ID:		Run ID: PH170830-1A1			Prep Date: 8/30/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	6.99	0.1	7			6.9-7.1					

DUP		Sample ID: 1708624-1			Units: pH		Analysis Date: 8/30/2017				
Client ID: GETTY 12C		Run ID: PH170830-1A1			Prep Date: 8/30/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.76	0.1							7.62	0.2	

ICV		Sample ID: ICV			Units: pH		Analysis Date: 8/30/2017				
Client ID:		Run ID: PH170830-1A1			Prep Date: 8/30/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.03	0.1	7			6.95-7.05					

The following samples were analyzed in this batch:

1708624-1

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **SC170830-1-1** Instrument ID **pH-2** Method: **SM2510B**

CCV	Sample ID: CCV	Units: umhos/cm				Analysis Date: 8/30/2017					
Client ID:		Run ID: SC170830-1A1				Prep Date: 8/30/2017		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1410	1	1410		100	71.7-1554					

DUP	Sample ID: 1708624-1	Units: umhos/cm				Analysis Date: 8/30/2017					
Client ID: GETTY 12C		Run ID: SC170830-1A1				Prep Date: 8/30/2017		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	783	1						787	1	10	

ICV	Sample ID: ICV	Units: umhos/cm				Analysis Date: 8/30/2017					
Client ID:		Run ID: SC170830-1A1				Prep Date: 8/30/2017		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	694	1	718		97	46.2-789.1					

The following samples were analyzed in this batch:

1708624-1

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: **TD170905-1-2** Instrument ID **Balance** Method: **SM2540C**

LCS		Sample ID: TD170905-1			Units: MG/L		Analysis Date: 9/6/2017				
Client ID:		Run ID: TD170906-1A1			Prep Date: 9/5/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	378	20	400		95	85-115				5	

LCSD		Sample ID: TD170905-1			Units: MG/L		Analysis Date: 9/6/2017				
Client ID:		Run ID: TD170906-1A1			Prep Date: 9/5/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	391	20	400		98	85-115		378	3	5	

MB		Sample ID: TD170905-1			Units: MG/L		Analysis Date: 9/6/2017				
Client ID:		Run ID: TD170906-1A1			Prep Date: 9/5/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20									

The following samples were analyzed in this batch:

1708624-1

Client: Western Water and Land, Inc.
 Work Order: 1708624
 Project: TEP TR 32-28-597 BWQ

QC BATCH REPORT

Batch ID: TP170923-1-1 Instrument ID Spec Method: EPA365.2

LCS		Sample ID: TP170923-1			Units: MG/L		Analysis Date: 9/23/2017				
Client ID:		Run ID: TP170923-1A2			Prep Date: 9/23/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.459	0.05	0.5		92	80-120				20	

LCSD		Sample ID: TP170923-1			Units: MG/L		Analysis Date: 9/23/2017				
Client ID:		Run ID: TP170923-1A2			Prep Date: 9/23/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.469	0.05	0.5		94	80-120		0.459	2	20	

MB		Sample ID: TP170923-1			Units: MG/L		Analysis Date: 9/23/2017				
Client ID:		Run ID: TP170923-1A2			Prep Date: 9/23/2017		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05									

The following samples were analyzed in this batch: