1605077

GC/MS Volatiles:
The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The sample was 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 2 prior to analysis.

The method blank associated with this digestion batch was below the reporting limit for the requested analytes, with the exception of strontium. The associated samples contained more than ten times the concentration of strontium detected in the method blank, so no further action was taken.

All remaining 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

Analyte	Method	SOP #
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

The sample was prepared and analyzed within the established hold time for each analysis except nitrate as N and nitrite as N. The sample was received with very little hold time remaining.

A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with the anions and total phosphorus batches. All guidance criteria for precision and accuracy were met. with the following exceptions:

Analyte	Sample ID
Nitrite as N	1605077-1 MS/MSD

The native sample results are flagged for nitrite as N. The laboratory control sample indicates that the procedure was in control.

Matrix spike recoveries could not be evaluated for the following analytes:

Analyte	Sample ID
Chloride	1605077-1
Sulfate	1605077-1

The chloride and sulfate concentration in the native sample was above the analytical range; therefore accurate quantitation of MS/MSD recoveries were not possible. The LCS, ICV, and CCV results indicate the procedure was in control for this analyte.

All remaining acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1605077
Client Name: Western Water and Land, Inc.
Client Project Name: Nolte 14-44 BWQ
Client Project Number:
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Metcalf 69030F	1605077-1		WATER	03-May-16	11:10

Client: Western Water and Land, Inc. **Date:** *24-May-16*
Project: Nolte 14-44 BWQ **Work Order:** 1605077
Sample ID: Metcalf 69030F **Lab ID:** 1605077-1
Legal Location: **Matrix:** WATER
Collection Date: 5/3/2016 11:10 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **5/10/2016**		PrepBy: **KLP**
BICARBONATE AS CaCO3	**650**		**20**	**MG/L**	1		5/10/2016
CARBONATE AS CaCO3	**200**		**20**	**MG/L**	1		5/10/2016
TOTAL ALKALINITY AS CaCO3	**840**		**20**	**MG/L**	1		5/10/2016
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **5/9/2016**		PrepBy: **CDR**
IRON RELATED BACTERIA	**9000**		**1**	**cfu/ml**	1		5/17/2016
SLIME FORMING BACTERIA	**12500**		**1**	**cfu/ml**	1		5/17/2016
SULFATE REDUCING BACTERIA	**700000**		**1**	**cfu/ml**	1		5/17/2016
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **5/10/2016**		PrepBy: **JFN**
Diesel Range Organics	ND		0.57	MG/L	1	0.17	5/10/2016 17:30
Surr: O-TERPHENYL	*97*		*63-126*	*%REC*	1		5/10/2016 17:30
DISSOLVED GASSES			**RSK175**		Prep Date: **5/10/2016**		PrepBy: **JFN**
METHANE	**1.4**		**1**	**UG/L**	1	1	5/10/2016 13:34
ETHANE	ND		2	UG/L	1	2	5/10/2016 13:34
PROPANE	ND		1	UG/L	1	1	5/10/2016 13:34
GC/MS VOLATILES			**SW8260_25**		Prep Date: **5/11/2016**		PrepBy: **JXK**
BENZENE	ND		1	UG/L	1	0.3	5/11/2016 15:44
TOLUENE	ND		1	UG/L	1	0.3	5/11/2016 15:44
ETHYLBENZENE	ND		1	UG/L	1	0.3	5/11/2016 15:44
M+P-XYLENE	ND		1	UG/L	1	0.3	5/11/2016 15:44
O-XYLENE	ND		1	UG/L	1	0.3	5/11/2016 15:44
TOTAL XYLENES	ND		1	UG/L	1		5/11/2016 15:44
Surr: 4-BROMOFLUOROBENZENE	*103*		*85-115*	*%REC*	1		5/11/2016 15:44
Surr: DIBROMOFLUOROMETHANE	*100*		*84-118*	*%REC*	1		5/11/2016 15:44
Surr: TOLUENE-D8	*100*		*85-115*	*%REC*	1		5/11/2016 15:44
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	100	5/11/2016 15:44
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **5/5/2016**		PrepBy: **JFN**
BROMIDE	**1.3**	J	**2**	**MG/L**	10	0.6	5/5/2016 19:03
CHLORIDE	**380**		**12**	**MG/L**	62.5	3.8	5/5/2016 17:17
FLUORIDE	**0.69**	J	**1**	**MG/L**	10	0.3	5/5/2016 19:03
NITRATE/NITRITE AS N	ND		0.1	MG/L	1		5/5/2016 19:03
NITRATE AS N	ND		2	MG/L	10	0.6	5/5/2016 19:03
NITRITE AS N	ND		1	MG/L	10	0.3	5/5/2016 19:03
SULFATE	**2800**		**62**	**MG/L**	62.5	19	5/5/2016 17:17
METALS BY 200.8			**EPA200.8**		Prep Date: **5/10/2016**		PrepBy: **CDR**
BARIUM	**0.011**		**0.001**	**MG/L**	10	0.00016	5/17/2016 17:49
BORON	**0.65**		**0.05**	**MG/L**	10	0.012	5/17/2016 17:49
CALCIUM	**31**		**1**	**MG/L**	10	0.068	5/16/2016 22:14
IRON	**0.029**	J	**0.1**	**MG/L**	10	0.0081	5/16/2016 22:14
MAGNESIUM	**390**		**0.1**	**MG/L**	10	0.018	5/16/2016 22:14
MANGANESE	**0.0071**		**0.002**	**MG/L**	10	0.00034	5/16/2016 22:14

Client: Western Water and Land, Inc. **Date:** *24-May-16*
Project: Nolte 14-44 BWQ **Work Order:** 1605077
Sample ID: Metcalf 69030F **Lab ID:** 1605077-1
Legal Location: **Matrix:** WATER
Collection Date: 5/3/2016 11:10 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	**10**		**1**	**MG/L**	10	0.29	5/16/2016 22:14
SELENIUM	**0.00067**	J	**0.001**	**MG/L**	10	0.00066	5/16/2016 22:14
SODIUM	**1200**		**1**	**MG/L**	10	0.2	5/17/2016 17:49
STRONTIUM	**0.5**		**0.001**	**MG/L**	10	0.0003	5/16/2016 22:14
PH			**SM4500-H**		Prep Date: **5/7/2016**		PrepBy: **CBA**
PH	**9.1**		**0.1**	**pH**	1		5/7/2016
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **5/7/2016**		PrepBy: **CBA**
SPECIFIC CONDUCTIVITY	**6170**		**1**	**pH**	1		5/7/2016
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **5/6/2016**		PrepBy: **KLP**
TOTAL DISSOLVED SOLIDS	**4900**		**200**	**MG/L**	1		5/10/2016
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **5/6/2016**		PrepBy: **KLP**
TOTAL PHOSPHORUS	**0.029**	J	**0.05**	**MG/L**	1	0.015	5/6/2016

Client:	Western Water and Land, Inc.	**Date:**	*24-May-16*
Project:	Nolte 14-44 BWQ	**Work Order:**	1605077
Sample ID:	Metcalf 69030F	**Lab ID:**	1605077-1
Legal Location:		**Matrix:**	WATER
Collection Date:	5/3/2016 11:10	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed

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

Batch ID: **HC160510-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC160510-100** Units: **MG/L** Analysis Date: **5/10/2016 16:04**

Client ID: Run ID: **HC160510-7A** Prep Date: **5/10/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	6.66	0.567	7.87		85	36-150				20	
Surr: O-TERPHENYL	0.768		0.787		98	63-126					

MB Sample ID: **HC160510-100** Units: **MG/L** Analysis Date: **5/10/2016 15:35**

Client ID: Run ID: **HC160510-7A** Prep Date: **5/10/2016** 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	0.56									
Surr: O-TERPHENYL	0.752		0.781		96	63-126					

The following samples were analyzed in this batch: 1605077-1

Client: Western Water and Land, Inc.
Work Order: 1605077
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **HC160510-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC160510-9** Units: **UG/L** Analysis Date: **5/10/2016 12:45**
Client ID: Run ID: **HC160510-9A** Prep Date: **5/10/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	141	1	142		99	80-120				25	
ETHANE	268	2	267		101	80-120				25	
PROPANE	383	1	391		98	80-120				25	

LCSD Sample ID: **HC160510-9** Units: **UG/L** Analysis Date: **5/10/2016 13:44**
Client ID: Run ID: **HC160510-9A** Prep Date: **5/10/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	150	1	142		106	80-120		141	6	25	
ETHANE	284	2	267		106	80-120		268	6	25	
PROPANE	410	1	391		105	80-120		383	7	25	

MB Sample ID: **HC160510-9** Units: **UG/L** Analysis Date: **5/10/2016 12:48**
Client ID: Run ID: **HC160510-9A** Prep Date: **5/10/2016** 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: 1605077-1

Batch ID: **IP160510-1-4** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **IM160510-1** Units: **MG/L** Analysis Date: **5/16/2016 20:46**

Client ID: Run ID: **IM160516-10A8** Prep Date: **5/10/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	9.78	1	10		98	85-115				20	
IRON	4.88	0.1	5		98	85-115				20	
MAGNESIUM	9.71	0.1	10		97	85-115				20	
MANGANESE	0.0972	0.002	0.1		97	85-115				20	
POTASSIUM	4.57	1	5		91	85-115				20	
SELENIUM	0.115	0.001	0.1		115	85-115				20	
STRONTIUM	0.101	0.001	0.1		101	85-115				20	

MB Sample ID: **FP160510-1** Units: **MG/L** Analysis Date: **5/16/2016 20:37**

Client ID: Run ID: **IM160516-10A8** Prep Date: **5/10/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CALCIUM	0.17	1									J
IRON	ND	0.1									
MAGNESIUM	ND	0.1									
MANGANESE	-0.00036	0.002									J
POTASSIUM	ND	1									
SELENIUM	ND	0.001									
STRONTIUM	0.001	0.001									

The following samples were analyzed in this batch: 1605077-1

QC BATCH REPORT

Batch ID: **IP160510-1-4** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **IM160510-1** Units: **MG/L** Analysis Date: **5/17/2016 17:41**

Client ID: Run ID: **IM160517-12A6** Prep Date: **5/10/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.103	0.001	0.1		103	85-115				20	
BORON	1.01	0.05	1		101	85-115				20	
SODIUM	10.3	1	10		103	85-115				20	

MB Sample ID: **FP160510-1** Units: **MG/L** Analysis Date: **5/17/2016 17:26**

Client ID: Run ID: **IM160517-12A6** Prep Date: **5/10/2016** 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									
SODIUM	ND	1									

The following samples were analyzed in this batch: 1605077-1

Batch ID: **VL160511-3-1** Instrument ID **HPV1** Method: **SW8260_25**

LCS Sample ID: **VL160511-3** Units: **%REC** Analysis Date: **5/11/2016 09:38**

Client ID: Run ID: **VL160511-3A** Prep Date: **5/11/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	23.9		25		96	85-115					
Surr: DIBROMOFLUOROMETHANE	25.1		25		101	84-118					
Surr: TOLUENE-D8	25		25		100	85-115					
BENZENE	11.2	1	10		112	83-117				20	
TOLUENE	10.4	1	10		104	82-113				20	
ETHYLBENZENE	10.8	1	10		108	81-113				20	
M+P-XYLENE	19.8	1	20		99	82-115				20	
O-XYLENE	10.2	1	10		102	81-115				20	

LCSD Sample ID: **VL160511-3** Units: **%REC** Analysis Date: **5/11/2016 09:59**

Client ID: Run ID: **VL160511-3A** Prep Date: **5/11/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.3		25		97	85-115			2		
Surr: DIBROMOFLUOROMETHANE	25.4		25		102	84-118			1		
Surr: TOLUENE-D8	25		25		100	85-115			0		
BENZENE	10.7	1	10		107	83-117		11.2	4	20	
TOLUENE	10	1	10		100	82-113		10.4	3	20	
ETHYLBENZENE	10.5	1	10		105	81-113		10.8	3	20	
M+P-XYLENE	19.3	1	20		97	82-115		19.8	2	20	
O-XYLENE	9.93	1	10		99	81-115		10.2	3	20	

MB Sample ID: **VL160511-3** Units: **%REC** Analysis Date: **5/11/2016 13:58**

Client ID: Run ID: **VL160511-3A** Prep Date: **5/11/2016** 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		25		108	85-115					
Surr: DIBROMOFLUOROMETHANE	25		25		100	84-118					
Surr: TOLUENE-D8	25.3		25		101	85-115					
BENZENE	ND	1									
TOLUENE	ND	1									
ETHYLBENZENE	ND	1									
M+P-XYLENE	ND	1									
O-XYLENE	ND	1									
TOTAL XYLENES	ND	1									

QC BATCH REPORT

Batch ID: **VL160511-3-2** Instrument ID **HPV1** Method: **SW8260_25**

LCS Sample ID: **VL160511-6** Units: **UG/L** Analysis Date: **5/11/2016 12:32**
Client ID: Run ID: **VL160511-3A** Prep Date: **5/11/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1040	100	1000		104	80-120				20	

LCSD Sample ID: **VL160511-6** Units: **UG/L** Analysis Date: **5/11/2016 12:53**
Client ID: Run ID: **VL160511-3A** Prep Date: **5/11/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1010	100	1000		101	80-120		1040	3	20	

MB Sample ID: **VL160511-3** Units: **UG/L** Analysis Date: **5/11/2016 13:58**
Client ID: Run ID: **VL160511-3A** Prep Date: **5/11/2016** 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: 1605077-1

Batch ID: **AK160510-2-1** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK160510-2** Units: **MG/L** Analysis Date: **5/10/2016**
Client ID: Run ID: **AK160510-2A1** Prep Date: **5/10/2016** 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: **AK160510-2** Units: **MG/L** Analysis Date: **5/10/2016**
Client ID: Run ID: **AK160510-2A1** Prep Date: **5/10/2016** 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	105	5	100		105	85-115		101	4	15	

MB Sample ID: **AK160510-2** Units: **MG/L** Analysis Date: **5/10/2016**
Client ID: Run ID: **AK160510-2A1** Prep Date: **5/10/2016** 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: 1605077-1

Batch ID: **IC160505-1-2** Instrument ID **IC-2** Method: **EPA300.0**

LCS Sample ID: **IC160505-1** Units: **MG/L** Analysis Date: **5/5/2016 16:02**

Client ID: Run ID: **IC160505-1A2** Prep Date: **5/5/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	5.28	0.2	5		106	90-110				15	
CHLORIDE	5.3	0.2	5		106	90-110				15	
FLUORIDE	2.07	0.1	2		103	90-110				15	
NITRATE AS N	5.25	0.2	5		105	90-110				15	
NITRITE AS N	2.02	0.1	2		101	90-110				15	
SULFATE	21.1	1	20		106	90-110				15	

MB Sample ID: **IC160505-1** Units: **MG/L** Analysis Date: **5/5/2016 16:17**

Client ID: Run ID: **IC160505-1A2** Prep Date: **5/5/2016** 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	ND	1									

MS Sample ID: **1605077-1** Units: **MG/L** Analysis Date: **5/5/2016 19:18**

Client ID: **Metcalf 69030F** Run ID: **IC160505-1A2** Prep Date: **5/5/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	50	2	50	1.3	97	85-115				15	
FLUORIDE	18.9	1	20	0.69	91	85-115				15	
NITRATE AS N	48.7	2	50	2	97	85-115				15	
NITRITE AS N	16.5	1	20	1	82	85-115				15	N

MSD Sample ID: **1605077-1** Units: **MG/L** Analysis Date: **5/5/2016 19:33**

Client ID: **Metcalf 69030F** Run ID: **IC160505-1A2** Prep Date: **5/5/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	52.9	2	50	1.3	103	85-115		50	6	15	
FLUORIDE	20.2	1	20	0.69	97	85-115		18.9	7	15	
NITRATE AS N	51.7	2	50	2	103	85-115		48.7	6	15	
NITRITE AS N	16.7	1	20	1	84	85-115		16.5	1	15	N

The following samples were analyzed in this batch: 1605077-1

QC BATCH REPORT

Batch ID: **PH160507-1-2** Instrument ID **pH-1** Method: **SM4500-H**

CCV Sample ID: **CCV1** Units: **pH** Analysis Date: **5/7/2016**

Client ID: Run ID: **PH160507-1A1** Prep Date: **5/7/2016** 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: **5/7/2016**

Client ID: Run ID: **PH160507-1A1** Prep Date: **5/7/2016** 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			6.95-7.05					

The following samples were analyzed in this batch: 1605077-1

Batch ID: **SC160507-1-1** Instrument ID **pH-2** Method: **SM2510B**

CCV Sample ID: **SC160507-1** Units: **pH** Analysis Date: **5/7/2016**

Client ID: Run ID: **SC160507-1A1** Prep Date: **5/7/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1390	1	1410		98	?71.7-1554					

ICV Sample ID: **SC160507-1** Units: **pH** Analysis Date: **5/7/2016**

Client ID: Run ID: **SC160507-1A1** Prep Date: **5/7/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	706	1	718		98	646.2-789.7					

The following samples were analyzed in this batch: 1605077-1

Batch ID: **TD160506-1-1** Instrument ID **Balance** Method: **SM2540C**

DUP Sample ID: **1605077-1** Units: **MG/L** Analysis Date: **5/10/2016**
Client ID: **Metcalf 69030F** Run ID: **TD160510-1A1** Prep Date: **5/6/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	5060	200						4900	3	5	

LCS Sample ID: **TD160506-1** Units: **MG/L** Analysis Date: **5/10/2016**
Client ID: Run ID: **TD160510-1A1** Prep Date: **5/6/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	392	20	400		98	85-115				5	

LCSD Sample ID: **TD160506-1** Units: **MG/L** Analysis Date: **5/10/2016**
Client ID: Run ID: **TD160510-1A1** Prep Date: **5/6/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	395	20	400		99	85-115		392	1	5	

MB Sample ID: **TD160506-1** Units: **MG/L** Analysis Date: **5/10/2016**
Client ID: Run ID: **TD160510-1A1** Prep Date: **5/6/2016** 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: 1605077-1

Client: Western Water and Land, Inc.
Work Order: 1605077
Project: Nolte 14-44 BWQ

QC BATCH REPORT

Batch ID: **TP160506-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS Sample ID: **TP160506-1** Units: **MG/L** Analysis Date: **5/6/2016**
Client ID: Run ID: **TP160506-1A2** Prep Date: **5/6/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.42	0.05	0.5		84	80-120				20	

LCSD Sample ID: **TP160506-1** Units: **MG/L** Analysis Date: **5/6/2016**
Client ID: Run ID: **TP160506-1A2** Prep Date: **5/6/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.437	0.05	0.5		87	80-120		0.42	4	20	

MB Sample ID: **TP160506-1** Units: **MG/L** Analysis Date: **5/6/2016**
Client ID: Run ID: **TP160506-1A2** Prep Date: **5/6/2016** 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									

MS Sample ID: **1605077-1** Units: **MG/L** Analysis Date: **5/6/2016**
Client ID: **Metcalf 69030F** Run ID: **TP160506-1A2** Prep Date: **5/6/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.323	0.05	0.25	0.029	117	80-120				20	

MSD Sample ID: **1605077-1** Units: **MG/L** Analysis Date: **5/6/2016**
Client ID: **Metcalf 69030F** Run ID: **TP160506-1A2** Prep Date: **5/6/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.321	0.05	0.25	0.029	117	80-120		0.323	1	20	

The following samples were analyzed in this batch: 1605077-1