Saturday, December 31, 2016

Bruce Smith
Western Water and Land, Inc.
743 Horizon Ct., Suite 330
Grand Junction, CO 81506

Re: ALS Workorder: 1612269
Project Name: TEP RU11-7 BWQ
Project Number:

Dear Mr. Smith:

Two water samples were received from Western Water and Land, Inc., on 12/15/2016. The samples were scheduled for the following analyses:

BART
Dissolved Gasses
GC/MS Volatiles
Inorganics
Metals
Total Extractable Petroleum Hydrocarbons (Diesel)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Shiloh J. Summy
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

1612269

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.

Sample 1612269-1 had a pH > 2 at the time of analysis. The other sample had a pH < 2 at the time of analysis.

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 2 prior to analysis.

All acceptance criteria were met.

Inorganics:

The samples were 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

All laboratory control sample criteria were met with the exception of the RPD for TDS. Since the recoveries for TDS in the laboratory control sample and laboratory control sample duplicate were within control limits, no further action was taken.

A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with the anion batch. The MS/MSD was analyzed outside of hold time for nitrate as N and nitrite as N (12/16/16), however the sample was analyzed within hold (12/15/16). No matrix QC results are provided for nitrate as N and nitrite as N. All remaining guidance criteria for precision and accuracy were met.

All remaining acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1612269
Client Name: Western Water and Land, Inc.
Client Project Name: TEP RU11-7 BWQ
Client Project Number:
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Beaver Cr 2	1612269-1		WATER	14-Dec-16	9:55
Yellow Jacket Spg	1612269-2		WATER	14-Dec-16	12:20

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 16 12269

PAGE 1 of 1

DISPOSAL (By Lab) or Return to Client

PROJECT NAME	TEP RU11-7 BWQ	SAMPLER	Shelby
FACILITY NAME		PROJECT NO.	
FACILITY ID (API)		EDD FORMAT	
COMPANY NAME	Western Water & Land, Inc.	PURCHASE ORDER	
SEND REPORT TO	Bruce Smith	BILL TO COMPANY	TEP Rocky Mtn LLC
ADDRESS	743 Horizon Court, Suite 330	INVOICE ATTN TO	Mike Gardner
CITY / STATE / ZIP	Grand Junction, CO 81506	ADDRESS	1058 CR 215
PHONE	(970) 242-0170	CITY / STATE / ZIP	Parachute, CO 81635
FAX		PHONE	(970) 250-5778
E-MAIL	bsmith@westernwaterandland.com	FAX	
		E-MAIL	mgardner@terraep.com

DATE 12-14-16

TURNAROUND Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	NG1	BART	BTEX/GRO	DRO	Dissolved Metals, lab filtered	Anions, Alk, TDS, pH, SpC	Total Phosphorus	Dissolved gases - HCl preserved	Dissolved gases - unpreserved
1	Beaver Cr 2	SW	12-14-16	0955	13	1,3	IV	1	1	3	3	1	1	1		2
2	Yellow Jacket Spg	GW	12-14-16	1220	14	1,3	IV	1	1	3	3	1	1	1	3	

Field Parameters

Beaver Cr 2	Temp (°C)	-0.1	DO (%)	93.4	SpC (uS/cm)	369.6	Turb (NTUs)	2.44		
	pH (s.u.)	7.94	DO (mg/L)	12.24	ORP (mv)	223.6	Disch (gpm)			
Yellow Jacket Spg	Temp (°C)	3.1	DO (%)	36.3	SpC (uS/cm)	653.2	Turb (NTUs)	2.07		
	pH (s.u.)	7.38	DO (mg/L)	4.78	ORP (mv)	101.6	Disch (gpm)			

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

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
X	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	S Goodwin	Shelby Goodwin	12.14.16	1410
RECEIVED BY	NE	N. Martin	12-14-16	1410
RELINQUISHED BY	NM	N. Martin	12-14-16	1730
RECEIVED BY	C Trimble	C Trimble	12-15-16	1045
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water Workorder No: 1612269

Project Manager: _____ Initials: CDT Date: 12-15-16

1. Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	(YES)	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	(YES)	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	(YES)	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	(NO)
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: (#2) #4	RAD ONLY	(YES)	NO

Cooler #:	1
Temperature (°C):	3.5
No. of custody seals on cooler:	1
DOT Survey/ Acceptance Information — External µR/hr reading:	10
DOT Survey/ Acceptance Information — Background µR/hr reading:	10

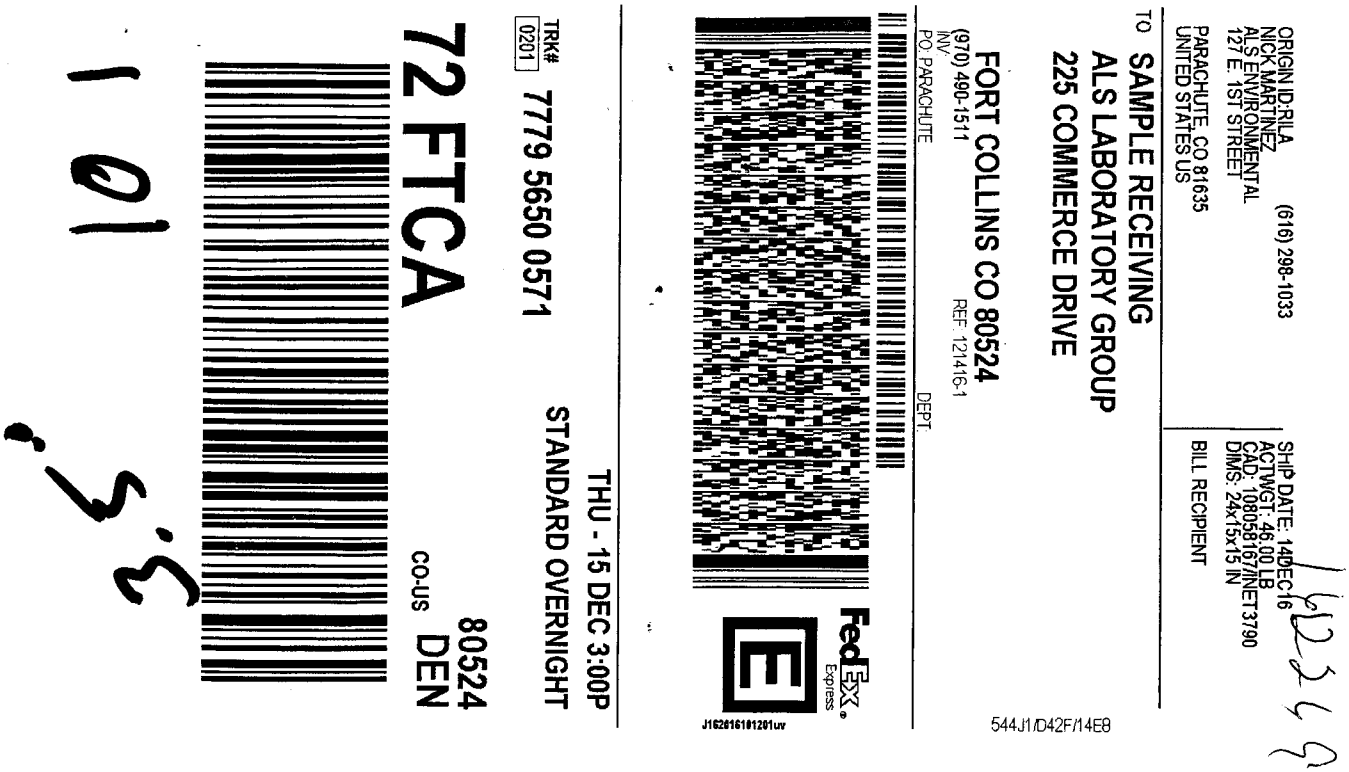
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

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

Project Manager Signature / Date: _____

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002



After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Client: Western Water and Land, Inc. **Date:** *09-Feb-17*
Project: TEP RU11-7 BWQ **Work Order:** 1612269
Sample ID: Beaver Cr 2 **Lab ID:** 1612269-1
Legal Location: **Matrix:** WATER
Collection Date: 12/14/2016 09:55 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **12/21/2016**		PrepBy: **AMG**
BICARBONATE AS CaCO3	**160**		**20**	**MG/L**	1		12/21/2016
CARBONATE AS CaCO3	ND		20	MG/L	1		12/21/2016
TOTAL ALKALINITY AS CaCO3	**160**		**20**	**MG/L**	1		12/21/2016
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **12/19/2016**		PrepBy: **AJL2**
IRON RELATED BACTERIA	**2300**		**1**	**cfu/ml**	1		12/27/2016
SLIME FORMING BACTERIA	**66500**		**1**	**cfu/ml**	1		12/27/2016
SULFATE REDUCING BACTERIA	**100000**		**1**	**cfu/ml**	1		12/27/2016
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **12/21/2016**		PrepBy: **JFN**
Diesel Range Organics	ND		0.6	MG/L	1	0.18	12/22/2016 19:21
Surr: O-TERPHENYL	*103*		*63-126*	*%REC*	1		12/22/2016 19:21
DISSOLVED GASSES			**RSK175**		Prep Date: **12/21/2016**		PrepBy: **DMS**
METHANE	ND		1	UG/L	1	1	12/21/2016 12:26
ETHANE	ND		2	UG/L	1	2	12/21/2016 12:26
PROPANE	ND		1	UG/L	1	1	12/21/2016 12:26
GC/MS VOLATILES			**SW8260_25**		Prep Date: **12/22/2016**		PrepBy: **JXK**
BENZENE	ND		1	UG/L	1	0.3	12/22/2016 15:22
TOLUENE	ND		1	UG/L	1	0.3	12/22/2016 15:22
ETHYLBENZENE	ND		1	UG/L	1	0.3	12/22/2016 15:22
M+P-XYLENE	ND		1	UG/L	1	0.3	12/22/2016 15:22
O-XYLENE	ND		1	UG/L	1	0.3	12/22/2016 15:22
TOTAL XYLENES	ND		1	UG/L	1		12/22/2016 15:22
Surr: 4-BROMOFLUOROBENZENE	*102*		*85-115*	*%REC*	1		12/22/2016 15:22
Surr: DIBROMOFLUOROMETHANE	*98*		*84-118*	*%REC*	1		12/22/2016 15:22
Surr: TOLUENE-D8	*95*		*85-115*	*%REC*	1		12/22/2016 15:22
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	100	12/22/2016 15:22
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **12/15/2016**		PrepBy: **AMG**
BROMIDE	ND		0.2	MG/L	1	0.06	12/16/2016 15:25
CHLORIDE	**1.6**		**0.2**	**MG/L**	1	0.06	12/16/2016 15:25
FLUORIDE	**0.093**	J	**0.1**	**MG/L**	1	0.03	12/16/2016 15:25
NITRATE/NITRITE AS N	**0.2**	J	**0.1**	**MG/L**	1		12/15/2016 18:09
NITRATE AS N	**0.2**	J	**0.2**	**MG/L**	1	0.06	12/15/2016 18:09
NITRITE AS N	ND		0.1	MG/L	1	0.03	12/15/2016 18:09
SULFATE	**20**		**1**	**MG/L**	1	0.3	12/16/2016 15:25
METALS BY 200.8			**EPA200.8**		Prep Date: **12/20/2016**		PrepBy: **AJL2**
BARIUM	**0.048**		**0.001**	**MG/L**	10	0.00016	12/28/2016 13:16
BORON	**0.028**	J	**0.05**	**MG/L**	10	0.012	12/28/2016 13:16
CALCIUM	**42**		**1**	**MG/L**	10	0.068	12/28/2016 13:16
IRON	**0.011**	J	**0.1**	**MG/L**	10	0.0081	12/28/2016 13:16
MAGNESIUM	**9.4**		**0.1**	**MG/L**	10	0.018	12/28/2016 13:16
MANGANESE	**0.00074**	J	**0.002**	**MG/L**	10	0.00034	12/28/2016 13:16

Client:	Western Water and Land, Inc.	**Date:**	*09-Feb-17*
Project:	TEP RU11-7 BWQ	**Work Order:**	1612269
Sample ID:	Beaver Cr 2	**Lab ID:**	1612269-1
Legal Location:		**Matrix:**	WATER
Collection Date:	12/14/2016 09:55	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	**0.88**	J	**1**	**MG/L**	10	0.29	12/28/2016 13:16
SELENIUM	ND		0.001	MG/L	10	0.00066	12/28/2016 13:16
SODIUM	**14**		**1**	**MG/L**	10	0.2	12/28/2016 13:16
STRONTIUM	**0.28**		**0.001**	**MG/L**	10	0.0003	12/28/2016 13:16
PH			**SM4500-H**		Prep Date: **12/16/2016**		PrepBy: **AMG**
PH	**8.18**		**0.1**	**pH**	1		12/16/2016
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **12/16/2016**		PrepBy: **AMG**
SPECIFIC CONDUCTIVITY	**380**		**1**	**umhos/cm**	1		12/16/2016
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **12/19/2016**		PrepBy: **AMG**
TOTAL DISSOLVED SOLIDS	**220**		**20**	**MG/L**	1		12/20/2016
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **12/16/2016**		PrepBy: **HMA**
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	0.015	12/19/2016

Client: Western Water and Land, Inc. **Date:** *09-Feb-17*
Project: TEP RU11-7 BWQ **Work Order:** 1612269
Sample ID: Yellow Jacket Spg **Lab ID:** 1612269-2
Legal Location: **Matrix:** WATER
Collection Date: 12/14/2016 12:20 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **12/21/2016**		PrepBy: **AMG**
BICARBONATE AS CaCO3	**300**		**20**	**MG/L**	1		12/21/2016
CARBONATE AS CaCO3	ND		20	MG/L	1		12/21/2016
TOTAL ALKALINITY AS CaCO3	**300**		**20**	**MG/L**	1		12/21/2016
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **12/19/2016**		PrepBy: **AJL2**
IRON RELATED BACTERIA	**2300**		**1**	**cfu/ml**	1		12/27/2016
SLIME FORMING BACTERIA	**66500**		**1**	**cfu/ml**	1		12/27/2016
SULFATE REDUCING BACTERIA	**18000**		**1**	**cfu/ml**	1		12/27/2016
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **12/21/2016**		PrepBy: **JFN**
Diesel Range Organics	ND		0.59	MG/L	1	0.18	12/22/2016 19:43
Surr: O-TERPHENYL	*106*		*63-126*	*%REC*	1		12/22/2016 19:43
DISSOLVED GASSES			**RSK175**		Prep Date: **12/21/2016**		PrepBy: **DMS**
METHANE	**19**		**1**	**UG/L**	1	1	12/21/2016 12:29
ETHANE	ND		2	UG/L	1	2	12/21/2016 12:29
PROPANE	ND		1	UG/L	1	1	12/21/2016 12:29
GC/MS VOLATILES			**SW8260_25**		Prep Date: **12/22/2016**		PrepBy: **JXK**
BENZENE	ND		1	UG/L	1	0.3	12/22/2016 15:44
TOLUENE	ND		1	UG/L	1	0.3	12/22/2016 15:44
ETHYLBENZENE	ND		1	UG/L	1	0.3	12/22/2016 15:44
M+P-XYLENE	ND		1	UG/L	1	0.3	12/22/2016 15:44
O-XYLENE	ND		1	UG/L	1	0.3	12/22/2016 15:44
TOTAL XYLENES	ND		1	UG/L	1		12/22/2016 15:44
Surr: 4-BROMOFLUOROBENZENE	*101*		*85-115*	*%REC*	1		12/22/2016 15:44
Surr: DIBROMOFLUOROMETHANE	*99*		*84-118*	*%REC*	1		12/22/2016 15:44
Surr: TOLUENE-D8	*96*		*85-115*	*%REC*	1		12/22/2016 15:44
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	100	12/22/2016 15:44
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **12/15/2016**		PrepBy: **AMG**
BROMIDE	ND		0.2	MG/L	1	0.06	12/15/2016 18:22
CHLORIDE	**9**		**0.2**	**MG/L**	1	0.06	12/15/2016 18:22
FLUORIDE	**0.21**		**0.1**	**MG/L**	1	0.03	12/15/2016 18:22
NITRATE/NITRITE AS N	ND		0.1	MG/L	1		12/15/2016 18:22
NITRATE AS N	ND		0.2	MG/L	1	0.06	12/15/2016 18:22
NITRITE AS N	ND		0.1	MG/L	1	0.03	12/15/2016 18:22
SULFATE	**11**		**1**	**MG/L**	1	0.3	12/15/2016 18:22
METALS BY 200.8			**EPA200.8**		Prep Date: **12/20/2016**		PrepBy: **AJL2**
BARIUM	**0.12**		**0.001**	**MG/L**	10	0.00016	12/28/2016 13:19
BORON	**0.029**	J	**0.05**	**MG/L**	10	0.012	12/28/2016 13:19
CALCIUM	**89**		**1**	**MG/L**	10	0.068	12/28/2016 13:19
IRON	**0.035**	J	**0.1**	**MG/L**	10	0.0081	12/28/2016 13:19
MAGNESIUM	**17**		**0.1**	**MG/L**	10	0.018	12/28/2016 13:19
MANGANESE	**0.33**		**0.002**	**MG/L**	10	0.00034	12/28/2016 13:19

Client:	Western Water and Land, Inc.	**Date:**	*09-Feb-17*
Project:	TEP RU11-7 BWQ	**Work Order:**	1612269
Sample ID:	Yellow Jacket Spg	**Lab ID:**	1612269-2
Legal Location:		**Matrix:**	WATER
Collection Date:	12/14/2016 12:20	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
POTASSIUM	**1.6**		**1**	**MG/L**	10	0.29	12/28/2016 13:19
SELENIUM	ND		0.001	MG/L	10	0.00066	12/28/2016 13:19
SODIUM	**13**		**1**	**MG/L**	10	0.2	12/28/2016 13:19
STRONTIUM	**0.44**		**0.001**	**MG/L**	10	0.0003	12/28/2016 13:19
PH			**SM4500-H**		Prep Date: **12/16/2016**		PrepBy: **AMG**
PH	**7.55**		**0.1**	**pH**	1		12/16/2016
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **12/16/2016**		PrepBy: **AMG**
SPECIFIC CONDUCTIVITY	**669**		**1**	**umhos/cm**	1		12/16/2016
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **12/19/2016**		PrepBy: **AMG**
TOTAL DISSOLVED SOLIDS	**350**		**20**	**MG/L**	1		12/20/2016
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **12/16/2016**		PrepBy: **HMA**
TOTAL PHOSPHORUS	**0.04**	J	**0.05**	**MG/L**	1	0.015	12/19/2016

Client:	Western Water and Land, Inc.	**Date:**	*09-Feb-17*
Project:	TEP RU11-7 BWQ	**Work Order:**	1612269
Sample ID:	Yellow Jacket Spg	**Lab ID:**	1612269-2
Legal Location:		**Matrix:**	WATER
Collection Date:	12/14/2016 12:20	**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: **HC161221-101-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS Sample ID: **HC161221-101** Units: **MG/L** Analysis Date: **12/22/2016 17:10**

Client ID: Run ID: **HC161222-88A** Prep Date: **12/21/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.63	0.592	8.22		105	36-150				20	
Surr: O-TERPHENYL	0.862		0.822		105	63-126					

LCSD Sample ID: **HC161221-101** Units: **MG/L** Analysis Date: **12/22/2016 17:32**

Client ID: Run ID: **HC161222-88A** Prep Date: **12/21/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	8.82	0.602	8.36		106	36-150		8.63	2	20	
Surr: O-TERPHENYL	0.854		0.836		102	63-126			1		

MB Sample ID: **HC161221-101** Units: **MG/L** Analysis Date: **12/22/2016 16:47**

Client ID: Run ID: **HC161222-88A** Prep Date: **12/21/2016** 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	0.59									
Surr: O-TERPHENYL	0.825		0.818		101	63-126					

The following samples were analyzed in this batch: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **HCM161221-1-2** Instrument ID: **MEE-1** Method: **RSK175**

LCS Sample ID: **HCM161221-1** Units: **UG/L** Analysis Date: **12/21/2016 11:21**

Client ID: Run ID: **HC161221-999A** Prep Date: **12/21/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	135	1	142		95	80-120				25	
ETHANE	259	2	267		97	80-120				25	
PROPANE	376	1	391		96	80-120				25	

LCSD Sample ID: **HCM161221-1** Units: **UG/L** Analysis Date: **12/21/2016 12:02**

Client ID: Run ID: **HC161221-999A** Prep Date: **12/21/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
METHANE	148	1	142		104	80-120		135	9	25	
ETHANE	276	2	267		103	80-120		259	6	25	
PROPANE	399	1	391		102	80-120		376	6	25	

MB Sample ID: **HCM161221-1** Units: **UG/L** Analysis Date: **12/21/2016 11:24**

Client ID: Run ID: **HC161221-999A** Prep Date: **12/21/2016** 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: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **IP161220-2-1** Instrument ID: **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **IM161220-2** Units: **MG/L** Analysis Date: **12/28/2016 13:04**

Client ID: Run ID: **IM161228-11A12** Prep Date: **12/20/2016** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BARIUM	0.0964	0.001	0.1		96	85-115				20	
BORON	0.996	0.05	1		100	85-115				20	
CALCIUM	9.52	1	10		95	85-115				20	
IRON	4.9	0.1	5		98	85-115				20	
MAGNESIUM	9.3	0.1	10		93	85-115				20	
MANGANESE	0.0969	0.002	0.1		97	85-115				20	
POTASSIUM	4.89	1	5		98	85-115				20	
SELENIUM	0.0989	0.001	0.1		99	85-115				20	
SODIUM	10	1	10		100	85-115				20	
STRONTIUM	0.0946	0.001	0.1		95	85-115				20	

MB Sample ID: **FP161220-2** Units: **MG/L** Analysis Date: **12/28/2016 13:01**

Client ID: Run ID: **IM161228-11A12** Prep Date: **12/20/2016** 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	0.016	0.05									J
CALCIUM	0.078	1									J
IRON	0.022	0.1									J
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: 1612269-1 1612269-2

Batch ID: **VL161222-3-2** Instrument ID: **HPV3** Method: **SW8260_25**

LCS Sample ID: **VL161222-3** Units: **%REC** Analysis Date: **12/22/2016 10:43**

Client ID: Run ID: **VL161222-3A** Prep Date: **12/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.2		25		97	85-115					
Surr: DIBROMOFLUOROMETHANE	24.9		25		100	84-118					
Surr: TOLUENE-D8	23.9		25		96	85-115					
BENZENE	10.3	1	10		103	83-117				20	
TOLUENE	10.7	1	10		107	82-113				20	
ETHYLBENZENE	10.8	1	10		108	81-113				20	
M+P-XYLENE	21.5	1	20		108	82-115				20	
O-XYLENE	10.8	1	10		108	81-115				20	

LCSD Sample ID: **VL161222-3** Units: **%REC** Analysis Date: **12/22/2016 11:04**

Client ID: Run ID: **VL161222-3A** Prep Date: **12/22/2016** 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		25		96	85-115			1		
Surr: DIBROMOFLUOROMETHANE	24.8		25		99	84-118			1		
Surr: TOLUENE-D8	23.9		25		96	85-115			0		
BENZENE	9.8	1	10		98	83-117		10.3	5	20	
TOLUENE	10.2	1	10		102	82-113		10.7	4	20	
ETHYLBENZENE	10.3	1	10		103	81-113		10.8	5	20	
M+P-XYLENE	20.5	1	20		102	82-115		21.5	5	20	
O-XYLENE	10.3	1	10		103	81-115		10.8	4	20	

MB Sample ID: **VL161222-3** Units: **%REC** Analysis Date: **12/22/2016 13:36**

Client ID: Run ID: **VL161222-3A** Prep Date: **12/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Surr: 4-BROMOFLUOROBENZENE	24.9		25		100	85-115					
Surr: DIBROMOFLUOROMETHANE	24.8		25		99	84-118					
Surr: TOLUENE-D8	23.8		25		95	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: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **VL161222-3-4** Instrument ID: **HPV3** Method: **SW8260_25**

LCS Sample ID: **VL161222-6** Units: **UG/L** Analysis Date: **12/22/2016 12:11**
Client ID: Run ID: **VL161222-3A** Prep Date: **12/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	957	100	1000		96	80-120				20	

LCSD Sample ID: **VL161222-6** Units: **UG/L** Analysis Date: **12/22/2016 12:32**
Client ID: Run ID: **VL161222-3A** Prep Date: **12/22/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	930	100	1000		93	80-120		957	3	20	

MB Sample ID: **VL161222-3** Units: **UG/L** Analysis Date: **12/22/2016 13:36**
Client ID: Run ID: **VL161222-3A** Prep Date: **12/22/2016** 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: 1612269-1 1612269-2

Batch ID: **AK161221-1-3** Instrument ID: **NONE** Method: **SM2320B**

LCS Sample ID: **AK161221-1** Units: **MG/L** Analysis Date: **12/21/2016**
Client ID: Run ID: **AK161221-1a1** Prep Date: **12/21/2016** 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	97.3	5	100		97	85-115				15	

LCSD Sample ID: **AK161221-1** Units: **MG/L** Analysis Date: **12/21/2016**
Client ID: Run ID: **AK161221-1a1** Prep Date: **12/21/2016** 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	96.1	5	100		96	85-115		97.3	1	15	

MB Sample ID: **AK161221-1** Units: **MG/L** Analysis Date: **12/21/2016**
Client ID: Run ID: **AK161221-1a1** Prep Date: **12/21/2016** 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: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **IC161215-1-2** Instrument ID: **IC3** Method: **EPA300.0**

LCS Sample ID: **IC161215-1** Units: **MG/L** Analysis Date: **12/15/2016 13:17**

Client ID: Run ID: **IC161215-1A2** Prep Date: **12/15/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	5.01	0.2	5		100	90-110				15	
CHLORIDE	5.01	0.2	5		100	90-110				15	
FLUORIDE	1.95	0.1	2		97	90-110				15	
NITRATE AS N	5.08	0.2	5		102	90-110				15	
NITRITE AS N	2.04	0.1	2		102	90-110				15	
SULFATE	20.3	1	20		102	90-110				15	

MB Sample ID: **IC161215-1** Units: **MG/L** Analysis Date: **12/15/2016 12:11**

Client ID: Run ID: **IC161215-1A2** Prep Date: **12/15/2016** 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									

The following samples were analyzed in this batch: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **IC161215-1-2** Instrument ID: **IC3** Method: **EPA300.0**

MS Sample ID: **1612269-1** Units: **MG/L** Analysis Date: **12/16/2016 15:39**

Client ID: **Beaver Cr 2** Run ID: **IC161216-1A4** Prep Date: **12/15/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	4.88	0.2	5	0.2	98	85-115				15	
CHLORIDE	6.69	0.2	5	1.6	102	85-115				15	
FLUORIDE	2.01	0.1	2	0.093	96	85-115				15	
SULFATE	38.7	1	20	20	94	85-115				15	

MSD Sample ID: **1612269-1** Units: **MG/L** Analysis Date: **12/16/2016 15:52**

Client ID: **Beaver Cr 2** Run ID: **IC161216-1A4** Prep Date: **12/15/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BROMIDE	4.97	0.2	5	0.2	99	85-115		4.88	2	15	
CHLORIDE	6.78	0.2	5	1.6	103	85-115		6.69	1	15	
FLUORIDE	2.05	0.1	2	0.093	98	85-115		2.01	2	15	
SULFATE	39	1	20	20	96	85-115		38.7	1	15	

The following samples were analyzed in this batch: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **PH161216-1-1** Instrument ID: **pH-1** Method: **SM4500-H**

CCV Sample ID: **CCV** Units: **pH** Analysis Date: **12/16/2016**

Client ID: Run ID: **PH161216-1a1** Prep Date: **12/16/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
PH	7.05	0.1	5.6			6.9-7.1					

ICV Sample ID: **ICV** Units: **pH** Analysis Date: **12/16/2016**

Client ID: Run ID: **PH161216-1a1** Prep Date: **12/16/2016** 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	5.6			6.95-7.05					

The following samples were analyzed in this batch: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **SC161216-1-1** Instrument ID: **pH-2** Method: **SM2510B**

CCV Sample ID: **CCV** Units: **umhos/cm** Analysis Date: **12/16/2016**
Client ID: Run ID: **SC161216-1a1** Prep Date: **12/16/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1400	1	1410		99	271.7-1554					

ICV Sample ID: **ICV** Units: **umhos/cm** Analysis Date: **12/16/2016**
Client ID: Run ID: **SC161216-1a1** Prep Date: **12/16/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	727	1	718		101	646.2-789.7					

The following samples were analyzed in this batch: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **TD161219-1-1** Instrument ID: **Balance** Method: **SM2540C**

LCS Sample ID: **TD161219-1** Units: **MG/L** Analysis Date: **12/20/2016**
Client ID: Run ID: **TD161220-1A1** Prep Date: **12/19/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	452	20	400		113	85-115				5	

LCSD Sample ID: **TD161219-1** Units: **MG/L** Analysis Date: **12/20/2016**
Client ID: Run ID: **TD161220-1A1** Prep Date: **12/19/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	398	20	400		100	85-115		452	13	5	*

MB Sample ID: **TD161219-1** Units: **MG/L** Analysis Date: **12/20/2016**
Client ID: Run ID: **TD161220-1A1** Prep Date: **12/19/2016** 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: 1612269-1 1612269-2

QC BATCH REPORT

Batch ID: **TP161216-1-1** Instrument ID: **Spec** Method: **EPA365.2**

LCS Sample ID: **TP161216-1** Units: **MG/L** Analysis Date: **12/19/2016**
Client ID: Run ID: **TP161219-1A2** Prep Date: **12/16/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.568	0.05	0.5		114	80-120				20	

LCSD Sample ID: **TP161216-1** Units: **MG/L** Analysis Date: **12/19/2016**
Client ID: Run ID: **TP161219-1A2** Prep Date: **12/16/2016** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.594	0.05	0.5		119	80-120		0.568	5	20	

MB Sample ID: **TP161216-1** Units: **MG/L** Analysis Date: **12/19/2016**
Client ID: Run ID: **TP161219-1A2** Prep Date: **12/16/2016** 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									

The following samples were analyzed in this batch: 1612269-1 1612269-2