

ATTACHMENT E

Laboratory Analytical Summary Report



1401147

Case Narrative

GC/MS Volatiles:

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

All acceptance criteria were met.

Dissolved Gasses:

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

All acceptance criteria were met.

DRO:

The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

BART:

The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with "ND" in the result field and a "U" flag. If the target analyte is detected (present), then the sample will be reported with a "1" for a result without a flag.



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:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H ⁺ B	1126
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
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 acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1401147

Client Name: Western Water and Land, Inc.

Client Project Name: GV 84-1 BWQ

Client Project Number: 30000.01.81

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Cottonwood Spg 1	1401147-1		WATER	14-Jan-14	14:00
Redding Spg	1401147-2		WATER	14-Jan-14	11:43



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water

Workorder No: 1401147

Project Manager: ARW

Initials: JLR Date: 1/15/14

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> 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	<input checked="" type="radio"/> YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>2°</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>11</u>			
Background µR/hr reading: <u>10</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> 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: *Swaley* 1/16/14

1401147

From: (970) 424-4749
Lab Hub, LLC
582 Huntington Point Lane
Clifton, CO 81520

Origin ID: GJTA



Ship Date: 14JAN14
ActWgt: 60.0 LB
CAD: 103923490/NET3430
Dims: 25 X 14 X 15 IN

Delivery Address Bar Code



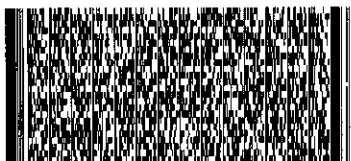
SHIP TO: (970) 490-1511
Sample Receiving
ALS Environmental- Ft. Collins
225 COMMERCE DR
FORT COLLINS, CO 80524

BILL RECIPIENT

Ref # 1001-011414-6
Invoice #
PO #
Dept #

WED - 15 JAN AA
STANDARD OVERNIGHT

TRK# 7976 3485 6620
0201



72 FTCA

80524
CO-US
DEN



S1AG106EQ1ABE

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.

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Temp = 2°C



Client: Western Water and Land, Inc.
 Project: 30000.01.81 GV 84-1 BWQ
 Sample ID: Cottonwood Spg 1
 Legal Location:
 Collection Date: 1/14/2014 14:00

Date: 24-Jan-14
 Work Order: 1401147
 Lab ID: 1401147-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 1/21/2014	PrepBy: KMP
BICARBONATE AS CaCO3	320		20	MG/L	1	1/21/2014
CARBONATE AS CaCO3	ND		20	MG/L	1	1/21/2014
TOTAL ALKALINITY AS CaCO3	320		20	MG/L	1	1/21/2014
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 1/16/2014	PrepBy: NAQ
IRON RELATED BACTERIA	1		1	NU	1	1/24/2014
SLIME FORMING BACTERIA	1		1	NU	1	1/24/2014
SULFATE REDUCING BACTERIA	1		1	NU	1	1/24/2014
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 1/16/2014	PrepBy: JAC
Diesel Range Organics	ND		0.5	MG/L	1	1/19/2014 12:21
Surr: O-TERPHENYL	106		54-123	%REC	1	1/19/2014 12:21
DISSOLVED GASSES			RSK175		Prep Date: 1/21/2014	PrepBy: TWK
METHANE	ND		1	UG/L	1	1/21/2014 17:51
ETHANE	ND		2	UG/L	1	1/21/2014 17:51
PROPANE	ND		1	UG/L	1	1/21/2014 17:51
GC/MS VOLATILES			SW8260_25		Prep Date: 1/16/2014	PrepBy: SDW
BENZENE	ND		1	UG/L	1	1/16/2014 15:28
TOLUENE	ND		1	UG/L	1	1/16/2014 15:28
ETHYLBENZENE	ND		1	UG/L	1	1/16/2014 15:28
M+P-XYLENE	ND		1	UG/L	1	1/16/2014 15:28
O-XYLENE	ND		1	UG/L	1	1/16/2014 15:28
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	1/16/2014 15:28
TOTAL XYLENES	ND		1	UG/L	1	1/16/2014 15:28
Surr: DIBROMOFLUOROMETHANE	99		84-118	%REC	1	1/16/2014 15:28
Surr: TOLUENE-D8	100		85-115	%REC	1	1/16/2014 15:28
Surr: 4-BROMOFLUOROBENZENE	100		85-115	%REC	1	1/16/2014 15:28
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 1/16/2014	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	1/16/2014 11:30
CHLORIDE	7		0.2	MG/L	1	1/16/2014 11:30
FLUORIDE	0.19		0.1	MG/L	1	1/16/2014 11:30
NITRATE/NITRITE AS N	0.44		0.1	MG/L	1	1/16/2014 11:30
NITRITE AS N	ND		0.1	MG/L	1	1/16/2014 11:30
NITRATE AS N	0.44		0.2	MG/L	1	1/16/2014 11:30
SULFATE	25		1	MG/L	1	1/16/2014 11:30
METALS BY 200.8			EPA200.8		Prep Date: 1/20/2014	PrepBy: NAQ
BARIUM	150		1	UG/L	10	1/21/2014 12:21
BORON	66		50	UG/L	10	1/21/2014 12:21
CALCIUM	67000		1000	UG/L	10	1/21/2014 12:21
IRON	ND		100	UG/L	10	1/21/2014 12:21
MAGNESIUM	28000		100	UG/L	10	1/21/2014 12:21
MANGANESE	4.6		2	UG/L	10	1/21/2014 12:21

Client: Western Water and Land, Inc.
Project: 30000.01.81 GV 84-1 BWQ
Sample ID: Cottonwood Spg 1
Legal Location:
Collection Date: 1/14/2014 14:00

Date: 24-Jan-14
Work Order: 1401147
Lab ID: 1401147-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	2300		1000	UG/L	10	1/21/2014 12:21
SELENIUM	ND		1	UG/L	10	1/21/2014 12:21
SODIUM	34000		1000	UG/L	10	1/21/2014 12:21
STRONTIUM	560		1	UG/L	10	1/21/2014 12:21
PH			SM4500-H		Prep Date: 1/17/2014	PrepBy: AJD
PH	8.33		0.1	pH	1	1/17/2014
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 1/16/2014	PrepBy: KMP
SPECIFIC CONDUCTIVITY	621		1	umhos/cm	1	1/16/2014
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 1/16/2014	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	380		20	MG/L	1	1/17/2014
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 1/16/2014	PrepBy: AJD
TOTAL PHOSPHORUS	0.052		0.05	MG/L	1	1/16/2014

Client: Western Water and Land, Inc.
Project: 30000.01.81 GV 84-1 BWQ
Sample ID: Redding Spg
Legal Location:
Collection Date: 1/14/2014 11:43

Date: 24-Jan-14
Work Order: 1401147
Lab ID: 1401147-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 1/21/2014	PrepBy: KMP
BICARBONATE AS CaCO3	300		20	MG/L	1	1/21/2014
CARBONATE AS CaCO3	ND		20	MG/L	1	1/21/2014
TOTAL ALKALINITY AS CaCO3	320		20	MG/L	1	1/21/2014
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 1/16/2014	PrepBy: NAQ
IRON RELATED BACTERIA	1		1	NU	1	1/24/2014
SLIME FORMING BACTERIA	1		1	NU	1	1/24/2014
SULFATE REDUCING BACTERIA	1		1	NU	1	1/24/2014
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 1/16/2014	PrepBy: JAC
Diesel Range Organics	ND		0.5	MG/L	1	1/19/2014 13:55
Surr: O-TERPHENYL	101		54-123	%REC	1	1/19/2014 13:55
DISSOLVED GASSES			RSK175		Prep Date: 1/21/2014	PrepBy: TWK
METHANE	ND		1	UG/L	1	1/21/2014 17:53
ETHANE	ND		2	UG/L	1	1/21/2014 17:53
PROPANE	ND		1	UG/L	1	1/21/2014 17:53
GC/MS VOLATILES			SW8260_25		Prep Date: 1/16/2014	PrepBy: SDW
BENZENE	ND		1	UG/L	1	1/16/2014 15:51
TOLUENE	ND		1	UG/L	1	1/16/2014 15:51
ETHYLBENZENE	ND		1	UG/L	1	1/16/2014 15:51
M+P-XYLENE	ND		1	UG/L	1	1/16/2014 15:51
O-XYLENE	ND		1	UG/L	1	1/16/2014 15:51
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	1/16/2014 15:51
TOTAL XYLENES	ND		1	UG/L	1	1/16/2014 15:51
Surr: DIBROMOFLUOROMETHANE	99		84-118	%REC	1	1/16/2014 15:51
Surr: TOLUENE-D8	98		85-115	%REC	1	1/16/2014 15:51
Surr: 4-BROMOFLUOROBENZENE	99		85-115	%REC	1	1/16/2014 15:51
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 1/16/2014	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	1/16/2014 11:16
CHLORIDE	4.9		0.2	MG/L	1	1/16/2014 11:16
FLUORIDE	0.2		0.1	MG/L	1	1/16/2014 11:16
NITRATE/NITRITE AS N	0.65		0.1	MG/L	1	1/16/2014 11:16
NITRITE AS N	ND		0.1	MG/L	1	1/16/2014 11:16
NITRATE AS N	0.65		0.2	MG/L	1	1/16/2014 11:16
SULFATE	26		1	MG/L	1	1/16/2014 11:16
METALS BY 200.8			EPA200.8		Prep Date: 1/20/2014	PrepBy: NAQ
BARIUM	120		1	UG/L	10	1/21/2014 12:24
BORON	74		50	UG/L	10	1/21/2014 12:24
CALCIUM	62000		1000	UG/L	10	1/21/2014 12:24
IRON	ND		100	UG/L	10	1/21/2014 12:24
MAGNESIUM	27000		100	UG/L	10	1/21/2014 12:24
MANGANESE	ND		2	UG/L	10	1/21/2014 12:24

Client: Western Water and Land, Inc.
Project: 30000.01.81 GV 84-1 BWQ
Sample ID: Redding Spg
Legal Location:
Collection Date: 1/14/2014 11:43

Date: 24-Jan-14
Work Order: 1401147
Lab ID: 1401147-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	1800		1000	UG/L	10	1/21/2014 12:24
SELENIUM	1.9		1	UG/L	10	1/21/2014 12:24
SODIUM	43000		1000	UG/L	10	1/21/2014 12:24
STRONTIUM	560		1	UG/L	10	1/21/2014 12:24
PH			SM4500-H		Prep Date: 1/17/2014	PrepBy: AJD
PH	8.39		0.1	pH	1	1/17/2014
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 1/16/2014	PrepBy: KMP
SPECIFIC CONDUCTIVITY	630		1	umhos/cm	1	1/16/2014
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 1/16/2014	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	380		20	MG/L	1	1/17/2014
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 1/16/2014	PrepBy: AJD
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	1/16/2014

Client: Western Water and Land, Inc.
Project: 30000.01.81 GV 84-1 BWQ
Sample ID: Redding Spg
Legal Location:
Collection Date: 1/14/2014 11:43

Date: 24-Jan-14
Work Order: 1401147
Lab ID: 1401147-2
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	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.

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

ALS Environmental -- FC

Date: 1/24/2014 1:47:

Client: Western Water and Land, Inc.
 Work Order: 1401147
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: EX140116-4-1 Instrument ID FUELS-1 Method: SW8015M

LCS		Sample ID: EX140116-4			Units: MG/L		Analysis Date: 1/19/2014 11:49			
Client ID:		Run ID: HC140118-3A			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	9.91	0.5	10		99	36-150			20	
Surr: O-TERPHENYL	1.25		1.25		100	54-123				

MB		Sample ID: EX140116-4			Units: MG/L		Analysis Date: 1/19/2014 10:46			
Client ID:		Run ID: HC140118-3A			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.5								
Surr: O-TERPHENYL	1.3		1.25		104	54-123				

MS		Sample ID: 1401147-1			Units: MG/L		Analysis Date: 1/19/2014 12:52			
Client ID: Cottonwood Spg 1		Run ID: HC140118-3A			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.3	0.5	10	0.5	103	36-150			20	
Surr: O-TERPHENYL	1.33		1.25		106	54-123				

MSD		Sample ID: 1401147-1			Units: MG/L		Analysis Date: 1/19/2014 13:24			
Client ID: Cottonwood Spg 1		Run ID: HC140118-3A			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.2	0.5	10	0.5	102	36-150	10.3	0	20	
Surr: O-TERPHENYL	1.27		1.25		102	54-123		5		

The following samples were analyzed in this batch: 1401147-1 1401147-2

Client: Western Water and Land, Inc.
 Work Order: 1401147
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **HC140121-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS		Sample ID: HC140121-9			Units: UG/L			Analysis Date: 1/21/2014 17:11		
Client ID:		Run ID: HC140121-9A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	168	1	142		118	80-120			25	
ETHANE	313	2	267		117	80-120			25	
PROPANE	451	1	391		115	80-120			25	

LCSD		Sample ID: HC140121-9			Units: UG/L			Analysis Date: 1/21/2014 18:12		
Client ID:		Run ID: HC140121-9A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	168	1	142		118	80-120	168	0	25	
ETHANE	312	2	267		117	80-120	313	0	25	
PROPANE	443	1	391		113	80-120	451	2	25	

MB		Sample ID: HC140121-9			Units: UG/L			Analysis Date: 1/21/2014 17:30		
Client ID:		Run ID: HC140121-9A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

MS		Sample ID: 1401147-2			Units: UG/L			Analysis Date: 1/21/2014 17:59		
Client ID: Redding Spg		Run ID: HC140121-9A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	36.4	1	35.6	1	102	70-130			25	
ETHANE	67.8	2	66.7	2	102	70-130			25	
PROPANE	93.6	1	97.8	1	96	70-130			25	

The following samples were analyzed in this batch:

1401147-1	1401147-2
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Client: Western Water and Land, Inc.
 Work Order: 1401147
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **IP140120-1-1** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: FP140120-1			Units: UG/L			Analysis Date: 1/21/2014 11:41			
Client ID:		Run ID: IM140121-11A3			Prep Date: 1/20/2014			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	101	1	100		101	85-115			20		
BORON	953	50	1000		95	85-115			20		
CALCIUM	9160	1000	10000		92	85-115			20		
IRON	4880	100	5000		98	85-115			20		
MAGNESIUM	9370	100	10000		94	85-115			20		
MANGANESE	189	2	200		94	85-115			20		
POTASSIUM	4450	1000	5000		89	85-115			20		
SELENIUM	100	1	100		100	85-115			20		
SODIUM	9120	1000	10000		91	85-115			20		
STRONTIUM	97.7	1	100		98	85-115			20		

MB		Sample ID: FP140120-1			Units: UG/L			Analysis Date: 1/21/2014 11:31			
Client ID:		Run ID: IM140121-11A3			Prep Date: 1/20/2014			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	ND	1									
BORON	ND	50									
CALCIUM	ND	1000									
IRON	ND	100									
MAGNESIUM	ND	100									
MANGANESE	ND	2									
POTASSIUM	ND	1000									
SELENIUM	ND	1									
SODIUM	ND	1000									
STRONTIUM	ND	1									

The following samples were analyzed in this batch: 1401147-1 1401147-2

Client: Western Water and Land, Inc.
 Work Order: 1401147
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: VL140116-4-1 Instrument ID HPV1 Method: SW8260_25

LCS		Sample ID: VL140116-4			Units: UG/L			Analysis Date: 1/16/2014 11:40			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	10.3	1	10		103	83-117			20		
TOLUENE	10.3	1	10		103	82-113			20		
ETHYLBENZENE	10.7	1	10		107	81-113			20		
M+P-XYLENE	20.5	1	20		103	82-115			20		
O-XYLENE	10.6	1	10		106	81-115			20		
Surr: DIBROMOFLUOROMETHA	25		25		100	84-118					
Surr: TOLUENE-D8	25		25		100	85-115					
Surr: 4-BROMOFLUOROBENZE	24.8		25		99	85-115					

LCS		Sample ID: VL140116-7			Units: UG/L			Analysis Date: 1/16/2014 13:11			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	579	100	500		116	80-120			20		

LCSD		Sample ID: VL140116-4			Units: UG/L			Analysis Date: 1/16/2014 12:03			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	9.79	1	10		98	83-117	10.3	5	20		
TOLUENE	9.65	1	10		96	82-113	10.3	6	20		
ETHYLBENZENE	10.3	1	10		103	81-113	10.7	4	20		
M+P-XYLENE	19.7	1	20		98	82-115	20.5	4	20		
O-XYLENE	9.95	1	10		100	81-115	10.6	6	20		
Surr: DIBROMOFLUOROMETHA	24.9		25		100	84-118		1			
Surr: TOLUENE-D8	25.3		25		101	85-115		1			
Surr: 4-BROMOFLUOROBENZE	24		25		96	85-115		3			

LCSD		Sample ID: VL140116-7			Units: UG/L			Analysis Date: 1/16/2014 13:34			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	572	100	500		114	80-120	579	1	20		

Client: Western Water and Land, Inc.
Work Order: 1401147
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **VL140116-4-1** Instrument ID: **HPV1** Method: **SW8260_25**

MB Sample ID: **VL140116-4** Units: **UG/L** Analysis Date: **1/16/2014 14:20**
 Client ID: Run ID: **VL140116-4A** Prep Date: **1/16/2014** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
TOTAL XYLENES	ND	1								
Surr: DIBROMOFLUOROMETHA	25.1		25		100	84-118				
Surr: TOLUENE-D8	24.9		25		100	85-115				
Surr: 4-BROMOFLUOROBENZE	25.1		25		100	85-115				

The following samples were analyzed in this batch:

1401147-1	1401147-2
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Client: Western Water and Land, Inc.
Work Order: 1401147
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **AK140121-2-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK140121-2			Units: MG/L			Analysis Date: 1/21/2014		
Client ID:		Run ID: AK140121-1A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	100	5	100		100	85-115			15	

MB		Sample ID: AK140121-2			Units: MG/L			Analysis Date: 1/21/2014		
Client ID:		Run ID: AK140121-1A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	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:

1401147-1	1401147-2
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Client: Western Water and Land, Inc.
 Work Order: 1401147
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **IC140116-1-1** Instrument ID **IC** Method: **EPA300.0**

LCS		Sample ID: IC140116-1			Units: MG/L		Analysis Date: 1/16/2014 10:34			
Client ID:		Run ID: IC140116-1A1			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	1.94	0.1	2		97	90-110			15	
CHLORIDE	5.23	0.2	5		105	90-110			15	
NITRITE AS N	1.93	0.1	2		96	90-110			15	
BROMIDE	5.49	0.2	5		110	90-110			15	
NITRATE AS N	5.36	0.2	5		107	90-110			15	
SULFATE	20.2	1	20		101	90-110			15	

MB		Sample ID: IC140116-1			Units: MG/L		Analysis Date: 1/16/2014 10:48			
Client ID:		Run ID: IC140116-1A1			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch:

1401147-1	1401147-2
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Client: Western Water and Land, Inc.
Work Order: 1401147
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **TD140116-2-1** Instrument ID **Balance** Method: **SM2540C**

LCS		Sample ID: TD140116-2			Units: MG/L			Analysis Date: 1/17/2014		
Client ID:		Run ID: TD140117-1A			Prep Date: 1/16/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	406	20	400		102	85-115			5	

MB		Sample ID: TD140116-2			Units: MG/L			Analysis Date: 1/17/2014		
Client ID:		Run ID: TD140117-1A			Prep Date: 1/16/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch:
1401147-1 1401147-2

Client: Western Water and Land, Inc.
Work Order: 1401147
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **TP140116-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS		Sample ID: TP140116-1			Units: MG/L			Analysis Date: 1/16/2014		
Client ID:		Run ID: TP140116-1A			Prep Date: 1/16/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.52	0.05	0.5		104	80-120			20	

MB		Sample ID: TP140116-1			Units: MG/L			Analysis Date: 1/16/2014		
Client ID:		Run ID: TP140116-1A			Prep Date: 1/16/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

The following samples were analyzed in this batch:

1401147-1	1401147-2
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1401148

Case Narrative

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 with the following exception:

The sample had a pH > 2 at the time of analysis.

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 and a "U" flag. If the target analyte is detected (present), then the sample will be reported with a "1" for a result without a flag.



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.

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
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
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 acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1401148

Client Name: Western Water and Land, Inc.

Client Project Name: GV 84-1 BWQ

Client Project Number: 30000.01.81

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Spg GV 84-1	1401148-1		WATER	14-Jan-14	13:30



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 20248

PROJECT NAME 6V 84-1 BWQ		SAMPLER NWS	DATE 1/14/14		WORKORDER # 1401148
FACILITY NAME 6V 84-1		PROJECT NO. 20000181	TURNAROUND Standard		PAGE 1 of 1
FACILITY ID (API)		EDD FORMAT	DISPOSAL Lab		Return to Client
COMPANY NAME Western Water & Land, Inc.		PURCHASE ORDER	Dissolved Metals, lab filtered		
SEND REPORT TO Bruce Smith		BILL TO COMPANY WPX Energy	Anions, Alk, TDS, pH, SpC		
ADDRESS 743 Horizon Court, Suite 330		INVOICE ATTN TO Brandon Danforth	Dissolved gases - HCl preserved		
CITY / STATE / ZIP Grand Junction, CO 81506		ADDRESS 1052 CR 215	Dissolved gases - unpreserved		
PHONE (970) 242-0170		CITY / STATE / ZIP Parachute, CO 81635	Total Phosphorus		
FAX		PHONE (970) 263-2792	DRO		
E-MAIL bsmith@westernwaterandland.com		FAX	GRO		
E-MAIL bsmith@westernwaterandland.com		E-MAIL Brandon.Danforth@wpxenergy.com	BTEX		
Lab ID		Matrix	BART		
Field ID		Sample Date	NG1		
SPG 6V 84-1		Sample Time	✓		
		# Bottles	✓		
		Pres.	✓		
		QC	✓		

Field Parameters

SPG 6V 84-1	Temp (°C)	2.4	DO (%)	590.1	Turb (NTUs)	6.79
	pH (s.u.)	7.410	DO (mg/L)	7.02	Disch (gpm)	
	Temp (°C)		DO (%)		Turb (NTUs)	
	pH (s.u.)		DO (mg/L)		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:

Dissolved metals need to be lab filtered

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RECEIVED BY	<i>[Signature]</i>	SNIDBY KIPP	1/14/14	1520
RELINQUISHED BY		N.P.P.	1-14-14	1600
RECEIVED BY	<i>[Signature]</i>	N.P.P.	1-14-14	1605
RELINQUISHED BY		C Trimble	1-15-14	1330
RECEIVED BY				

Pre-emptive Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 6-NaOH 7-Other 8-4 degrees C 9-5035

Te/KP



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water

Workorder No: 1401148

Project Manager: AW

Initials: CDT Date: 1-15-14

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	[DROP OFF]	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> 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	<input checked="" type="radio"/> YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>4.4</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>11</u>			
Background µR/hr reading: <u>10</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> 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: *AW* 1/16/14

From: (970) 424-4749
Lab Hub, LLC
562 Huntington Point Lane
Clifton, CO 81520

Origin ID: GJTA



Ship Date: 14JAN14
ActWgt: 50.0 LB
CAD: 103923490/NET3430
Dms: 25 X 14 X 15 IN

SHIP TO: (970) 490-1511
Sample Receiving
ALS Environmental- Ft. Collins
225 COMMERCE DR
FORT COLLINS, CO 80524

BILL RECIPIENT



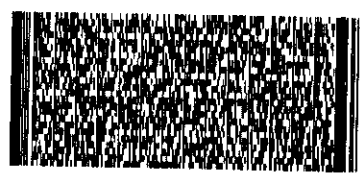
Ref # 1001-011414-5
Invoice #
PO #
Dept #

1401148

11
T

WED - 15 JAN AA
STANDARD OVERNIGHT

TRK# 7976 3484 7382
0291



72 FTCA

80524
CO-US
DEN

4.40



51AG105EC11ARE

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.

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Client: Western Water and Land, Inc.
 Project: 30000.01.81 GV 84-1 BWQ
 Sample ID: Spg GV 84-1
 Legal Location:
 Collection Date: 1/14/2014 13:30

Date: 24-Jan-14
 Work Order: 1401148
 Lab ID: 1401148-1
 Matrix: WATER
 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			SM2320B		Prep Date: 1/21/2014	PrepBy: KMP
BICARBONATE AS CaCO3	330		20	MG/L	1	1/21/2014
CARBONATE AS CaCO3	ND		20	MG/L	1	1/21/2014
TOTAL ALKALINITY AS CaCO3	330		20	MG/L	1	1/21/2014
BIOLOGICAL ACTIVITY REACTION TEST			BART		Prep Date: 1/16/2014	PrepBy: NAQ
IRON RELATED BACTERIA	1		1	NU	1	1/24/2014
SLIME FORMING BACTERIA	1		1	NU	1	1/24/2014
SULFATE REDUCING BACTERIA	1		1	NU	1	1/24/2014
DIESEL RANGE ORGANICS			SW8015M		Prep Date: 1/16/2014	PrepBy: JAC
Diesel Range Organics	ND		0.5	MG/L	1	1/19/2014 14:27
Surr: O-TERPHENYL	105		54-123	%REC	1	1/19/2014 14:27
DISSOLVED GASSES			RSK175		Prep Date: 1/21/2014	PrepBy: TWK
METHANE	ND		1	UG/L	1	1/21/2014 18:01
ETHANE	ND		2	UG/L	1	1/21/2014 18:01
PROPANE	ND		1	UG/L	1	1/21/2014 18:01
GC/MS VOLATILES			SW8260_25		Prep Date: 1/16/2014	PrepBy: SDW
BENZENE	ND		1	UG/L	1	1/16/2014 16:14
TOLUENE	ND		1	UG/L	1	1/16/2014 16:14
ETHYLBENZENE	ND		1	UG/L	1	1/16/2014 16:14
M+P-XYLENE	ND		1	UG/L	1	1/16/2014 16:14
O-XYLENE	ND		1	UG/L	1	1/16/2014 16:14
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	1/16/2014 16:14
TOTAL XYLENES	ND		1	UG/L	1	1/16/2014 16:14
Surr: DIBROMOFLUOROMETHANE	99		84-118	%REC	1	1/16/2014 16:14
Surr: TOLUENE-D8	99		85-115	%REC	1	1/16/2014 16:14
Surr: 4-BROMOFLUOROBENZENE	99		85-115	%REC	1	1/16/2014 16:14
ION CHROMATOGRAPHY			EPA300.0		Prep Date: 1/16/2014	PrepBy: AJD
BROMIDE	ND		0.2	MG/L	1	1/16/2014 11:44
CHLORIDE	4.8		0.2	MG/L	1	1/16/2014 11:44
FLUORIDE	0.19		0.1	MG/L	1	1/16/2014 11:44
NITRATE/NITRITE AS N	0.63		0.1	MG/L	1	1/16/2014 11:44
NITRITE AS N	ND		0.1	MG/L	1	1/16/2014 11:44
NITRATE AS N	0.63		0.2	MG/L	1	1/16/2014 11:44
SULFATE	26		1	MG/L	1	1/16/2014 11:44
METALS BY 200.8			EPA200.8		Prep Date: 1/20/2014	PrepBy: NAQ
BARIIUM	120		1	UG/L	10	1/21/2014 12:27
BORON	69		50	UG/L	10	1/21/2014 12:27
CALCIUM	61000		1000	UG/L	10	1/21/2014 12:27
IRON	ND		100	UG/L	10	1/21/2014 12:27
MAGNESIUM	27000		100	UG/L	10	1/21/2014 12:27
MANGANESE	ND		2	UG/L	10	1/21/2014 12:27

Client: Western Water and Land, Inc.
Project: 30000.01.81 GV 84-1 BWQ
Sample ID: Spg GV 84-1
Legal Location:
Collection Date: 1/14/2014 13:30

Date: 24-Jan-14
Work Order: 1401148
Lab ID: 1401148-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	1700		1000	UG/L	10	1/21/2014 12:27
SELENIUM	1.4		1	UG/L	10	1/21/2014 12:27
SODIUM	42000		1000	UG/L	10	1/21/2014 12:27
STRONTIUM	540		1	UG/L	10	1/21/2014 12:27
PH			SM4500-H		Prep Date: 1/17/2014	PrepBy: AJD
PH	8.39		0.1	pH	1	1/17/2014
SPECIFIC CONDUCTANCE IN WATER			SM2510B		Prep Date: 1/16/2014	PrepBy: KMP
SPECIFIC CONDUCTIVITY	628		1	umhos/cm	1	1/16/2014
TOTAL DISSOLVED SOLIDS			SM2540C		Prep Date: 1/16/2014	PrepBy: KMP
TOTAL DISSOLVED SOLIDS	380		20	MG/L	1	1/17/2014
TOTAL PHOSPHORUS AS P			EPA365.2		Prep Date: 1/16/2014	PrepBy: AJD
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	1/16/2014

Client: Western Water and Land, Inc.
Project: 30000.01.81 GV 84-1 BWQ
Sample ID: Spg GV 84-1
Legal Location:
Collection Date: 1/14/2014 13:30

Date: 24-Jan-14
Work Order: 1401148
Lab ID: 1401148-1
Matrix: WATER
Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	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.

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

ALS Environmental -- FC

Date: 1/24/2014 1:39:

Client: Western Water and Land, Inc.
 Work Order: 1401148
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **EX140116-4-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: EX140116-4			Units: MG/L		Analysis Date: 1/19/2014 11:49			
Client ID:		Run ID: HC140118-3A			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	9.91	0.5	10		99	36-150			20	
Surr: O-TERPHENYL	1.25		1.25		100	54-123				

MB		Sample ID: EX140116-4			Units: MG/L		Analysis Date: 1/19/2014 10:46			
Client ID:		Run ID: HC140118-3A			Prep Date: 1/16/2014		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.5								
Surr: O-TERPHENYL	1.3		1.25		104	54-123				

The following samples were analyzed in this batch: 1401148-1

Client: Western Water and Land, Inc.
 Work Order: 1401148
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **HC140121-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS		Sample ID: HC140121-9			Units: UG/L			Analysis Date: 1/21/2014 17:11		
Client ID:		Run ID: HC140121-9A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	168	1	142		118	80-120			25	
ETHANE	313	2	267		117	80-120			25	
PROPANE	451	1	391		115	80-120			25	

LCSD		Sample ID: HC140121-9			Units: UG/L			Analysis Date: 1/21/2014 18:12		
Client ID:		Run ID: HC140121-9A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	168	1	142		118	80-120	168	0	25	
ETHANE	312	2	267		117	80-120	313	0	25	
PROPANE	443	1	391		113	80-120	451	2	25	

MB		Sample ID: HC140121-9			Units: UG/L			Analysis Date: 1/21/2014 17:30		
Client ID:		Run ID: HC140121-9A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

The following samples were analyzed in this batch:

1401148-1

Client: Western Water and Land, Inc.
 Work Order: 1401148
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **IP140120-1-1** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS		Sample ID: FP140120-1			Units: UG/L			Analysis Date: 1/21/2014 11:41			
Client ID:		Run ID: IM140121-11A3			Prep Date: 1/20/2014			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	101	1	100		101	85-115			20		
BORON	953	50	1000		95	85-115			20		
CALCIUM	9160	1000	10000		92	85-115			20		
IRON	4880	100	5000		98	85-115			20		
MAGNESIUM	9370	100	10000		94	85-115			20		
MANGANESE	189	2	200		94	85-115			20		
POTASSIUM	4450	1000	5000		89	85-115			20		
SELENIUM	100	1	100		100	85-115			20		
SODIUM	9120	1000	10000		91	85-115			20		
STRONTIUM	97.7	1	100		98	85-115			20		

MB		Sample ID: FP140120-1			Units: UG/L			Analysis Date: 1/21/2014 11:31			
Client ID:		Run ID: IM140121-11A3			Prep Date: 1/20/2014			DF: 10			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BARIUM	ND	1									
BORON	ND	50									
CALCIUM	ND	1000									
IRON	ND	100									
MAGNESIUM	ND	100									
MANGANESE	ND	2									
POTASSIUM	ND	1000									
SELENIUM	ND	1									
SODIUM	ND	1000									
STRONTIUM	ND	1									

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
 Work Order: 1401148
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: VL140116-4-1 Instrument ID HPV1 Method: SW8260_25

LCS		Sample ID: VL140116-4			Units: UG/L			Analysis Date: 1/16/2014 11:40			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	10.3	1	10		103	83-117			20		
TOLUENE	10.3	1	10		103	82-113			20		
ETHYLBENZENE	10.7	1	10		107	81-113			20		
M+P-XYLENE	20.5	1	20		103	82-115			20		
O-XYLENE	10.6	1	10		106	81-115			20		
Surr: DIBROMOFLUOROMETHA	25		25		100	84-118					
Surr: TOLUENE-D8	25		25		100	85-115					
Surr: 4-BROMOFLUOROBENZE	24.8		25		99	85-115					

LCS		Sample ID: VL140116-7			Units: UG/L			Analysis Date: 1/16/2014 13:11			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	579	100	500		116	80-120			20		

LCSD		Sample ID: VL140116-4			Units: UG/L			Analysis Date: 1/16/2014 12:03			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
BENZENE	9.79	1	10		98	83-117	10.3	5	20		
TOLUENE	9.65	1	10		96	82-113	10.3	6	20		
ETHYLBENZENE	10.3	1	10		103	81-113	10.7	4	20		
M+P-XYLENE	19.7	1	20		98	82-115	20.5	4	20		
O-XYLENE	9.95	1	10		100	81-115	10.6	6	20		
Surr: DIBROMOFLUOROMETHA	24.9		25		100	84-118		1			
Surr: TOLUENE-D8	25.3		25		101	85-115		1			
Surr: 4-BROMOFLUOROBENZE	24		25		96	85-115		3			

LCSD		Sample ID: VL140116-7			Units: UG/L			Analysis Date: 1/16/2014 13:34			
Client ID:		Run ID: VL140116-4A			Prep Date: 1/16/2014			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual	
GASOLINE RANGE ORGANICS	572	100	500		114	80-120	579	1	20		

Client: Western Water and Land, Inc.
Work Order: 1401148
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **VL140116-4-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL140116-4** Units: **UG/L** Analysis Date: **1/16/2014 14:20**
 Client ID: Run ID: **VL140116-4A** Prep Date: **1/16/2014** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
TOTAL XYLENES	ND	1								
Surr: DIBROMOFLUOROMETHA	25.1		25		100	84-118				
Surr: TOLUENE-D8	24.9		25		100	85-115				
Surr: 4-BROMOFLUOROBENZE	25.1		25		100	85-115				

The following samples were analyzed in this batch: 1401148-1

Client: Western Water and Land, Inc.
Work Order: 1401148
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **AK140121-2-1** Instrument ID **NONE** Method: **SM2320B**

LCS		Sample ID: AK140121-2			Units: MG/L			Analysis Date: 1/21/2014		
Client ID:		Run ID: AK140121-1A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	100	5	100		100	85-115			15	

MB		Sample ID: AK140121-2			Units: MG/L			Analysis Date: 1/21/2014		
Client ID:		Run ID: AK140121-1A			Prep Date: 1/21/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	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: 1401148
 Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **IC140116-1-1** Instrument ID **IC** Method: **EPA300.0**

LCS		Sample ID: IC140116-1			Units: MG/L			Analysis Date: 1/16/2014 10:34		
Client ID:		Run ID: IC140116-1A1			Prep Date: 1/16/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	1.94	0.1	2		97	90-110			15	
CHLORIDE	5.23	0.2	5		105	90-110			15	
NITRITE AS N	1.93	0.1	2		96	90-110			15	
BROMIDE	5.49	0.2	5		110	90-110			15	
NITRATE AS N	5.36	0.2	5		107	90-110			15	
SULFATE	20.2	1	20		101	90-110			15	

MB		Sample ID: IC140116-1			Units: MG/L			Analysis Date: 1/16/2014 10:48		
Client ID:		Run ID: IC140116-1A1			Prep Date: 1/16/2014			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch:

Client: Western Water and Land, Inc.
Work Order: 1401148
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **TD140116-2-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD140116-2** Units: **MG/L** Analysis Date: **1/17/2014**
 Client ID: Run ID: **TD140117-1A** Prep Date: **1/16/2014** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	406	20	400		102	85-115			5	

MB Sample ID: **TD140116-2** Units: **MG/L** Analysis Date: **1/17/2014**
 Client ID: Run ID: **TD140117-1A** Prep Date: **1/16/2014** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch: 1401148-1

Client: Western Water and Land, Inc.
Work Order: 1401148
Project: 30000.01.81 GV 84-1 BWQ

QC BATCH REPORT

Batch ID: **TP140116-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS Sample ID: **TP140116-1** Units: **MG/L** Analysis Date: **1/16/2014**
 Client ID: Run ID: **TP140116-1A** Prep Date: **1/16/2014** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.52	0.05	0.5		104	80-120			20	

MB Sample ID: **TP140116-1** Units: **MG/L** Analysis Date: **1/16/2014**
 Client ID: Run ID: **TP140116-1A** Prep Date: **1/16/2014** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

The following samples were analyzed in this batch:

1401148-1
