ALS Environmental
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January 07, 2016

Analytical Report for Service Request No: K1514149

Matt Place
Battelle
505 King Avenue
Columbus, OH 43201

RE: MRCSP Bagley Field / G006098

Dear Matt,

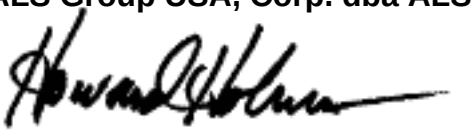
Enclosed are the results of the sample(s) submitted to our laboratory December 11, 2015
For your reference, these analyses have been assigned our service request number **K1514149.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental



Howard Holmes
Project Manager

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Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

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ALS ENVIRONMENTAL

Client:	Battelle	**Service Request No.:**	K1514149
Project:	MRCSP Bagley Field/ G006098	**Date Received:**	12/11/15
Sample Matrix:	Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Two water samples were received for analysis at ALS Environmental on 12/11/15. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

Nitrite as Nitrogen by EPA Method 353.2 and Total Dissolved Solids by Standard Method 2540 C:
Samples J-M-1-11 and J-S3-11 were received past holding time. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Nitrite as Nitrogen by EPA Method 353.2:
The detection limit was elevated in sample J-S3-11. The samples were elevated due to matrix interference which was affecting the Continuing Calibration Verification (CCV). The matrix interference prevented adequate resolution of the target compound at the normal limit. The result was flagged to indicate the matrix interference.

Nitrate + Nitrate as Nitrogen by EPA Method 353.2:
The detection limit was elevated in samples J-M 1-11 and J-S3-11. The samples were elevated due to matrix interference which was affecting the Continuing Calibration Verification (CCV). The matrix interference prevented adequate resolution of the target compound at the normal limit. The results were flagged to indicate the matrix interference.

Total and Dissolved Inorganic Carbon and Total Organic Carbon by Standard Method 5310 C:
The detection limit was elevated in samples J-M 1-11 and J-S3-11. The matrix interference prevented adequate resolution of the target compound at the normal limit. The samples MRL were elevated due to sample matrix (oily). The results were flagged to indicate the matrix interference.

The matrix spike recovery for sample J-M 1-11 was outside control criteria because of suspected matrix interference. As a result of the interference, the results for this analyte contained a potential low bias. No further corrective action was taken.

No other anomalies associated with the analysis of these samples were observed.

Approved by_____

Dissolved Metals

Matrix Spike Recovery Exceptions:
The control criteria for matrix spike recovery of Boron, Calcium, Magnesium, Potassium, Sodium, and Strontium for sample J-M 1-11 were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Relative Percent Difference Exceptions:
The Relative Percent Difference (RPD) for the replicate analysis of Selenium in sample J-M 1-11 was outside the normal CAS control limits (22% RPD versus a control limit of 20%). The associated QA/QC results (e.g. control sample, matrix spike, method blank, calibration standards, etc.) indicate the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Dissolved Gases by RSK-175

This analysis was performed at ALS Environmental, Simi Valley. The data for this analysis is included in the corresponding section of this report.

Approved by 

Chain of Custody

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ALS Environmental

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SR# ______

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PAGE 1 OF 1 COC# ______

PROJECT NAME: MRCSP BAGLEY FIELD
PROJECT NUMBER: G006098
PROJECT MANAGER: MATT PLACE
COMPANY NAME: BATTELLE
ADDRESS: 505 KING AVE
CITY/STATE/ZIP: COLUMBUS, OH 43201
E-MAIL ADDRESS: PLACE@BATTELLE.ORG
PHONE #: 614-206-7422 FAX #:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS		Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity ☒ CO3 ☒ HCO3 ☒	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☒	SPECIFIC GRAVITY	DIC	SILICA	REMARKS
J-M 1-11	12/6/15	11:46		AQ										X		X	X		X		X	X	X	X	HIGH TDS
J-S 3-11	12/6/15	12:11		AQ										X		X	X		X		X	X	X	X	↓

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # ______
Bill To: ______

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results
______ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg Li

***INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: ______ (CIRCLE ONE)**

SPECIAL INSTRUCTIONS/COMMENTS:
VERY HIGH TDS ON ALL SAMPLES

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
[signature]	12/9/15 17:00	K Smith	12/11/15 0940				
Signature	Date/Time	Signature	Date/Time	Signature	Date/Time	Signature	Date/Time
		K Smith	ALS				
Printed Name	Firm	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

Anna Rynevich

From: Howard Holmes
Sent: Wednesday, December 09, 2015 10:24 AM
To: Karla Smith; Sydney Wolf; Anna Rynevich; Les Kennedy; Kelly Reed; Fran Adair
Cc: place@battelle.org
Subject: Battelle/Matt Place

We should receive two water samples tomorrow from Matt Place with Battelle.
Please log them in under
Battelle/Illinois-Michigan Deep Well Groundwater

Matt,
I will need a PO# for this project.

Thanks....H2

Please note that ALS-Kelso will be closed on December 24-26 & Jan 1-2 for the Holidays.

Take our short online customer survey for a chance to win a FREE iPad!

Howard Holmes

Project Manager
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PC H2

Cooler Receipt and Preservation Form

Client / Project: Battelle Service Request *K15* 14149

Received: 12/11/15 Opened: 12/11/15 By: KD Unloaded: 12/11/15 By: KD

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where?_____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
10.7	10.9	—	—	+.2	371		7818 9728 4771	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA ~~Y~~ N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
All Samples	Various	X								
All Samples	40ml		X							
J-S3-11	1of3 40ml			X						

Notes, Discrepancies, & Resolutions: Rec'd 2 - 250ml yellow bottles for J-S3-11 and none for J-M1-11.

SHORT HOLD TIME

*Page*____ *of*____

General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	120.1	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**51900**	2.0	1	12/21/15 10:23	
J-S3-11	K1514149-002	**52700**	2.0	1	12/21/15 10:23	
Method Blank	K1514149-MB1	ND U	2.0	1	12/21/15 10:23	
Method Blank	K1514149-MB2	ND U	2.0	1	12/21/15 10:23	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/21/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1514325-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1514325-001DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	120.1	2.0	34400	34200	34300	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/21/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	120.1	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	477279

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	285	289	99	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Bromide

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
J-M 1-11	K1514149-001	**2940**	500	10000	12/15/15 10:26	12/15/15	
J-S3-11	K1514149-002	**2810**	500	10000	12/15/15 10:36	12/15/15	
Method Blank	K1514149-MB1	ND U	0.050	1	12/15/15 08:56	12/15/15	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/15/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514806-04	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1514806-04DUP Result	Average	RPD	RPD Limit
Bromide	300.0	0.10	ND U	ND U	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/15/15
		Date Extracted:	12/15/15

Duplicate Matrix Spike Summary
Bromide

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514806-04	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike			Duplicate Matrix Spike					
		KQ1514806-04MS			KQ1514806-04DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	ND U	9.52	10.0	95	9.62	10.0	96	90-110	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/15/15
Sample Matrix:	Water	**Date Extracted:**	12/15/15

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	476548

	Lab Control Sample K1514149-LCS2			Duplicate Lab Control Sample K1514149-DLCS2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bromide	2.39	2.50	96	2.40	2.50	96	90-110	<1	20

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
J-M 1-11	K1514149-001	**270000**	10000	100000	12/15/15 12:07	12/15/15	
J-S3-11	K1514149-002	**265000**	10000	100000	12/15/15 12:16	12/15/15	
Method Blank	K1514149-MB1	ND U	0.10	1	12/15/15 08:56	12/15/15	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/15/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514806-04	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1514806-04DUP Result	Average	RPD	RPD Limit
Chloride	300.0	0.20	0.80	0.80	0.800	<1	20

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/15/15
		Date Extracted:	12/15/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514806-04	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1514806-04MS			Duplicate Matrix Spike KQ1514806-04DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	0.80	10.3	10.0	95	10.3	10.0	95	90-110	<1	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/15/15
Sample Matrix:	Water	**Date Extracted:**	12/15/15

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	476548

	Lab Control Sample K1514149-LCS2			Duplicate Lab Control Sample K1514149-DLCS2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	4.68	5.00	94	4.68	5.00	94	90-110	<1	20

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
J-M 1-11	K1514149-001	**83**	10	100	12/15/15 12:25	12/15/15	
J-S3-11	K1514149-002	**152**	10	100	12/15/15 12:34	12/15/15	
Method Blank	K1514149-MB1	ND U	0.10	1	12/15/15 08:56	12/15/15	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/15/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514806-04	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1514806-04DUP Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	14.9	14.5	14.7	2	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/15/15
		Date Extracted:	12/15/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514806-04	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike			Duplicate Matrix Spike					
		KQ1514806-04MS			KQ1514806-04DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	14.9	24.2	10.0	93	24.3	10.0	94	90-110	<1	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/15/15
Sample Matrix:	Water	**Date Extracted:**	12/15/15

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	476548

	Lab Control Sample K1514149-LCS2			Duplicate Lab Control Sample K1514149-DLCS2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	5.04	5.00	101	5.07	5.00	101	90-110	<1	20

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	353.2	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	ND U	0.050	1	12/15/15 16:56	*
J-S3-11	K1514149-002	**ND Ui**	0.50	10	12/15/15 16:56	*
Method Blank	K1514149-MB1	ND U	0.050	1	12/15/15 16:56	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
		Date Analyzed:	12/15/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	J-M 1-11	**Units:**	mg/L
Lab Code:	K1514149-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1514149-001DUP1 Result	Average	RPD	RPD Limit
Nitrite as Nitrogen	353.2	0.50	ND U	ND U	NC	NC	20

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
		Date Analyzed:	12/15/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Nitrite as Nitrogen

Sample Name:	J-M 1-11	**Units:**	mg/L
Lab Code:	K1514149-001	**Basis:**	NA
Analysis Method:	353.2		
Prep Method:	None		

		Matrix Spike K1514149-001MS1			**Duplicate Matrix Spike** K1514149-001DMS1					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrite as Nitrogen	ND U	9.72	10.0	97	9.83	10.0	98	90-110	1	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/15/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Nitrite as Nitrogen

Analysis Method:	353.2	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	477091

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	106	100	106	90-110

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	353.2	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
J-M 1-11	K1514149-001	**ND Ui**	0.50	10	12/17/15 12:10	12/17/15	
J-S3-11	K1514149-002	**ND Ui**	0.50	10	12/17/15 12:10	12/17/15	
Method Blank	K1514149-MB1	ND U	0.050	1	12/17/15 12:10	12/17/15	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	353.2	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary

Nitrate+Nitrite as Nitrogen

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1514012-001DUP	0.050	0.276	0.274	0.275	<1	20	12/17/15
Batch QC	K1514062-005DUP	0.050	ND U	ND U	NC	NC	20	12/17/15

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/17/15
		Date Extracted:	12/17/15

Duplicate Matrix Spike Summary
Nitrate+Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1514012-001	**Basis:**	NA
Analysis Method:	353.2		
Prep Method:	Method		

		Matrix Spike K1514012-001MS			Duplicate Matrix Spike K1514012-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate+Nitrite as Nitrogen	0.276	1.25	1.00	97	1.25	1.00	97	90-110	<1	20

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/17/15
		Date Extracted:	12/17/15

Duplicate Matrix Spike Summary
Nitrate+Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1514062-005	**Basis:**	NA
Analysis Method:	353.2		
Prep Method:	Method		

		Matrix Spike K1514062-005MS			Duplicate Matrix Spike K1514062-005DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate+Nitrite as Nitrogen	ND U	0.919	1.00	92	0.914	1.00	91	90-110	1	20

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/17/15
Sample Matrix:	Water	**Date Extracted:**	12/17/15

Lab Control Sample Summary
Nitrate+Nitrite as Nitrogen

Analysis Method:	353.2	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	476976

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	13.8	15.3	90	90-110

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/2015
Sample Matrix:	Water	**Date Received:**	12/11/2015

Nitrate as Nitrogen

Prep Method:	NONE	Units:	mg/L
Analysis Method:	Calculation	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
J-M 1-11	K1514149-001	-	1	NA	12/17/2015	ND	
J-S3-11	K1514149-002	-	1	NA	12/17/2015	ND	

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Alkalinity as CaCO3, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**297**	15	1	12/18/15 16:36	
J-S3-11	K1514149-002	**296**	15	1	12/18/15 16:36	
Method Blank	K1514149-MB1	**6 J**	15	1	12/18/15 16:36	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Alkalinity as CaCO3, Total

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1514012-001DUP	15	79	79	79.2	<1	20	12/18/15
Batch QC	K1514200-010DUP	15	115	116	116	<1	20	12/18/15

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/18/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Alkalinity as CaCO3, Total

Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	477119

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	132	136	97	90-110

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Bicarbonate as CaCO3

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**297**	15	1	12/18/15 16:36	
J-S3-11	K1514149-002	**296**	15	1	12/18/15 16:36	
Method Blank	K1514149-MB1	ND U	15	1	12/18/15 16:36	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/18/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514996-05	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1514996-05DUP Result	Average	RPD	RPD Limit
Bicarbonate as CaCO3	SM 2320 B	15	79	79	79.2	<1	20

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbonate as CaCO3

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	ND U	15	1	12/18/15 16:36	
J-S3-11	K1514149-002	ND U	15	1	12/18/15 16:36	
Method Blank	K1514149-MB1	ND U	15	1	12/18/15 16:36	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/18/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514996-05	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1514996-05DUP Result	Average	RPD	RPD Limit
Carbonate as CaCO3	SM 2320 B	15	ND U	ND U	NC	NC	20

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 2320 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Hydroxide as CaCO3

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	ND U	15	1	12/18/15 16:36	
J-S3-11	K1514149-002	ND U	15	1	12/18/15 16:36	
Method Blank	K1514149-MB1	ND U	15	1	12/18/15 16:36	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/18/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514996-05	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample KQ1514996-05DUP Result	Average	RPD	RPD Limit
Hydroxide as CaCO3	SM 2320 B	15	ND U	ND U	NC	NC	20

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 2520 B	**Units:**	g/Kg
Prep Method:	None	**Basis:**	NA

Salinity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**368**	40	20	12/16/15 11:41	
J-S3-11	K1514149-002	**348**	40	20	12/16/15 11:41	
Method Blank	K1514149-MB1	ND U	2.0	1	12/16/15 11:41	
Method Blank	K1514149-MB2	ND U	2.0	1	12/16/15 11:41	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/16/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	g/Kg
Lab Code:	K1514152-003	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1514152-003DUP Result	Average	RPD	RPD Limit
Salinity	SM 2520 B	2.0	31.4	31.3	31.4	<1	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/16/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Salinity

Analysis Method:	SM 2520 B	**Units:**	g/Kg
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	476653

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	16.5	17.5	94	85-115

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**424000**	100	1	12/15/15 17:19	*
J-S3-11	K1514149-002	**409000**	100	1	12/15/15 17:19	*
Method Blank	K1514149-MB1	ND U	5.0	1	12/15/15 17:19	
Method Blank	K1514149-MB2	ND U	5.0	1	12/15/15 17:19	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1514018-001DUP	10	488	493	491	1	10	12/15/15
Batch QC	K1514260-001DUP	10	424	439	432	3	10	12/15/15

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/15/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	476462

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	698	714	98	85-115

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 2710 F	**Units:**	NONE
Prep Method:	None	**Basis:**	NA

Specific Gravity

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**1.2900**	-	1	12/18/15 14:00	
J-S3-11	K1514149-002	**1.2400**	-	1	12/18/15 14:00	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
		Date Analyzed:	12/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	J-M 1-11	**Units:**	NONE
Lab Code:	K1514149-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1514149-001DUP1 Result	Average	RPD	RPD Limit
Specific Gravity	SM 2710 F	-	1.2900	1.2800	1.29	<1	20

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 4500-F- C Modified	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**0.20**	0.20	1	12/18/15 08:45	
J-S3-11	K1514149-002	**0.26**	0.20	1	12/18/15 08:45	
Method Blank	K1514149-MB1	ND U	0.20	1	12/18/15 08:45	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/18/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1514325-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1514325-001DUP Result	Average	RPD	RPD Limit
Fluoride	SM 4500-F- C Modified	0.20	1.09	1.12	1.11	3	20

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/18/15
		Date Extracted:	NA

Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1514325-001	**Basis:**	NA
Analysis Method:	SM 4500-F- C Modified		
Prep Method:	None		

Matrix Spike
K1514325-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Fluoride	1.09	23.2	25.0	88	74-128

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/18/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Fluoride

Analysis Method:	SM 4500-F- C Modified	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	477041

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	9.12	8.52	107	87-117

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 4500-H+ B	**Units:**	pH Units
Prep Method:	None	**Basis:**	NA

pH

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**4.83**	-	1	12/15/15 18:56	H
J-S3-11	K1514149-002	**4.90**	-	1	12/15/15 19:00	H

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/15/15

Replicate Sample Summary

General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	pH Units
Lab Code:	K1514242-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1514242-001DUP Result	Average	RPD	RPD Limit
pH	SM 4500-H+ B	-	8.47	8.48	8.48	<1	20

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/15/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
pH

Analysis Method:	SM 4500-H+ B	**Units:**	pH Units
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	476459

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	8.26	8.32	99	85-115

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 4500-SiO2 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Silica, Dissolved as SiO2

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**0.967**	0.060	1	12/19/15 12:38	
J-S3-11	K1514149-002	**0.690**	0.060	1	12/19/15 12:38	
Method Blank	K1514149-MB1	ND U	0.060	1	12/19/15 12:38	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1514091-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1514091-001DUP Result	Average	RPD	RPD Limit
Silica, Dissolved as SiO2	SM 4500-SiO2 C	0.60	15.6	15.6	15.6	<1	20

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/19/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Silica, Dissolved as SiO2

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1514091-001	**Basis:**	NA
Analysis Method:	SM 4500-SiO2 C		
Prep Method:	None		

		Matrix Spike K1514091-001MS			Duplicate Matrix Spike K1514091-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Silica, Dissolved as SiO2	15.6	25.1	10.0	95	25.1	10.0	95	73-130	<1	20

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/19/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Silica, Dissolved as SiO2

Analysis Method:	SM 4500-SiO2 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	477168

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	0.984	1.00	98	85-117

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Inorganic

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**ND Ui**	20	10	12/17/15 19:04	
J-S3-11	K1514149-002	**ND Ui**	40	20	12/17/15 19:04	
Method Blank	K1514149-MB2	ND U	2.0	1	12/17/15 19:04	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Carbon, Total Inorganic

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
J-M 1-11	K1514149-001DUP2	20	ND Ui	ND U	NC	NC	10	12/17/15
J-S3-11	K1514149-002DUP2	40	ND Ui	ND U	NC	NC	10	12/17/15

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
		Date Analyzed:	12/17/15
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Inorganic

Sample Name:	J-M 1-11	**Units:**	mg/L
Lab Code:	K1514149-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K1514149-001MS2

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Inorganic	ND Ui	197	250	79 *	83-117

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/17/15
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	476897

	Lab Control Sample K1514149-LCS3			Duplicate Lab Control Sample K1514149-DLCS3					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Total Inorganic	23.7	25.0	95	23.6	25.0	94	83-117	<1	10

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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Dissolved Inorganic

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**ND Ui**	20	10	12/17/15 19:04	
J-S3-11	K1514149-002	**ND Ui**	40	20	12/17/15 19:04	
Method Blank	K1514149-MB2	ND U	2.0	1	12/17/15 19:04	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Carbon, Dissolved Inorganic

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
J-M 1-11	K1514149-001DUP2	20	ND Ui	ND U	NC	NC	10	12/17/15
J-S3-11	K1514149-002DUP2	40	ND Ui	ND U	NC	NC	10	12/17/15

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
		Date Analyzed:	12/16/15
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Dissolved Inorganic

Sample Name:	J-M 1-11	**Units:**	mg/L
Lab Code:	K1514149-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K1514149-001MS1

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Dissolved Inorganic	ND Ui	230	1250	18 *	83-117

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/17/15
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	476898

	Lab Control Sample K1514149-LCS3			Duplicate Lab Control Sample K1514149-DLCS3					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Dissolved Inorganic	23.7	25.0	95	23.6	25.0	94	83-117	<1	10

ALS Group USA, Corp.
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Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Dissolved Organic (DOC)

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**ND Ui**	25	50	12/14/15 18:51	
J-S3-11	K1514149-002	**ND Ui**	250	500	12/14/15 18:51	
Method Blank	K1514149-MB1	ND U	0.50	1	12/14/15 18:51	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Carbon, Dissolved Organic (DOC)

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
J-M 1-11	K1514149-001DUP1	25	ND Ui	ND U	NC	NC	10	12/14/15
J-S3-11	K1514149-002DUP1	250	ND Ui	ND U	NC	NC	10	12/14/15

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Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
		Date Analyzed:	12/14/15
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Dissolved Organic (DOC)

Sample Name:	J-M 1-11	**Units:**	mg/L
Lab Code:	K1514149-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K1514149-001MS1

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Dissolved Organic (DOC)	ND Ui	551	1250	44 *	83-117

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/14/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Dissolved Organic (DOC)

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	476249

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	19.5	19.8	99	83-117

Analytical Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/6/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Carbon, Total Organic

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
J-M 1-11	K1514149-001	**ND Ui**	25	50	12/14/15 18:51	
J-S3-11	K1514149-002	**ND Ui**	250	500	12/14/15 18:51	
Method Blank	K1514149-MB1	ND U	0.50	1	12/14/15 18:51	

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary

Carbon, Total Organic

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
J-M 1-11	K1514149-001DUP1	25	ND Ui	ND U	NC	NC	10	12/14/15
J-S3-11	K1514149-002DUP1	250	ND Ui	ND U	NC	NC	10	12/14/15

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QA/QC Report

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Collected:**	12/06/15
Sample Matrix:	Water	**Date Received:**	12/11/15
		Date Analyzed:	12/14/15
		Date Extracted:	NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name:	J-M 1-11	**Units:**	mg/L
Lab Code:	K1514149-001	**Basis:**	NA
Analysis Method:	SM 5310 C		
Prep Method:	None		

Matrix Spike
K1514149-001MS1

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	ND Ui	497	1250	40 *	83-117

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	K1514149
Project:	MRCSP Bagley Field/G006098	**Date Analyzed:**	12/14/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	476248

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1514149-LCS1	19.0	19.8	96	83-117

Metals

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Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Battelle
Project No.: G006098
Project Name: MRCSP Bagley Field
Matrix: WATER

Service Request: K1514149
Date Collected: 12/6/2015
Date Received: 12/11/2015
Units: ug/L
Basis: NA

Sample Name: J-M 1-11
Lab Code: K1514149-001DISS

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.7	500	10.0	12/16/15	01/06/16	500	U	
Antimony	200.8	10.0	10.0	12/16/15	12/23/15	10.0	U	
Arsenic	200.8	5.0	1.0	12/17/15	12/28/15	5.0	U	
Barium	200.8	10.0	10.0	12/16/15	12/23/15	664		
Beryllium	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Boron	200.7	1000	10.0	12/16/15	01/06/16	209000		
Cadmium	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Calcium	200.7	10000	100.0	12/16/15	01/05/16	110000000		
Chromium	200.8	2.0	1.0	12/17/15	12/28/15	2.0	U	
Cobalt	200.8	0.20	1.0	12/17/15	12/28/15	1.900		
Copper	200.8	1.00	1.0	12/17/15	12/28/15	7.01		
Iron	200.7	1000	10.0	12/16/15	01/06/16	10000		
Lead	200.8	0.20	1.0	12/17/15	12/28/15	4.14		
Lithium	200.7	1000	10.0	12/16/15	01/06/16	82000		
Magnesium	200.7	2500	100.0	12/16/15	01/05/16	12100000		
Manganese	200.7	50.0	10.0	12/16/15	01/06/16	1360		
Nickel	200.8	2.0	1.0	12/17/15	12/28/15	22.0		
Potassium	200.7	100000	100.0	12/16/15	01/05/16	16600000		
Selenium	7742	1.00	2.0	12/17/15	12/21/15	10.4		*
Silver	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Sodium	200.7	100000	100.0	12/16/15	01/05/16	15300000		
Strontium	200.7	500	100.0	12/16/15	01/05/16	4250000		
Thallium	200.8	0.20	1.0	12/17/15	12/28/15	12.4		
Titanium	200.7	100	10.0	12/16/15	01/06/16	795		
Zinc	200.8	5.0	1.0	12/17/15	12/28/15	695		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Battelle	**Service Request:**	K1514149
Project No.:	G006098	**Date Collected:**	12/6/2015
Project Name:	MRCSP Bagley Field	**Date Received:**	12/11/2015
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **J-S3-11** **Lab Code:** **K1514149-002DISS**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.7	500	10.0	12/16/15	01/06/16	500	U	
Antimony	200.8	10.0	10.0	12/16/15	12/23/15	10.0	U	
Arsenic	200.8	5.0	1.0	12/17/15	12/28/15	5.0	U	
Barium	200.8	10.0	10.0	12/16/15	12/23/15	733		
Beryllium	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Boron	200.7	1000	10.0	12/16/15	01/06/16	199000		
Cadmium	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Calcium	200.7	10000	100.0	12/16/15	01/05/16	107000000		
Chromium	200.8	2.0	1.0	12/17/15	12/28/15	4.6		
Cobalt	200.8	0.20	1.0	12/17/15	12/28/15	1.300		
Copper	200.8	1.00	1.0	12/17/15	12/28/15	6.14		
Iron	200.7	1000	10.0	12/16/15	01/06/16	12900		
Lead	200.8	0.20	1.0	12/17/15	12/28/15	2.55		
Lithium	200.7	1000	10.0	12/16/15	01/06/16	78000		
Magnesium	200.7	2500	100.0	12/16/15	01/05/16	11400000		
Manganese	200.7	50.0	10.0	12/16/15	01/06/16	1330		
Nickel	200.8	2.0	1.0	12/17/15	12/28/15	23.1		
Potassium	200.7	100000	100.0	12/16/15	01/05/16	15500000		
Selenium	7742	1.00	2.0	12/17/15	12/21/15	10.7		*
Silver	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Sodium	200.7	100000	100.0	12/16/15	01/05/16	16900000		
Strontium	200.7	500	100.0	12/16/15	01/05/16	3990000		
Thallium	200.8	0.20	1.0	12/17/15	12/28/15	10.1		
Titanium	200.7	100	10.0	12/16/15	01/06/16	290		
Zinc	200.8	5.0	1.0	12/17/15	12/28/15	452		

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Battelle
Service Request: K1514149
Project No.: G006098
Date Collected:
Project Name: MRCSP Bagley Field
Date Received:
Matrix: WATER
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1514792-01

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	200.7	10.0	1.0	12/16/15	01/06/16	10.0	U	
Boron	200.7	20.0	1.0	12/16/15	01/06/16	20.0	U	
Calcium	200.7	20.0	1.0	12/16/15	01/06/16	20.0	U	
Iron	200.7	20.0	1.0	12/16/15	01/06/16	20.0	U	
Lithium	200.7	20.0	1.0	12/16/15	01/06/16	20.0	U	
Magnesium	200.7	5.0	1.0	12/16/15	01/06/16	5.0	U	
Manganese	200.7	1.0	1.0	12/16/15	01/06/16	1.0	U	
Potassium	200.7	200	1.0	12/16/15	01/06/16	200	U	
Sodium	200.7	200	1.0	12/16/15	01/06/16	200	U	
Strontium	200.7	1.0	1.0	12/16/15	01/06/16	1.0	U	
Titanium	200.7	2.0	1.0	12/16/15	01/06/16	2.0	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Battelle	**Service Request:**	K1514149
Project No.:	G006098	**Date Collected:**	
Project Name:	MRCSP Bagley Field	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **Method Blank** **Lab Code:** **KQ1514793-01**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Selenium	**7742**	**1.00**	**2.0**	**12/17/15**	**12/21/15**	**1.00**	**U**	*

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Battelle	**Service Request:**	K1514149
Project No.:	G006098	**Date Collected:**	
Project Name:	MRCSP Bagley Field	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	NA

Sample Name: **Method Blank** **Lab Code:** **KQ1514794-01**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Antimony	**200.8**	**0.05**	**1.0**	**12/16/15**	**12/23/15**	**0.05**	**U**	
Barium	**200.8**	**0.05**	**1.0**	**12/16/15**	**12/23/15**	**0.05**	**U**	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Battelle
Project No.: G006098
Project Name: MRCSP Bagley Field
Matrix: WATER

Service Request: K1514149
Date Collected:
Date Received:
Units: ug/L
Basis: NA

Sample Name: Method Blank
Lab Code: KQ1514795-01

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	200.8	5.0	1.0	12/17/15	12/28/15	5.0	U	
Beryllium	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Cadmium	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Chromium	200.8	2.0	1.0	12/17/15	12/28/15	2.0	U	
Cobalt	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Copper	200.8	1.00	1.0	12/17/15	12/28/15	1.00	U	
Lead	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Nickel	200.8	2.0	1.0	12/17/15	12/28/15	2.0	U	
Silver	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Thallium	200.8	0.20	1.0	12/17/15	12/28/15	0.20	U	
Zinc	200.8	5.0	1.0	12/17/15	12/28/15	5.0	U	

Comments:

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: Battelle
Service Request: K1514149
Project No.: G006098
Units: UG/L
Project Name: MRCSP Bagley Field
Basis: NA
Matrix: WATER

Sample Name: J-M 1-11S
Lab Code: K1514149-001DISSS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Aluminum	70 - 130	8960		500	U	10000.00	90		200.7
Antimony	70 - 130	1098.94		10.00	U	1000.00	110		200.8
Barium	70 - 130	3016.97		664.17		2000.00	118		200.8
Boron		211000		209000		5000.00	40		200.7
Calcium		108000000		110000000		50000.00	-4000		200.7
Iron	70 - 130	14900		10000		5000.00	98		200.7
Lithium	70 - 130	134000		82000		50000.00	104		200.7
Magnesium		11400000		12100000		50000.00	-1400		200.7
Manganese	70 - 130	3770		1360		2500.00	96		200.7
Potassium		15600000		16600000		50000.00	-2000		200.7
Selenium	75 - 125	25.8		10.4		16.00	96		7742
Sodium		14100000		15300000		50000.00	-2400		200.7
Strontium		4090000		4250000		50000.00	-320		200.7
Titanium	70 - 130	50800		795		50000.00	100		200.7

An empty field in the Control Limit column indicates the control limit is not applicable

Metals

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DUPLICATES

Client: Battelle **Service Request:** K1514149

Project No.: G006098 **Units:** UG/L

Project Name: MRCSP Bagley Field **Basis:** NA

Matrix: WATER

Sample Name: J-M 1-11D **Lab Code:** K1514149-001DISSD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum		500	U	500	U			200.7
Antimony		10.00	U	10.00	U			200.8
Barium	20	664.17		719.06		7.9		200.8
Boron	20	209000		212000		1.4		200.7
Calcium	20	110000000		110000000		0.0		200.7
Iron	20	10000		10000		0.0		200.7
Lithium	20	82000		83400		1.7		200.7
Magnesium	20	12100000		12300000		1.6		200.7
Manganese	20	1360		1340		1.5		200.7
Potassium	20	16600000		17000000		2.4		200.7
Selenium	20	10.4		13.0		22.2	*	7742
Sodium	20	15300000		15600000		1.9		200.7
Strontium	20	4250000		4240000		0.2		200.7
Titanium		795		270		98.6		200.7

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: Battelle **Service Request:** K1514149

Project No.: G006098

Project Name: MRCSP Bagley Field

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	5000	5470	109					
Antimony	50.0	53.9	108					
Arsenic	2	1.7	85					
Arsenic	2	1.6	80					
Barium	100.0	107.3	107					
Beryllium	2	1.20	60					
Beryllium	2	1.10	55					
Boron	1000	1060	106					
Cadmium	2	1.80	90					
Cadmium	2	1.80	90					
Calcium	12500	12700	102					
Chromium	2	1.9	95					
Chromium	2	1.9	95					
Cobalt	2	1.700	85					
Cobalt	2	1.600	80					
Copper	2	1.90	95					
Copper	2	1.78	89					
Iron	2500	2580	103					
Lead	2	1.83	92					
Lead	2	1.81	90					
Lithium	10000	10600	106					
Magnesium	12500	13300	106					
Manganese	1250	1230	98					
Nickel	2	2.1	105					
Nickel	2	2.0	100					
Potassium	12500	13400	107					
Selenium	10	9.16	92					
Silver	2	1.70	85					
Silver	2	1.70	85					
Sodium	12500	13700	110					
Strontium	10000	10400	104					
Thallium	2	1.78	89					

Metals

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LABORATORY CONTROL SAMPLE

Client: Battelle **Service Request:** K1514149

Project No.: G006098

Project Name: MRCSP Bagley Field

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Thallium	2	1.76	88					
Titanium	10000	10100	101					
Zinc	2	2.3	115					
Zinc	2	1.9	95					

Subcontract Lab Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
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2655 Park Center Dr., Suite A
Simi Valley, CA 93065
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LABORATORY REPORT

December 30, 2015

Matt Place
Battelle
505 King Avenue
Columbus, OH 43201

RE: MRCSP Bagley Field / G006098

Dear Matt:

Enclosed are the results of the samples submitted to our laboratory on December 15, 2015. For your reference, these analyses have been assigned our service request number K1514149.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 11:33 am, Dec 30, 2015

Kate Aguilera
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Battelle
Project: MRCSP Bagley Field / G006098

Service Request No: K1514149

CASE NARRATIVE

The samples were received intact under chain of custody at the Simi Valley facility on December 15, 2015 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Dioxide Analysis

The samples were analyzed for carbon dioxide using a gas chromatograph equipped with a thermal conductivity detector (TCD). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least four hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gas (carbon dioxide) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175 as described in laboratory SOP VOA-DISGAS. This analyte is included on the laboratory's NELAP and DoD-ELAP scope of accreditation, however it is not part of the AIHA-LAP accreditation.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L15-398
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	977273
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-001
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-15-6
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272015-5
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Howard Holmes

Project Name: MRCSP Bagley Field
Project Number: G006098
Project Manager: Matt Place
Company: Battelle
QAP: LAB QAP

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	CO2 RSK 175	
K1514149-001	J-M 1-11	3	Water	12/6/15	1146	12/11/15	SIMIVALLEY	II	04-06
K1514149-002	J-S3-11	2	Water	12/6/15	1211	12/11/15	SIMIVALLEY	II	04+05

Page 98 of 101

Folder Comments:
Samples have very high TDS

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com. pH Checked _____	____RUSH (Surcharges Apply) **PLEASE CIRCLE WORK DAYS** 1 2 3 4 5 ____ **STANDARD** Requested FAX Date: _____ Requested Report Date: 12/28/15	____ I. Results Only __X__ II. Results + QC Summaries ____ III. Results + QC and Calibration Summaries ____ IV. Data Validation Report with Raw Data PQL/MDL/J N EDD Y	PO# 51K1514149 Bill to

Relinquished By: [signature] 12/14/15

Received By: [signature] 12/15/15 1010

1° Blank Gas

Airbill Number: _____

ALS Environmental
Sample Acceptance Check Form

Client: Battelle Work order: K1514149

Project: MRCSP Bagley Field / G006098

Sample(s) received on: 12/15/15 Date opened: 12/15/15 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 1° C **Gel Packs**			
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? SEALING COOLER Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☒	☐	☐
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☒	☐
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
K1514149-001.04	40mL VOA NP		7		A	wh 12/16/15
K1514149-001.05	40mL VOA NP				A	
K1514149-001.06	40mL VOA NP				A	
K1514149-002.04	40mL VOA NP		7		A	wh 12/16/15
K1514149-002.05	40mL VOA NP				A	

Explain any discrepancies: (include lab sample ID numbers):

The samples were received at ALS-Kelso on 12/11/15

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

Client: **Battelle**
Client Project ID: **MRCSP Bagley Field / G006098** ALS Project ID: K1514149

Carbon Dioxide

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD Date(s) Collected: 12/6/15
Analyst: Mike Conejo Date Received: 12/11/15
Matrix: Water Date Analyzed: 12/16/15
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Result µg/L	MRL µg/L	Data Qualifier
J-M 1-11	K1514149-001	0.10	**1,700**	1,000	
J-S3-11	K1514149-002	0.10	**2,200**	1,000	
Method Control Sample	P151216-MB	0.10	ND	1,000	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Battelle**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: K1514149
Client Project ID: **MRCSP Bagley Field / G006098** ALS Sample ID: P151216-DLCS

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/TCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 12/16/15
Matrix: Water Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result$_1$ LCS ug/L	Result$_1$ DLCS ug/L	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	22,900	24,400	23,000	**107**	**100**	62-139	7	24	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.