5
7
8
9

Method	Method Description	Protocol	Laboratory
SM 1030F	Cation Anion Balance	SM	TAL SL

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

	San	ple Summary			
Client: AMEC Environment & Infrastructure, Inc. TestAmerica Job ID: 160-4584- Project/Site: Clinch River - 6468-13-1072					
l ah Sample ID	Client Sample ID	Matrix	Collected	Received	
160-4584-3	OW 409-L-CC	Water	11/19/13 00:00	11/20/13 09:20	
160-4584-7	OW 409-U-C	Water	11/19/13 00:00	11/20/13 09:20	
160-4584-11	OW 423-U-C	Water	11/19/13 00:00	11/20/13 09:20	E
160-4584-15	OW 101-L-CC	Water	11/19/13 00:00	11/20/13 09:20	9
160-4584-19	OW 101-L-C	Water	11/19/13 00:00	11/20/13 09:20	
					8
					9

Client Sample Results

		Client	Sample F	Results	5				
Client: AMEC Environment & Infrastructur Project/Site: Clinch River - 6468-13-1072	re, Inc.						TestAm	erica Job ID: 160)-4584-2
Client Sample ID: OW 409-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20							Lab Sa	mple ID: 160- Matrix	4584-3 x: Water
General Chemistry Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Total Anions	9.2				meq/L		•	12/30/13 06:51	1
Total Cations	9.4				meq/L			12/30/13 06:51	1
Anion/Cation Balance	1.1				%			12/30/13 06:51	1
Percent Difference	1.1				%			12/30/13 06:51	1
Client Sample ID: OW 409-U-C							Lab Sa	mple ID: 160-	4584-7
Date Collected: 11/19/13 00:00								Matri	x: Water
Date Received: 11/20/13 09:20								matri	A. Mater
General Chemistry									
Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Total Anions	7.2				meq/L			12/30/13 06:51	1
Total Cations	9.1				meq/L			12/30/13 06:51	1
Anion/Cation Balance	12				%			12/30/13 06:51	1
Percent Difference	12				%			12/30/13 06:51	1
Client Sample ID: OW 423-U-C							Lab Sam	ple ID: 160-4	584-11
CONTRACT AND A CONTRACTOR OF A CONTRACT AND A									
Date Collected: 11/19/13 00:00								Matru	x: water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20								Matrix	x: water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 								Matrix	x: water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Matri	Dil Fac
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions	Result 6.4	Qualifier	NONE	NONE	Unit meq/L	D	Prepared	Matri: Analyzed 12/30/13 06:51	Dil Fac
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations	Result 6.4 6.9	Qualifier	NONE	NONE	Unit meq/L meq/L	D	Prepared	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51	Dil Fac
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance	Result 6.4 6.9 4.1	Qualifier	NONE	NONE	Unit meq/L %	D	Prepared	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51	Dil Fac
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference	Result 6.4 6.9 4.1 4.1	Qualifier	NONE	NONE	Unit meq/L % %	D	Prepared	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51	Dil Fac
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC	Result 6.4 6.9 4.1 4.1	Qualifier	NONE	NONE	Unit meq/L % %	<u>D</u>	Prepared Lab San	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51	Dil Fac 1 1 584-15
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20	Result 6.4 6.9 4.1 4.1	Qualifier	NONE	NONE	Unit meq/L % %	D	Prepared Lab Sam	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/14	Dil Fac 1 1 1 584-15 x: Water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry	Result 6.4 6.9 4.1 4.1	Qualifier	NONE	NONE	Unit meq/L % %	<u>D</u>	Prepared	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51	Dil Fac 1 1 584-15 x: Water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte	Result 6.4 6.9 4.1 4.1 8.1	Qualifier	NONE	NONE	Unit meq/L % %	D	Prepared Lab Sam	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 Analyzed	Dil Fac
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions	Result 6.4 6.9 4.1 4.1 6.9 6.9 6.9 6.1 6.9 6.1 6.9 6.9 4.1 6.9 6.9 6.9	Qualifier	NONE	NONE	Unit meq/L % %	D	Prepared Lab San	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 Analyzed 12/30/13 06:51	Dil Fac 1 1 584-15 x: Water Dil Fac 1
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations	Result 6.4 6.9 4.1 4.1 4.1 8.8	Qualifier	NONE	NONE	Unit meq/L % %	D	Prepared Lab San	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 Analyzed 12/30/13 06:51 12/30/13 06:51	Dil Fac 1 1 584-15 x: Water Dil Fac 1 1
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance	Result 6.4 6.9 4.1 4.1 6.9 8.8 12	Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab Sam	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51	Dil Fac 1 1 584-15 x: Water Dil Fac 1 1
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference	Result 6.4 6.9 4.1 4.1 6.9 8.8 12	Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab San	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51	Dil Fac 1 1 1 584-15 x: Water Dil Fac 1 1 1
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C	Result 6.4 6.9 4.1 4.1 6.9 8.8 12 12	Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab Sam Prepared	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51	Dil Fac 1 1 584-15 x: Water Dil Fac 1 1 1 1 584-19
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00	Result 6.4 6.9 4.1 4.1 6.9 8.8 12 12	Qualifier	NONE	NONE	Unit meq/L % % Unit meq/L % %	D	Prepared Lab Sam	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/14 00 12/30/14 00 12/30/14 00 12/30/14 00 12/30/14 00 12/30/14 00	Dil Fac 1 1 584-15 x: Water Dil Fac 1 1 1 584-19 x: Water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20	Result 6.4 6.9 4.1 4.1 6.9 8.8 12 12	Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab Sam	Analyzed 12/30/13 06:51	Dil Fac 1 1 584-15 x: Water Dil Fac 1 1 1 584-19 x: Water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry	Result 6.4 6.9 4.1 4.1 6.9 8.8 12 12	Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab San	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/14 00000000000000000000000000000000000	Dil Fac 1 1 584-15 x: Water Dil Fac 1 1 1 1 584-19 x: Water
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Anions Total Cations Analyte Client Sample ID: OW 101-L-CC Date Collected: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte	Result 6.4 6.9 4.1 4.1 6.9 8.8 12 12 Result	Qualifier	NONE	NONE	Unit meq/L % % % Unit meq/L % %	D	Prepared Lab Sam	Matri: Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/14 00000000000000000000000000000000000	Dil Fac 1 1 1 584-15 x: Water Dil Fac 584-19 x: Water Dil Fac
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20	Result 6.4 6.9 4.1 4.1 8.8 12 12 6.9 8.8 12 6.9 8.8 4.1	Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab Sam	Analyzed 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51 12/30/13 06:51	Dil Fac 1 1 1 584-15 x: Water Dil Fac 1 1 1 584-19 x: Water Dil Fac 1 1
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations	Result 6.4 6.9 4.1 4.1 6.9 8.8 12 12 Result 6.9 8.8 12 6.9 8.8 12 7.2	Qualifier Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab Sam Prepared Prepared Prepared	Analyzed 12/30/13 06:51	Dil Fac 1 1 584-15 x: Water Dil Fac 1 1 584-19 x: Water Dil Fac 1 1
Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-CC Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Anions Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20 General Chemistry Analyte Total Cations Anion/Cation Balance Percent Difference Client Sample ID: OW 101-L-C Date Collected: 11/19/13 00:00 Date Received: 11/20/13 09:20	Result 6.4 6.9 4.1 4.1 6.9 8.8 12 12 Result 6.9 8.8 12 12 3.0	Qualifier Qualifier Qualifier	NONE	NONE	Unit meq/L % % %	D	Prepared Lab Sam Prepared Prepared Prepared	Analyzed 12/30/13 06:51	Dil Fac 1 1 1 584-15 x: Water Dil Fac 1 1 584-19 x: Water Dil Fac 1 1 1

TestAmerica Job ID: 160-4584-2

10

General Chemistry

Analysis Batch: 104463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4584-3	OW 409-L-CC	Total/NA	Water	SM 1030F	
160-4584-7	OW 409-U-C	Total/NA	Water	SM 1030F	
160-4584-11	OW 423-U-C	Total/NA	Water	SM 1030F	
160-4584-15	OW 101-L-CC	Total/NA	Water	SM 1030F	
160-4584-19	OW 101-L-C	Total/NA	Water	SM 1030F	



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis 13715 Rider Trail North Earth City, MO 63045 Tel: (314)298-8566

TestAmerica Job ID: 160-4600-1

Client Project/Site: Clinch River - 6468-13-1072 Revision: 1

For:

AMEC Environment & Infrastructure, Inc. 4021 Stirrup Creek Drive Suite 100 Durham, North Carolina 27703

Attn: Mr. Allan Tice

fan A. Van

Authorized for release by: 2/14/2014 5:23:14 PM

Ivan Vania, Project Manager II (314)298-8566 ivan.vania@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

www.testamericainc.com Clinch River Data Report Rev. 4 CRP-1112.16 Page H.2-35 of 111

······ Links ·····

Review your project results through

Total Access

Have a Question?

Ask-

The

Visit us at:

Expert

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	3
Definitions/Glossary	7
Method Summary	3
Sample Summary	Э
Client Sample Results	10
QC Sample Results	13
QC Association Summary	17

Job ID: 160-4600-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.

Project: Clinch River

Report Number: 160-4600-1 - Revision 1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client. This revision removes the LCS results for carbonate and bicarbonate alkalinity as they do not actually exist. In addition, an unnecessary note for a qualifier for ammonia results was removed. Finally, the cation/anion balance results were removed from this report. They will be reported in job 160-4600-2 due to the structure of the LIMS system and correction of the formula used to arrive at the results. See corrective action 01152014-1 sent apart from this deliverable.

RECEIPT

The samples were received on 11/21/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4 C.

METALS (ICPMS)

Samples OW 415-U-C (160-4600-3), OW 418-U-C (160-4600-7) and OW 419-U-C (160-4600-11) were analyzed for Metals (ICPMS) in accordance with EPA SW-846 Methods 6020A. The samples were prepared on 11/26/2013 and analyzed on 12/06/2013.

Preparation Batch 88197, Analytical Batch 90128:

The following samples were diluted to bring the concentration of target analytes within the calibration range: OW 415-U-C (160-4600-3), OW 418-U-C (160-4600-7). Elevated reporting limits (RLs) are provided.

Job ID: 160-4600-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

No other difficulties were encountered during the metals analysis. All quality control parameters were within the acceptance limits.

TOTAL DISSOLVED SOLIDS

Samples OW 415-U-A (160-4600-1), OW 418-U-A (160-4600-5) and OW 419-U-A (160-4600-9) were analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 11/27/2013.

No difficulties were encountered during the TDS analysis. All quality control parameters were within the acceptance limits.

ANIONS

Samples OW 415-U-A (160-4600-1), OW 418-U-A (160-4600-5) and OW 419-U-A (160-4600-9) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/21/2013.

Batch 89747:

The following samples were diluted to bring the concentrations of Chloride, Nitrate, and Sulfate within the calibration range in IC batch 89747: OW 415-U-A (160-4600-1). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analysis. All other quality control parameters were within the acceptance limits.

ALKALINITY

Samples OW 415-U-B (160-4600-2), OW 418-U-B (160-4600-6) and OW 419-U-B (160-4600-10) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 12/03/2013.

Batch 94338:

The associated samples in NH3 Batch 94338 were analyzed outside of holding time, but within 2X hold: OW 415-U-D (160-4600-4), OW 418-U-D (160-4600-8), OW 419-U-D (160-4600-12)

No other difficulties were encountered during the alkalinity analysis. All other quality control parameters were within the acceptance limits.

AMMONIA

Samples OW 415-U-D (160-4600-4), OW 418-U-D (160-4600-8) and OW 419-U-D (160-4600-12) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were analyzed on 12/23/2013.

Batch 94338:

The continuing calibration verification (CCV) for analytical batch 94338 recovered outside control limits (111.6%) for NH3, due to suspected matrix interference after analyzing the samples several times. The data have been qualified and reported. OW 415-U-D (160-4600-4), OW 418-U-D (160-4600-8), OW 419-U-D (160-4600-12)

No other difficulties were encountered during the ammonia analysis. All other quality control parameters were within the acceptance limits.

	Α	MEC Environment	t & Infrastruct	ure, Inc. Chain of Custod	ly Form		
Chain of Custody Ne	D. CRP-23			Prepared By:	: Kim Charles-Smith KK		
AMEC Project Nam	e Clinch I	River SMR Project		Checked By:	Kristen Llovd MUX		
AMEC Project Num	ber 646813	1072		Transferred From:	Site		6
COC Date	11/19/1	3		Transferred To:	Test America		460
					Ă	age_1 of 1	0
SAMPLE IDENTIFICATION	SAMPLE TYPE	COLLECTED BY ORGANIZATION	COLLECTIO	INTE	NDED USE	REMARKS	
OW 415-U-A	Water-1000 ml	AMEC	11/20/13	TDS, Anions (Br. Cl. F.	SO4, NO3, NO2)	Tinnecerrad	Y
OW 415-U-B	Water - 500 ml	AMEC	11/20/13	Alkalinity	lanse Ganade	Unpreserved	なく
0W 415-U-C	Water - 250 ml	AMEC	11/20/13	Metals		W/HNO3	之
OW 415-U-D	Water - 500 ml	AMEC	11/20/13	EHN		40SCH/w	2
OW 418-U-A	Water-1000 ml	AMEC	11/20/13	TDS, Anions (Br, Cl, F, S	S04, N03, N02)	Unpreserved	み)
OW 418-U-B	Water -500 ml	AMEC	11/20/13	Alkalinity		IInnreserved	2)
OW 418-U-C	Water - 250 ml	AMEC	11/20/13	Metals		W/HNO3	x }
OW 418-U-D	Water - 500 ml	AMEC	11/20/13	NH3		TOSCH/M	5);
OW 419-U-A	Water-1000 ml	AMEC	11/20/13	TDS, Anions (Br, Cl, F, S	504, NO3, NO2)	I Innreserved	a /s
OW 419-U-B	Water - 500 ml	AMEC	11/20/13	Alkalinity	1	[]nnreserved	x y
OW 419-U-C	Water - 250 ml	AMEC	11/20/13	Metals		W/HNO3	73
OW 419-U-D	Water - 500 ml	AMEC	11/20/13	NH3		w/H2SO4	1
1. Bolinquished by	1. Received	de X	((/20/1/3ime	2. Relinquished by:	2. Received by::	2. Date/Time	ų.
(signature)		(signature)	1830	(signature)	(signature)	0900	
3. Relinquished by:	3. Received	d by:	3. Date/Time	4. Relinquished by:	4. Received by::	4. Date/Time	
(signature)		(signature)	<u></u>	(signature)	(signature)		
5. Relinquished by:	5. Received	d by:	5. Date/Time	6. Relinquished by:	6. Received by:	6. Date/Time	
(signature)		(signature)	-I	(signature)	(signature)		
	Worl	k to be performed in ac	ccordance with	AMEC Work Instruction 64			
Remarks/Freight Bill/T	racking No:	JUYS TYSU	0- 1104	C			

RCN: CRP-1071.1 Page 5 of 28

WTP Form 9-01A (Rev 0)

Final sample disposition:

Recipient: After signing for receipt, copy the form and forward to the AMEC Project Manager,

RCN CRP-0957.0

. Keep original form with the samples.

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Login Number: 4600 List Number: 1 Creator: Daniels, Brian J

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 160-4600-1

List Source: TestAmerica St. Louis

Q	ua	lifi	er	S

		-
Metals		
Qualifier	Qualifier Description	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	
General Ch	nemistry	
Qualifier	Qualifier Description	6
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not	-
	applicable.	
٨	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.	
F	MS/MSD Recovery and/or RPD exceeds the control limits	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	Ö
н	Sample was prepped or analyzed beyond the specified holding time	
Glossary		40

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Description

Nitrogen, Ammonia

Solids, Total Dissolved (TDS)

Anions, Ion Chromatography

Metals (ICP/MS)

Alkalinity

Laboratory

TAL SL

TAL SL

TAL SL

TAL SL

TAL SL

5
7
8
9

Protocol SW846 MCAVWV MCAVWV MCAVWV MCAVWV

Protocol References:

Method

6020A

160.1 300.0

310.1

350.1

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Matrix

Water

Client: AMEC Environment & Infrastructure, Inc. Project/Site: Clinch River - 6468-13-1072

Lab Sample ID 160-4600-1

160-4600-2

160-4600-3

160-4600-4

160-4600-5

160-4600-6

160-4600-7

160-4600-8

160-4600-9

160-4600-10

160-4600-11

160-4600-12

Client Sample ID

OW 415-U-A

OW 415-U-B

OW 415-U-C

OW 415-U-D

OW 418-U-A

OW 418-U-B

OW 418-U-C

OW 418-U-D

OW 419-U-A

OW 419-U-B

OW 419-U-C

OW 419-U-D

TestAmerica Job ID: 160-4600-1

Received

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

Collected

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

0 9 10

TestAmerica St. Louis

Clinch River Data Report Rev. 4 CRP-1112.16 Page H.2-43 of 111

Client Sample Results

Client: AMEC Environment & Infrastructure, Inc. Project/Site: Clinch River - 6468-13-1072 TestAmerica Job ID: 160-4600-1

Client Sample ID: OW 415-U-A							Lab Sar	nple ID: 160-	4600-1
Date Collected: 11/20/13 00:00								Matrix	x: Water
Date Received: 11/21/13 09:00									
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	370		5.0	3.5	mg/L			11/27/13 11:00	1
Nitrate as N	0.90		0.020	0.0040	mg/L			11/21/13 19:12	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/21/13 19:12	1
Fluoride	0.13		0.10	0.010	mg/L			11/21/13 19:12	1
Bromide	0.053	J	0.25	0.025	mg/L			11/21/13 19:12	1
General Chemistry - DI									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.8		40	0.40	ma/l			11/21/13 19:27	20
Sulfate	36		10	10	ma/l			11/21/13 19:27	20
Sunate	50		10	1.0	iiig/ E			102010.27	20
Client Sample ID: OW 415-U-B							Lab Sar	nple ID: 160-	4600-2
Date Collected: 11/20/13 00:00								Matrix	x: Water
Date Received: 11/21/13 09:00									
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	270		5.0	0.54	ma/L			12/03/13 10:58	1
Bicarbonate Alkalinity as CaCO3	270		50	0.54	ma/l			12/03/13 10:58	1
Carbonate Alkalinity as CaCO3	ND		50	0.54	mg/L			12/03/13 10:58	1
	ND.		0.0	0.04	ing/L			12/00/10 10:00	
Client Sample ID: OW 415-U-C							Lab Sar	nple ID: 160-	4600-3
Date Collected: 11/20/13 00:00								Matrix	x: Water
Date Received: 11/21/13 09:00									
Method: 60200 - Metals (ICP/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	150000		500	340	ua/l		11/26/13 15:53	12/06/13 04:40	5
Iron	390		50	20	ug/l		11/26/13 15:53	12/06/13 04:07	1
Potassium	2400		100	42	ug/L		11/26/13 15:53	12/06/13 04:07	1
Magnesium	13000		50	5.6	ug/L		11/26/13 15:53	12/06/13 04:07	1
Manganoso	15000		2.0	0.25	ug/L		11/26/13 15:53	12/06/13 04:07	1
Sodium	5200		50	15	ug/L		11/26/13 15:53	12/06/13 04:07	1
Silicon	5200		1200	10	ug/∟		11/26/12 15:52	12/06/13 04:07	·····
Silicon	7600		1300	100	ug/∟		11/20/13 15.55	12/06/13 04:40	5
SIO2, Silica	16000		2700	190	ug/L		11/20/13 15:53	12/06/13 04:40	5
Client Sample ID: OW 415-U-D							Lab Sar	nple ID: 160-	4600-4
Date Collected: 11/20/13 00:00								Matrix	x: Water
Date Received: 11/21/13 09:00									
General Chemistry									
Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1/10	НА		9.2	ua/l			12/23/13 18:08	1
Annyma	140	A REAL PROPERTY AND A REAL	00	0.2	- 9' -			, _ 0, . 0 10.00	

TestAmerica Job ID: 160-4600-1

Client Sample ID: OW 418-U-A Date Collected: 11/20/13 00:00							Lab Sar	nple ID: 160- Matrix	4600-5 <: Water
Date Received: 11/21/13 09:00									
General Chemistry						_			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	300		5.0	3.5	mg/L			11/27/13 11:00	1
Nitrate as N	0.68		0.020	0.0040	mg/L			11/21/13 21:11	1
Nitrite as N	ND		0.020	0.0030	mg/L			11/21/13 21:11	1
Fluoride	0.30		0.10	0.010	mg/L			11/21/13 21:11	1
Chloride	2.7		0.20	0.020	mg/L			11/21/13 21:11	1
Bromide	ND		0.25	0.025	mg/L			11/21/13 21:11	1
Sulfate	20		0.50	0.050	mg/L			11/21/13 21:11	1
Client Sample ID: OW 418-U-B							Lab Sar	nple ID: 160-	4600-6
Date Collected: 11/20/13 00:00								Matrix	c: Water
Date Received: 11/21/13 09:00									
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	270		5.0	0.54	mg/L			12/03/13 10:58	1
Bicarbonate Alkalinity as CaCO3	270		5.0	0.54	mg/L			12/03/13 10:58	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			12/03/13 10:58	1
Client Sample ID: OW 418-U-C							Lab Sar	nple ID: 160-	4600-7
Date Collected: 11/20/13 00:00								Matrix	·· Mator
Date Received: 11/21/13 09:00								Wath	. vvater
Method: 6020A - Metals (ICP/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	52000		100	68	ug/L		11/26/13 15:53	12/06/13 04:13	1
Iron	55		50	20	ug/L		11/26/13 15:53	12/06/13 04:13	1
Potassium	2700		100	42	ug/L		11/26/13 15:53	12/06/13 04:13	1
Magnesium	19000		50	5.6	ug/L		11/26/13 15:53	12/06/13 04:13	1
Manganese	3.7		2.0	0.25	ug/L		11/26/13 15:53	12/06/13 04:13	1
Sodium	40000		50	15	ug/L		11/26/13 15:53	12/06/13 04:13	1
Silicon	8700		1300	89	ug/L		11/26/13 15:53	12/06/13 04:47	5
SiO2, Silica	19000		2700	190	ug/L		11/26/13 15:53	12/06/13 04:47	5
Client Sample ID: OW 418-U-D							Lab Sar	nple ID: 160-	4600-8
Date Collected: 11/20/13 00:00								Matrix	: Water
Date Received: 11/21/13 09:00									
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	59	Η ^	50	9.2	ug/L			12/23/13 18:10	1
Client Sample ID: OW 419-U-A							Lab Sar	nple ID: 160-	4600-9
Date Collected: 11/20/13 00:00								Matrix	: Water
Date Received: 11/21/13 09:00								matrix	(. mator
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analvzed	Dil Fac
Total Dissolved Solids (TDS)	290		5.0	3.5	mg/L			11/27/13 11:00	1
Nitrate as N	0.43		0.020	0.0040	mg/L			11/21/13 21:41	1
Nitrite as N			0.020	0.000.0	ma/l			11/21/13 21:41	1
			0.020	0.0000					1

Client Sample Results

		Client	Sample R	Results	5				
Client: AMEC Environment & Infrastructo Project/Site: Clinch River - 6468-13-1072	ure, Inc. 2						TestAme	rica Job ID: 160	-4600-1
Client Sample ID: OW 419-U-A							Lab Sar	nple ID: 160-	4600-9
Date Collected: 11/20/13 00:00								Matrix	c: Water
Date Received: 11/21/13 09:00									
1									
General Chemistry (Continued)	Bocult	Qualifiar	ы	MDI	Unit		Bropprod	Analyzad	Dil Eso
Eluoride	0.16	Quanner	0.10	0.010	ma/l		Fiepareu	11/21/13 21·41	1
Chloride	13		0.10	0.020	mg/L			11/21/13 21:41	
Bromide	ND		0.25	0.025	ma/l			11/21/13 21:41	1
Sulfate	17		0.50	0.050	mg/L			11/21/13 21:41	1
Client Sample ID: OW 419-U-B							Lab Sam	ple ID: 160-4	600-10
Date Collected: 11/20/13 00:00								Matrix	k: Water
Date Received: 11/21/13 09:00									
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	270		5.0	0.54	mg/L			12/03/13 10:58	1
Bicarbonate Alkalinity as CaCO3	270		5.0	0.54	mg/L			12/03/13 10:58	1
Carbonate Alkalinity as CaCO3	ND		5.0	0.54	mg/L			12/03/13 10:58	1
Client Sample ID: OW 419-U-C Date Collected: 11/20/13 00:00 Date Received: 11/21/13 09:00							Lab Sam	ple ID: 160-4 Matrix	600-11 k: Water
Method: 6020A - Metals (ICP/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	72000		100	68	ug/L		11/26/13 15:53	12/06/13 04:20	1
Iron	23	J	50	20	ug/L		11/26/13 15:53	12/06/13 04:20	1
Potassium	1500		100	42	ug/L		11/26/13 15:53	12/06/13 04:20	1
Magnesium	29000		50	5.6	ug/L		11/26/13 15:53	12/06/13 04:20	1
Manganese	2.3		2.0	0.25	ug/L		11/26/13 15:53	12/06/13 04:20	1
Sodium	910		50	15	ug/L		11/26/13 15:53	12/06/13 04:20	1
Silicon	3200		250	18	ug/L		11/26/13 15:53	12/06/13 04:20	1
SiO2, Silica	6800		540	38	ug/L		11/26/13 15:53	12/06/13 04:20	1
Client Sample ID: OW 419-U-D							Lab Sam	ple ID: 160-4	600-12
Date Collected: 11/20/13 00:00								Matrix	: Water
Date Received: 11/21/13 09:00									
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	140	Н^	50	9.2	ug/L			12/23/13 18:12	1

RL

100

50

100

50

2.0

50

250

540

MDL Unit

68 ug/L

20 ug/L

42 ug/L

5.6 ug/L

0.25 ug/L

15 ug/L

18 ug/L

38 ug/L

D

Prepared

11/26/13 15:53

11/26/13 15:53

11/26/13 15:53

11/26/13 15:53

11/26/13 15:53

11/26/13 15:53

11/26/13 15:53

11/26/13 15:53

MB MB Result Qualifier

ND

ND

ND

ND

ND

ND

ND

ND

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-88197/1-A

Matrix: Water

Analyte

Calcium

Potassium

Magnesium

Manganese

SiO2, Silica

Sodium

Silicon

Iron

Analysis Batch: 90128

Analyzed

12/06/13 01:59

12/06/13 01:59

12/06/13 01:59

12/06/13 01:59

12/06/13 01:59

12/06/13 01:59

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

12/06/13 01:59 1 12/06/13 01:59 1 10

Lab Sample ID: LCS 160-88197/2-A Matrix: Water

Analysis Batch: 90128

Analysis Batch: 90128							Prep Ba	atch: 88197
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Calcium	10000	10500		ug/L		105	80 _ 120	
Iron	10000	10000		ug/L		100	80 _ 120	
Potassium	10000	10100		ug/L		101	80 _ 120	
Magnesium	10000	9980		ug/L		100	80 _ 120	
Manganese	1000	1070		ug/L		107	80 _ 120	
Sodium	10000	10100		ug/L		101	80 _ 120	
Silicon	5000	4560		ug/L		91	80 - 120	

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 160-87715/1 Matrix: Water Analysis Batch: 87715											(Client S	ample ID: N Prep Ty	Method ype: To	Blank tal/NA
		MB ME	3												
Analyte	R	esult Qu	alifier		RL		MDL	Unit		D	Pr	epared	Analyze	ed	Dil Fac
Total Dissolved Solids (TDS)		ND			5.0		3.5	mg/L					11/27/13 1	11:00	1
Lab Sample ID: LCS 160-87715/2										Clie	ent	Sample	ID: Lab Co	ontrol S	ample
Matrix: Water													Prep Ty	уре: То	tal/NA
Analysis Batch: 87715															
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	lifier	Unit	1	D	%Rec	Limits		
Total Dissolved Solids (TDS)	-2		-	500		486	2		mg/L			97	90 _ 110		
Lab Sample ID: 160-4600-9 DU												Client	Sample ID:	: OW 41	19-U-A
Matrix: Water													Prep Ty	уре: То	tal/NA
Analysis Batch: 87715															
	Sample	Sample				DU	DU								RPD
Analyte	Result	Qualifie	r			Result	Qual	lifier	Unit	, i	D			RPD	Limit
Total Dissolved Solids (TDS)	290					287	-		mg/L					1	20

TestAmerica St. Louis

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 88197 Dil Fac 1 1 1 1

RL

0.020

0.020

0.10

0.20

0.25

0.50

MDI Unit

0.0040 mg/L

0.0030 mg/L

0.010 mg/L

0.020 mg/L

0.025 mg/L

0.050 mg/L

D

Prepared

Method: 300.0 - Anions, Ion Chromatography

MB MB Result Qualifier

ND

ND

ND

ND

ND

ND

Client Sample ID: Method Blank

Analyzed

11/21/13 18:12

11/21/13 18:12

11/21/13 18:12

11/21/13 18:12

Prep Type: Total/NA

10

11/21/13 18:12 11/21/13 18:12

Lab Sample ID: LCS 160-89747/4 Matrix: Water

Lab Sample ID: MB 160-89747/3

Matrix: Water

Analyte

Nitrate as N

Nitrite as N

Fluoride

Chloride

Bromide

Sulfate

Analysis Batch: 89747

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Analysis Batch: 89747

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	0.400	0.399	2	mg/L		100	90 - 110	i
Nitrite as N	0.160	0.158		mg/L		99	90 - 110	
Fluoride	1.00	0.980		mg/L		98	90 - 110	
Chloride	2.00	1.93		mg/L		96	90 _ 110	
Bromide	2.00	1.96		mg/L		98	90 _ 110	
Sulfate	8.00	7.69		mg/L		96	90 _ 110	

Lab Sample ID: 160-4600-1 MS Matrix: Water

Analysis Batch: 89747

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	0.90		0.400	1.32		mg/L		105	90 _ 110	
Nitrite as N	ND		0.100	0.0422	F	mg/L		42	90 _ 110	
Fluoride	0.13		2.00	2.12		mg/L		100	90 _ 110	
Bromide	0.053	J	2.00	2.22		mg/L		108	90 - 110	

Lab Sample ID: 160-4600-1 MSD Matrix: Water

Analysis Batch: 89747 Sample Sample Spike MSD MSD %Rec. RPD Analyte **Result Qualifier** Added Result Qualifier Unit D %Rec Limits RPD Limit Nitrate as N 0.90 0.400 1.30 101 90 - 110 20 mg/L 1 Nitrite as N ND 0.100 0.0425 F mg/L 43 90 - 110 1 20 Fluoride 0.13 2.00 2.09 mg/L 98 90 - 110 2 20 0.053 J Bromide 2.00 2.21 mg/L 108 90 - 110 1 20

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 160-4600-1 MS Matrix: Water Analysis Batch: 89747									Client	Sample II Prep ⁻	D: OW 415-U-A Type: Total/NA
	Sample	Sample	Spike	MS	MS					%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	1	D	%Rec	Limits	
Chloride - DL	8.8	-	40.0	48.3		mg/L			99	90 _ 110	
Sulfate - DL	36		80.0	114		mg/L			97	90 _ 110	

TestAmerica St. Louis

RCN: CRP-1071.1 Page 14 of 28

Prep Type: Total/NA

Client Sample ID: OW 415-U-A

Client Sample ID: OW 415-U-A

Prep Type: Total/NA

Method: 300.0 - Anions, Ion Chromatography - DL (Continued)

Lab Sample ID: 160-4600-1 MSD Matrix: Water											Client	Sample ID Prep T): OW 41 Type: To	l5-U-A tal/NA
Analysis Baten. 03747	Sample	Sample	Spike		MSD	MSD						%Rec.		RPD
Analyte	Result	Qualifier	Added		Result	Quali	fier	Unit		D	%Rec	Limits	RPD	Limit
Chloride - DL	8.8		40.0		48.3			mg/L			99	90 - 110	0	20
Sulfate - DL	36		80.0		113			mg/L			96	90 - 110	1	20
Method: 310.1 - Alkalinity														
Lab Sample ID: MB 160-89196/1											Client S	ample ID:	Method	Blank
Matrix: Water												Prep T	уре: То	tal/NA
Analysis Batch: 89196												5.		
-		MB MB												
Analyte	R	esult Qualifier		RL		MDL	Unit		D	Pr	epared	Analyz	zed	Dil Fac
Alkalinity	3	ND		5.0	<u>y</u>	0.54	mg/L					12/03/13	10:55	1
Bicarbonate Alkalinity as CaCO3		ND		5.0		0.54	mg/L					12/03/13	10:55	1
Carbonate Alkalinity as CaCO3		ND		5.0		0.54	mg/L					12/03/13	10:55	1
Lab Sample ID: LCS 160-89196/3									Cli	ent	Sample	ID: Lab C	ontrol S	ample
Matrix: Water												Prep T	уре: То	tal/NA
Analysis Batch: 89196														
			Spike		LCS	LCS						%Rec.		
Analyte			Added		Result	Quali	fier	Unit		D	%Rec	Limits		
Alkalinity			400		369			mg/L		_	92	90 _ 110		,
Lab Comple ID: 11 CC 160 20106/2									CIL		Comple	ID: Lab C	ontrol C	omplo
Lab Sample ID. LLCS 160-69196/2									CII	ent	Sample	Dran T		
Matrix: Water												Prep I	ype: To	tai/NA
Analysis Batch: 89196			Sniko		1109	11.09						% Boc		
Analyta			Addod		Bocult	Quali	fior	Unit			% Boc	/onec.		
		<u> </u>	200		184	Quali	ner	ma/l	2	<u> </u>	70 Rec	00 110	8	
Aikainity			200		104			my/∟			92	90 - 110		
Lab Sample ID: 160-4584-A-2 MS											Client	Sample ID	: Matrix	Spike
Matrix: Water												Prep T	vpe: To	tal/NA
Analysis Batch: 89196													J P01.10	
·	Sample	Sample	Spike		MS	MS						%Rec.		
Analyte	Result	Qualifier	Added		Result	Quali	fier	Unit		D	%Rec	Limits		
Alkalinity	300	22	20.0		316	4		mg/L			90	80 - 120		
ab Sample ID: 160-4584-A-2 DU											Clie	ent Sample	D: Du	olicate
Matrix: Water												Pren T	vpe: To	tal/NA
Analysis Batch: 89196													J poi 10	
	Sample	Sample			DU	DU								RPD
Analyte	Result	Qualifier			Result	Quali	fier	Unit		D			RPD	Limit
Alkalinity	300	<u> </u>			299	5 <u></u>		mg/L	2 (3		0.3	20
Bicarbonate Alkalinity as CaCO3	300				299			mg/L					0.3	20
Carbonate Alkalinity as CaCO3	ND				ND			mg/L					NC	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 160-94338/12 Matrix: Water												Client S	ample ID: Metho Prep Type:	od I Tot	3lank al/NA
Analysis Batch: 94338															
	_	MB	MB							_	_				
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	P	repared	Analyzed		Dil Fac
Ammonia		ND	λ		50		9.2	ug/L					12/23/13 17:48		1
Lab Sample ID: LCS 160-94338/13										CI	ient	Sample	ID: Lab Control	I Sa	mple
Matrix: Water													Prep Type:	Tot	al/NA
Analysis Batch: 94338															
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Ammonia				500		523	۸		ug/L			105	90 - 110		
Lab Sample ID: 160-4584-A-4 MS Matrix: Water												Client	Sample ID: Mati Prep Type:	rix : Tot	Spike al/NA
Analysis Baten. 54000	Sample	Sam	ple	Spike		MS	MS						%Rec.		
Analyte	Result	Qual	lifier	Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Ammonia	710	٨		500	5	1280	F ^		ug/L		-	115	90 - 110		
Lab Sample ID: 160-4643-C-1 MS												Client	Sample ID: Mati	rix \$	Spike
Matrix: Water													Prep Type:	Tot	al/NA
Analysis Batch: 94338		-													
Barra Indae	Sample	Sam	pie	Spike		IVIS	IVIS Out		11		-	0/ D	%Rec.		
Analyte	110			Added		Result		Inter			_	%Rec			
Annonia	110			500		709			uy/L			119	90-110		
Lab Sample ID: 160-4584-A-4 DU												Clie	ent Sample ID: D)up	licate
Matrix: Water													Prep Type:	Tot	al/NA
Analysis Batch: 94338															
	Sample	Sam	ple			DU	DU								RPD
Analyte	Result	Qual	lifier			Result	Qua	lifier	Unit		D		RP	D	Limit
Ammonia	710	٨	17 A.			721	٨		ug/L	12.	2.000			2	20

QC Association Summary

Client: AMEC Environment & Infrastructure, Inc. Project/Site: Clinch River - 6468-13-1072

Metals

Prep Batch: 88197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4600-3	OW 415-U-C	Total/NA	Water	3010A	
160-4600-7	OW 418-U-C	Total/NA	Water	3010A	
160-4600-11	OW 419-U-C	Total/NA	Water	3010A	
LCS 160-88197/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-88197/1-A	Method Blank	Total/NA	Water	3010A	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
Lab Sample ID	Client Sample ID	Brop Tupo	Motrix	Mothod	Bron Botok
Lab Sample ID 160-4600-3	Client Sample ID OW 415-U-C	Prep Type Total/NA	Matrix Water	Method 6020A	Prep Batch 88197
Lab Sample ID 160-4600-3 160-4600-3	Client Sample ID OW 415-U-C OW 415-U-C	Prep Type Total/NA Total/NA	Matrix Water Water	Method 6020A 6020A	Prep Batch 88197 88197
Lab Sample ID 160-4600-3 160-4600-3 160-4600-7	Client Sample ID OW 415-U-C OW 415-U-C OW 418-U-C	Total/NA Total/NA Total/NA Total/NA	Matrix Water Water Water	Method 6020A 6020A 6020A	Prep Batcl 88197 88197 88197 88197
Lab Sample ID 160-4600-3 160-4600-3 160-4600-7 160-4600-7	Client Sample ID OW 415-U-C OW 415-U-C OW 418-U-C OW 418-U-C	Prep Type Total/NA Total/NA Total/NA Total/NA	Matrix Water Water Water Water	Method 6020A 6020A 6020A 6020A 6020A	Prep Batcl 8819 8819 8819 8819 8819 8819
Lab Sample ID 160-4600-3 160-4600-3 160-4600-7 160-4600-7 160-4600-11	Client Sample ID OW 415-U-C OW 415-U-C OW 418-U-C OW 418-U-C OW 418-U-C	Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA	Matrix Water Water Water Water Water Water	Method 6020A 6020A 6020A 6020A 6020A 6020A	Prep Batcl 8819 8819 8819 8819 8819 8819 8819
Lab Sample ID 160-4600-3 160-4600-3 160-4600-7 160-4600-7 160-4600-11 _CS 160-88197/2-A	Client Sample ID OW 415-U-C OW 415-U-C OW 418-U-C OW 418-U-C OW 418-U-C OW 419-U-C Lab Control Sample	Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Matrix Water Water Water Water Water Water Water	Method 6020A 6020A 6020A 6020A 6020A 6020A 6020A 6020A 6020A 6020A	Prep Batcl 8819 8819 8819 8819 8819 8819 8819 881

General Chemistry

Analysis Batch: 87715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4600-1	OW 415-U-A	Total/NA	Water	160.1	
160-4600-5	OW 418-U-A	Total/NA	Water	160.1	
160-4600-9	OW 419-U-A	Total/NA	Water	160.1	
160-4600-9 DU	OW 419-U-A	Total/NA	Water	160.1	
LCS 160-87715/2	Lab Control Sample	Total/NA	Water	160.1	
MB 160-87715/1	Method Blank	Total/NA	Water	160.1	

Analysis Batch: 89196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4584-A-2 DU	Duplicate	Total/NA	Water	310.1	
160-4584-A-2 MS	Matrix Spike	Total/NA	Water	310.1	
160-4600-2	OW 415-U-B	Total/NA	Water	310.1	
160-4600-6	OW 418-U-B	Total/NA	Water	310.1	
160-4600-10	OW 419-U-B	Total/NA	Water	310.1	
LCS 160-89196/3	Lab Control Sample	Total/NA	Water	310.1	
LLCS 160-89196/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-89196/1	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 89747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4600-1	OW 415-U-A	Total/NA	Water	300.0	
160-4600-1 - DL	OW 415-U-A	Total/NA	Water	300.0	
160-4600-1 MS	OW 415-U-A	Total/NA	Water	300.0	
160-4600-1 MS - DL	OW 415-U-A	Total/NA	Water	300.0	
160-4600-1 MSD	OW 415-U-A	Total/NA	Water	300.0	
160-4600-1 MSD - DL	OW 415-U-A	Total/NA	Water	300.0	
160-4600-5	OW 418-U-A	Total/NA	Water	300.0	
160-4600-9	OW 419-U-A	Total/NA	Water	300.0	
LCS 160-89747/4	Lab Control Sample	Total/NA	Water	300.0	
MB 160-89747/3	Method Blank	Total/NA	Water	300.0	

11

General Chemistry (Continued)

Analysis Batch: 94338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4584-A-4 DU	Duplicate	Total/NA	Water	350.1	
160-4584-A-4 MS	Matrix Spike	Total/NA	Water	350.1	
160-4600-4	OW 415-U-D	Total/NA	Water	350.1	
160-4600-8	OW 418-U-D	Total/NA	Water	350.1	
160-4600-12	OW 419-U-D	Total/NA	Water	350.1	
160-4643-C-1 MS	Matrix Spike	Total/NA	Water	350.1	
LCS 160-94338/13	Lab Control Sample	Total/NA	Water	350.1	
MB 160-94338/12	Method Blank	Total/NA	Water	350.1	



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis 13715 Rider Trail North Earth City, MO 63045 Tel: (314)298-8566

TestAmerica Job ID: 160-4600-2

Client Project/Site: Clinch River - 6468-13-1072

For:

AMEC Environment & Infrastructure, Inc. 4021 Stirrup Creek Drive Suite 100 Durham, North Carolina 27703

Attn: Mr. Allan Tice

ban N. Van

Authorized for release by: 2/14/2014 5:26:36 PM

Ivan Vania, Project Manager II (314)298-8566 ivan.vania@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Total Access Have a Question? Ask The Expert

www.testamericainc.com Clinch River Data Report Rev. 4 CRP-1112.16 Page H.2-53 of 111

······ Links ·····

Review your project results through

Visit us at:

RCN: CRP-1071.1 Page 19 of 28

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	4
Receipt Checklists	5
Definitions/Glossary	6
Method Summary	7
Sample Summary	8
Client Sample Results	9
QC Association Summary	10

Job ID: 160-4600-2

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Client: AMEC Environment & Infrastructure, Inc.

Project: Clinch River - 6468-13-1072

Report Number: 160-4600-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica St. Louis attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client. This report is a supplement to the report for job 160-4600-1. The results for cation/anion balance analysis are reported in this job due to a limitation of the LIMS system and a correction of the calculation for the analysis.

RECEIPT

The samples were received on 11/21/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.4 C.

CATION ANION BALANCE

Samples OW 415-U-C (160-4600-3), OW 418-U-C (160-4600-7) and OW 419-U-C (160-4600-11) were analyzed for Cation Anion Balance in accordance with Cation Anion Balance. The samples were analyzed on 12/30/2013.

Refer to corrective action report 01152014-01 delivered separately for further information regarding this analysis.

No difficulties were encountered during the Cation Anion Balance analysis. All quality control parameters were within the acceptance limits.

Cutch River SNR Project Departed By: Kinen Lloyd M 0.000 Clinch River SNR Project Catecled By: Kristen Lloyd M 11/19/13 Tansferred To: Tansferred From: Site Page -1 of -1 11/19/13 Tansferred From: Site Page -1 of -1 Site 11/19/13 Tansferred From: Site Page -1 of -1 Site Water - 500 ml AMEC 11/20/13 ANSIN M NO3, NO2) Uppreserved Water - 500 ml AMEC 11/20/13 Ansinity M M M Water - 500 ml AMEC 11/20/13 NH3 NH3 M M Water - 500 ml AMEC 11/20/13 NH3 NH3 M M Water - 500 ml AMEC 11/20/13 NH4 M M M M M Water - 500 ml AMEC 11/20/13 NH4 M M M M M Water - 500 ml AMEC 11/20/13 NH4 <t< th=""><th></th><th></th><th></th><th></th><th></th></t<>					
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	CRP-23		Prepared By	: Kim Charles-Smith	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Clinch River SMR Project	1	Checked By	: Kristen Lloyd NHY	
Transferred To: Test America Page 1 of 1 AMPLE TYPE COLLECTED BY ORGANIZATION Transferred To: Test America Page 1 of 1 AMPLE TYPE COLLECTED BY DATE ORGANIZATION DATE Fage 1 of 1 Page 1 of 1 Page 1 of 1 AMPLE TYPE COLLECTED BY DATE TDS, Anions (Br, Cl, F, SO4, NO3, NO2) Unpreserved 4 after - 500 ml AMEC 11/20/13 Metals AMEC 11/20/13 AMEA AMEC 11/20/13 AMEA AMEC 11/20/13 Metals A	6468131072		Transferred From:	: Site	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	11/19/13	1	Transferred To:	: Test America	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				I	age 1 of 1
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	SAMPLE TYPE COLLECTED BY C	COLLECTIO	INTE	INDED USE	REMARKS
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water-1000 ml AMEC 11	1/20/13	TDS, Anions (Br. Cl. F.	SO4, NO3, NO2)	TInnecercied
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water - 500 ml AMEC 11	1/20/13	Alkalinity	1 mars - Constant	I Inpreserved
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water - 250 ml AMEC 11	1/20/13	Metals		w/HN03
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water - 500 ml AMEC 11	1/20/13	NH3		w/H2SO4
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water-1000 ml AMEC 11	1/20/13	TDS, Anions (Br, Cl, F,	S04, N03, N02)	Unneserved
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water - 500 ml AMEC 11	1/20/13	Alkalinity		IInnrecerved
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water - 250 ml AMEC 11	/20/13	Metals		W/HNO3
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Water - 500 ml AMEC 11	1/20/13	NH3		TOSCH/m
Water - 500 mlAMEC11/20/13AlkalinityUnpreservedWater - 250 mlAMEC11/20/13MetalsW/HNO3Water - 500 mlAMEC11/20/13MH3W/HNO3Water - 500 mlAMEC11/20/13NH3W/HNO3Water - 500 mlAMEC2. Reinquished by:2. Received by:1/20/16/01. Received by:3. Received by:3. Date/Time4. Reinquished by:4. Date/Time1. Received by:5. Received by:5. Date/Time6. Reinquished by:6. Received by:6. Date/Time1. Received by:5. Received by:5. Subature)6. Received by:6. Received by:6. Date/Time1. Received by:5. Received by:5. Received by:6. Received by:6. Date/Time1. Received by:6. Received by:6. Received by: <td>Water-1000 ml AMEC 11</td> <td>/20/13</td> <td>TDS, Anions (Br, Cl, F, S</td> <td>SO4, NO3, NO2)</td> <td>Unneserved</td>	Water-1000 ml AMEC 11	/20/13	TDS, Anions (Br, Cl, F, S	SO4, NO3, NO2)	Unneserved
Water - 250 mlAMEC11/20/13Metalsw/HN03Water - 500 mlAMEC11/20/13NH3w/H33Water - 500 mlAMEC11/20/13NH3w/H331. Received by: $(1/20)/53$ 2. Reinquished by:2. Reinquished by: $(1/20)/64$ 3. Received by: $(1/20)/53$ $(1/20)/53$ $(1/20)/64$ $(1/20)/64$ $(signature)$ $(1/20)/53$ $(1/20)/62$ $(1/20)/64$ $(1/20)/64$ $(signature)$ $(1/20)/64$ $(1$	Water - 500 ml AMEC 11.	/20/13	Alkalinity	6	Unneserved
Water - 500 mlAMEC11/20/13NH3NH3W/H2SO41. Received by: (signature)1. Received by: (signature)2. Relinquished by: (signature)2. Relinquished by: (signature)2. Relinquished by: (signature)2. Relinquished by: (signature)2. Received by: (signature)1. (1/2)/33. Received by: (signature)3. Date/Time4. Relinquished by: (signature)4. Received by: (signature)4. Date/Time5. Received by: (signature)5. Received by: (signature)6. Received by: (signature)6. Received by: (signature)6. Date/Time(signature)(signature)(signature)6. Received by: (signature)6. Date/Time(signature)(signature)(signature)6. Received by: (signature)6. Date/Time	Water - 250 ml AMEC 11	/20/13	Metals		W/HNO3
1. Received by:1. Received by:2. Relinquished by:2. Received by::2. Received by::2. Date/Time(signature) $\langle \langle \langle \langle \rangle O \rangle$ $\langle \langle \langle \rangle O \rangle$ 3. Received by:3. Date/Time4. Relinquished by:4. Received by::4. Date/Time $\langle \langle \langle \rangle O \rangle$ $\langle \langle \rangle O \rangle$ $\langle \langle \rangle O \rangle$ $\langle \langle \langle \rangle O \rangle$ $\langle \langle \rangle O \rangle$ $\langle \langle \langle \rangle O \rangle$ $\langle \langle \rangle O \rangle$ $\langle \langle \rangle O \rangle$ $\langle \langle \langle \rangle O \rangle$ $\langle \rangle O \rangle$	Water - 500 ml AMEC 11.	/20/13	NH3		W/H2SO4
	1. Received by:	2077/Jime	2. Relinquished by:	2. Received by::	2. Date/Time
3. Received by:3. Date/Time4. Relinquished by:4. Received by::4. Date/Time $(signature)$ $(signature)$ $(signature)$ $(signature)$ $(signature)$ 5. Received by: $(signature)$ $(signature)$ $(signature)$ $(signature)$ $(signature)$ $(signature)$ $(signature)$ $(signature)$	(signature)	(\$30	(signature)	(signature)	0900
(signature) (signature) 5. Date/Time 6. Relinquished by: 6. Received by: 6. Received by: (signature) (signature)	3. Received by:	. Date/Time	4. Relinquished by:	4. Received by::	4. Date/Time
5. Date/Time 6. Relinquished by: 6. Received by: 6. Date/Time (signature) (signature) (signature)	(signature)		(signature)	(signature)	· · ·
(signature) (signature)	5. Received by: 5.	. Date/Time	6. Relinquíshed by:	6. Received by:	6. Date/Time
	(signature)		(signature)	(signature)	

RCN: CRP-1071.1 Page 22 of 28

Recipient: After signing for receipt, copy the form and forward to the AMEC Project Manager,

Final sample disposition:

WTP Form 9-01A (Rev 0)

. Keep original form with the samples.

RCN CRP-0957.0

Login Sample Receipt Checklist

Client: AMEC Environment & Infrastructure, Inc.

Login Number: 4600 List Number: 1 Creator: Daniels, Brian J

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

List Source: TestAmerica St. Louis

Definitions/Glossary

Client: AMEC Environment & Infrastructure, Inc. Project/Site: Clinch River - 6468-13-1072

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method

SM 1030F

Protocol References:

Laboratory References:

Method Description

Cation Anion Balance

SM = "Standard Methods For The Examination Of Water And Wastewater",

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Laboratory

TAL SL

5	
7	
8	
9	

TestAmerica St. Louis

Clinch River Data Report Rev. 4 CRP-1112.1	6
Page H.2-59 of 111	

Page 7 of 10

Protocol

SM

Sample Summary

Matrix

Water

Water

Water

Client: AMEC Environment & Infrastructure, Inc. Project/Site: Clinch River - 6468-13-1072

Lab Sample ID

160-4600-3

160-4600-7

160-4600-11

Client Sample ID

OW 415-U-C

OW 418-U-C

OW 419-U-C

TestAmerica Job ID: 160-4600-2

Received

11/21/13 09:00

11/21/13 09:00

11/21/13 09:00

Collected

11/20/13 00:00

11/20/13 00:00

11/20/13 00:00

5	
8	
9	