









616 Maxine NE  
Albuquerque, NM 87123  
505-299-5201  
[www.aqainc.net](http://www.aqainc.net)

## Data Validation Report for CH2M Hill Plateau Remediation Company

**VSR12-017**  
**183.2 KE Sampling (Concrete)**  
**Project 100-K**

### Chemical & Radiochemical Validation - Level C

**Validation Performed By:**   
Kenneth Salaz **Date:** 07-12-12

**Validation reviewed by:**   
Marcia Hilchey **Date:** 07-12-12

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Date: 11 July 2012  
 To: CH2M Hill (technical representative)  
 From: Analytical Quality Associates, Inc.  
 Project: 100-K  
 Subject: Inorganics - Sample Data Group (SDG) WSCF120798, SL1276, and WSCF120413

## **INTRODUCTION**

This memorandum presents the results of data validation for SDGS WSCF120798, SL1276, and WSCF120413 prepared by WSCF Analytical Laboratories and Test America Laboratories, St. Louis. A list of samples validated along with the analytical methods is provided in the following table.

<b>Sample ID</b>	<b>Sample Date</b>	<b>Media</b>	<b>Validation Level</b>	<b>Analytical Methods</b>
B2L1D4	6/19/12	Other Solid	C	200.8
B2L1D7	6/19/12	Other Solid	C	200.8
B2L1F0	6/19/12	Other Solid	C	200.8
B2L1F3	6/19/12	Other Solid	C	200.8
B2H1V8	6/19/12	Other Solid	C	200.8
B2H1W1	6/19/12	Other Solid	C	200.8
B2L1H0	6/19/12	Other Solid	C	200.8
B2H111	3/26/12	Other Solid	C	200.8
B2H114	3/26/12	Other Solid	C	200.8
B2L1F6	3/26/12	Other Solid	C	200.8
B2H117	3/26/12	Other Solid	C	200.8
B2L1H3	3/26/12	Other Solid	C	200.8
B2H1T9	3/26/12	Other Solid	C	200.8
B2H1V5	3/26/12	Other Solid	C	200.8
B2H1V2	3/26/12	Other Solid	C	200.8

Data validation was conducted in accordance with the CHPRC validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5 (SAP). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Documentation Requested By Client

## **DATA QUALITY OBJECTIVES**

- **Holding Times and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirement for ICP metals are analysis within 180 days of sample collection, and the holding time requirement for mercury is analysis within 28 days of sample collection. There were no specific preservation required for the inorganic soil sample analysis.

The samples were analyzed within the prescribed holding times.

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

### **Laboratory Blanks**

All laboratory blank results were acceptable with the following exception. In the method blank for SDG WSCF120798, Cu and V were detected but < the RL. In the method blank for SDG WSCF120413, Cr and V were detected but < the RL. The Cr and V results of sample B2L1H3 were detects < the RL. Therefore, they should be qualified non-detect at their respective RLs and flagged "U." The other associated sample results were all much > the RL and should not be qualified.

### **Trip Blanks**

No trip blanks were submitted for validation.

### **Field Blanks**

No field blanks were submitted for validation.

### **Equipment Blanks**

All equipment blank results were acceptable with the following exceptions. In equipment blank B2L1H3, Mn, Cr, Co, V, Pb, Mo, Sr, and U were detected. The Cr and V results were qualified non-detect due to method blank contamination.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results, and laboratory control sample results. According to the SAP, the matrix spike sample accuracy limits are 70% to 130% and the laboratory control sample accuracy limits are ones specified by the DV procedure. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

### **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples**

All MS/MSD recoveries were acceptable with the following exceptions. The MS and/or MSD recoveries for Mn and Se were < the QC acceptance limits but >30%. All Mn sample results

were detects and, therefore, should be qualified as estimates and flagged “J-.” The Se sample results were non-detects and, therefore, should be qualified as estimates and flagged “UJ.”

### **Laboratory Control Samples (LCSs)**

All LCS recoveries were acceptable.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limit is 30%. The limits for reported analytes not listed in the SAP are specified by the DV procedure. When duplicate RPDs exceed the limits and associated results are <5X the reporting limit (RL) with absolute differences <2X the RL, no precision infraction occurred.

### **MS/MSD Samples**

All MS/MSD RPD values were acceptable with the following exception. The MS/MSD RPD for Se was > the QC acceptance limit. The associated sample results were all non-detects and, therefore, should be qualified as estimates and flagged “UJ.”

### **Field Duplicate Samples**

All field duplicate results were acceptable with the following exception. The field duplicate RPDs for Mn (36%), Ni (46%), Ba (38%), V (36%), Zn (42%), Pb (43%), and Sr (49%) were >35%. No sample data should be qualified as a result.

### **Field Split Samples**

All field split results were acceptable.

- **Detection Limits**

Reported MDLs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDLs with associated non-detected sample results were below the CRDLs.

- **Completeness**

SDGs WSCF120798, SL1276, and WSCF120413 were submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

## **MAJOR DEFICIENCIES**

None found.

## **MINOR DEFICIENCIES**

Minor deficiencies leading to qualification of Cr and V sample results as non-detects were due to blank contamination, and those leading to qualification of Mn and Se sample results as estimates were due to MS and/or MSD recoveries < the QC acceptance limit and poor duplicate precision. See the table in Appendix 2 for a listing of all affected sample results.

## **REFERENCES**

GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009.

## **Appendix 1**

### **Glossary of Data Reporting Qualifiers**

Qualifiers that may be applied by data validators in compliance with the CHPRC statement of work are as follows:

- **U** — The constituent was analyzed for, but was not detected. The data should be considered usable for decision-making purposes.
- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the RL. The data should be considered usable for decision-making purposes.
- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **N** — The analysis indicates the presence of an analyte that has been tentatively identified.
- **NJ** — The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
- **NJ+** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation.
- **NJ-** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation.
- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.
- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

**Appendix 2**  
**Summary of Data Qualification**

<b>Inorganic Data Qualification Summary</b>			
SDG: WSCF120798, SL1276, WSCF120413	Reviewer: AQA	Project: 100-K	Page 1 of 1
<b>Analyte(s)</b>	<b>Qualifier</b>	<b>Samples Affected</b>	<b>Reason</b>
Cr	1.1U	B2L1H3	Blank contamination
V	2.2U	B2L1H3	Blank contamination
Mn	J-	B2H111, B2H114, B2L1F6, B2H117, B2L1H3, B2H1T9, B2H1V5, B2H1V2	Low MS/MSD recoveries
Se	UJ	B2H111, B2H114, B2L1F6, B2H117, B2L1H3, B2H1T9, B2H1V5, B2H1V2	Low MS recovery and poor duplicate precision

Comments: None

## **Appendix 3**

### Annotated Laboratory Reports

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798001  
 SAF# F11-146  
 Sample ID B2L1D4

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anion Prep (S)</del>										<del>06/20/12</del>
<del>Anions by Ion Chromatography (Solid)</del>										
<del>Chloride</del>	<del>16887-00-6</del>	<del>LA-533-410</del>	<del>B</del>	<del>10.4</del>		<del>mg/kg</del>	<del>1</del>	<del>3.0</del>	<del>21</del>	<del>06/20/12</del>
<del>Sulfate</del>	<del>14808-79-8</del>	<del>LA-533-410</del>		<del>131</del>		<del>mg/kg</del>	<del>1</del>	<del>5.7</del>	<del>55</del>	<del>06/20/12</del>
ICPMS Prep (S)										06/25/12
ICP-2008 MS All possible metal										
Manganese	7439-96-5	LA-505-412		379		mg/kg	0.5	0.054	0.54	06/26/12
Nickel	7440-02-0	LA-505-412		8.57		mg/kg	0.5	0.054	0.54	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0456		mg/kg	0.5	0.027	0.27	06/26/12
Antimony	7440-36-0	LA-505-412		27.7		mg/kg	0.5	0.16	1.6	06/26/12
Barium	7440-39-3	LA-505-412		123		mg/kg	0.5	0.11	1.1	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.304		mg/kg	0.5	0.054	0.54	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.234		mg/kg	0.5	0.027	0.27	06/26/12
Chromium	7440-47-3	LA-505-412		13.0		mg/kg	0.5	0.054	0.54	06/26/12
Cobalt	7440-48-4	LA-505-412		9.98		mg/kg	0.5	0.027	0.13	06/26/12
Copper	7440-50-8	LA-505-412		39.4		mg/kg	0.5	0.054	0.54	06/26/12
Vanadium	7440-62-2	LA-505-412		66.4		mg/kg	0.5	0.11	1.1	06/26/12
Zinc	7440-66-6	LA-505-412		130		mg/kg	0.5	0.54	5.4	06/26/12
Lead	7439-92-1	LA-505-412		5.59		mg/kg	0.5	0.027	0.27	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798001  
 SAF# F11-146  
 Sample ID B2L1D4

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.0515		mg/kg	0.5	0.027	0.11	06/26/12
Molybdenum	7439-98-7	LA-505-412		1.63		mg/kg	0.5	0.027	0.27	06/26/12
Strontium	7440-24-6	LA-505-412		92.0		mg/kg	0.5	0.054	0.54	06/26/12
Tin	7440-31-5	LA-505-412		5.62		mg/kg	0.5	0.027	0.27	06/26/12
Uranium	7440-61-1	LA-505-412		1.21		mg/kg	0.5	0.027	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		52.9		mg/kg	0.5	0.11	1.1	06/26/12
Selenium	7782-49-2	LA-505-412	B	0.281		mg/kg	0.5	0.27	2.7	06/26/12
Boron	7440-42-8	LA-505-412		4.57		mg/kg	0.5	0.27	2.7	06/26/12
<del>Preparation for Cr6 (SO)</del>										<del>06/26/12</del>
<del>Hexavalent chromium</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.10</del>		<del>ug/g</del>	<del>1</del>	<del>0.10</del>	<del>0.52</del>	<del>06/26/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
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B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798002  
 SAF# F11-146  
 Sample ID B2L1D7

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anion Prep (S)</del>										<del>06/20/12</del>
<del>Anions by Ion Chromatography (Solid)</del>										
<del>Chloride</del>	<del>16887-00-6</del>	<del>LA-533-410</del>		<del>37.0</del>		<del>mg/kg</del>	<del>1</del>	<del>3.1</del>	<del>22</del>	<del>06/20/12</del>
<del>Sulfate</del>	<del>14808-79-8</del>	<del>LA-533-410</del>		<del>169</del>		<del>mg/kg</del>	<del>1</del>	<del>5.9</del>	<del>57</del>	<del>06/20/12</del>
ICPMS Prep (S)										06/25/12
ICP-2008 MS All possible metal										
Manganese	7439-96-5	LA-505-412		301		mg/kg	0.5	0.060	0.60	06/26/12
Nickel	7440-02-0	LA-505-412		9.27		mg/kg	0.5	0.060	0.60	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0429		mg/kg	0.5	0.030	0.30	06/26/12
Antimony	7440-36-0	LA-505-412		30.3		mg/kg	0.5	0.18	1.8	06/26/12
Barium	7440-39-3	LA-505-412		110		mg/kg	0.5	0.12	1.2	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.377		mg/kg	0.5	0.060	0.60	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0882		mg/kg	0.5	0.030	0.30	06/26/12
Chromium	7440-47-3	LA-505-412		12.7		mg/kg	0.5	0.060	0.60	06/26/12
Cobalt	7440-48-4	LA-505-412		7.95		mg/kg	0.5	0.030	0.15	06/26/12
Copper	7440-50-8	LA-505-412		37.8		mg/kg	0.5	0.060	0.60	06/26/12
Vanadium	7440-62-2	LA-505-412		51.7		mg/kg	0.5	0.12	1.2	06/26/12
Zinc	7440-66-6	LA-505-412		93.2		mg/kg	0.5	0.60	6.0	06/26/12
Lead	7439-92-1	LA-505-412		7.30		mg/kg	0.5	0.030	0.30	06/26/12

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B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798002  
 SAF# F11-146  
 Sample ID B2L1D7

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412		0.212		mg/kg	0.5	0.030	0.12	06/26/12
Molybdenum	7439-98-7	LA-505-412		1.79		mg/kg	0.5	0.030	0.30	06/26/12
Strontium	7440-24-6	LA-505-412		101		mg/kg	0.5	0.060	0.60	06/26/12
Tin	7440-31-5	LA-505-412		4.58		mg/kg	0.5	0.030	0.30	06/26/12
Uranium	7440-61-1	LA-505-412		2.18		mg/kg	0.5	0.030	0.15	06/26/12
Arsenic	7440-38-2	LA-505-412		42.6		mg/kg	0.5	0.12	1.2	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.30		mg/kg	0.5	0.30	3.0	06/26/12
Boron	7440-42-8	LA-505-412		4.54		mg/kg	0.5	0.30	3.0	06/26/12
<del>Preparation for Cr6 (SO)</del>										<del>06/26/12</del>
<del>Hexavalent chromium</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.11</del>		<del>ug/g</del>	<del>1</del>	<del>0.11</del>	<del>0.54</del>	<del>06/26/12</del>

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 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

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 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798003  
 SAF# F11-146  
 Sample ID B2L1F0

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anion Prep (S)</del>										<del>06/20/12</del>
<del>Anions by Ion Chromatography (Solid)</del>										
<del>Chloride</del>	<del>16887-00-6</del>	<del>LA-533-410</del>		<del>30.3</del>		<del>mg/kg</del>	<del>1</del>	<del>3.1</del>	<del>22</del>	<del>06/20/12</del>
<del>Sulfate</del>	<del>14808-79-8</del>	<del>LA-533-410</del>		<del>151</del>		<del>mg/kg</del>	<del>1</del>	<del>6.0</del>	<del>57</del>	<del>06/20/12</del>
ICPMS Prep (S)										06/25/12
ICP-2008 MS All possible metal										
Manganese	7439-96-5	LA-505-412		260		mg/kg	0.5	0.055	0.55	06/26/12
Nickel	7440-02-0	LA-505-412		7.70		mg/kg	0.5	0.055	0.55	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0371		mg/kg	0.5	0.027	0.27	06/26/12
Antimony	7440-36-0	LA-505-412		13.4		mg/kg	0.5	0.16	1.6	06/26/12
Barium	7440-39-3	LA-505-412		117		mg/kg	0.5	0.11	1.1	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.371		mg/kg	0.5	0.055	0.55	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0595		mg/kg	0.5	0.027	0.27	06/26/12
Chromium	7440-47-3	LA-505-412		11.2		mg/kg	0.5	0.055	0.55	06/26/12
Cobalt	7440-48-4	LA-505-412		7.75		mg/kg	0.5	0.027	0.14	06/26/12
Copper	7440-50-8	LA-505-412		27.6		mg/kg	0.5	0.055	0.55	06/26/12
Vanadium	7440-62-2	LA-505-412		45.0		mg/kg	0.5	0.11	1.1	06/26/12
Zinc	7440-66-6	LA-505-412		61.5		mg/kg	0.5	0.55	5.5	06/26/12
Lead	7439-92-1	LA-505-412		5.22		mg/kg	0.5	0.027	0.27	06/26/12

MDL = Minimum Detection Limit  
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 TP Err = Total Propagated Error  
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B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798003  
 SAF# F11-146  
 Sample ID B2L1F0

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.0295		mg/kg	0.5	0.027	0.11	06/26/12
Molybdenum	7439-98-7	LA-505-412		1.46		mg/kg	0.5	0.027	0.27	06/26/12
Strontium	7440-24-6	LA-505-412		88.9		mg/kg	0.5	0.055	0.55	06/26/12
Tin	7440-31-5	LA-505-412		2.41		mg/kg	0.5	0.027	0.27	06/26/12
Uranium	7440-61-1	LA-505-412		1.13		mg/kg	0.5	0.027	0.14	06/26/12
Arsenic	7440-38-2	LA-505-412		21.8		mg/kg	0.5	0.11	1.1	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.27		mg/kg	0.5	0.27	2.7	06/26/12
Boron	7440-42-8	LA-505-412		3.41		mg/kg	0.5	0.27	2.7	06/26/12
<del>Preparation for Cr6 (SO)</del>										<del>06/26/12</del>
<del>Hexavalent chromium</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.11</del>		<del>ug/g</del>	<del>1</del>	<del>0.11</del>	<del>0.54</del>	<del>06/26/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798004  
 SAF# F11-146  
 Sample ID B2L1F3

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anion Prep (S)</del>										<del>06/20/12</del>
<del>Anions by Ion Chromatography (Solid)</del>										
<del>Chloride</del>	<del>16887-00-6</del>	<del>LA-533-410</del>	<del>B</del>	<del>7.83</del>		<del>mg/kg</del>	<del>1</del>	<del>3.1</del>	<del>22</del>	<del>06/20/12</del>
<del>Sulfate</del>	<del>14808-79-8</del>	<del>LA-533-410</del>		<del>250</del>		<del>mg/kg</del>	<del>1</del>	<del>5.8</del>	<del>56</del>	<del>06/20/12</del>
ICPMS Prep (S)										06/25/12
ICP-2008 MS All possible metal										
Manganese	7439-96-5	LA-505-412		317		mg/kg	0.5	0.051	0.51	06/26/12
Nickel	7440-02-0	LA-505-412		8.56		mg/kg	0.5	0.051	0.51	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0505		mg/kg	0.5	0.025	0.25	06/26/12
Antimony	7440-36-0	LA-505-412		14.4		mg/kg	0.5	0.15	1.5	06/26/12
Barium	7440-39-3	LA-505-412		134		mg/kg	0.5	0.10	1.0	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.418		mg/kg	0.5	0.051	0.51	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0551		mg/kg	0.5	0.025	0.25	06/26/12
Chromium	7440-47-3	LA-505-412		12.0		mg/kg	0.5	0.051	0.51	06/26/12
Cobalt	7440-48-4	LA-505-412		7.08		mg/kg	0.5	0.025	0.13	06/26/12
Copper	7440-50-8	LA-505-412		26.3		mg/kg	0.5	0.051	0.51	06/26/12
Vanadium	7440-62-2	LA-505-412		49.8		mg/kg	0.5	0.10	1.0	06/26/12
Zinc	7440-66-6	LA-505-412		65.2		mg/kg	0.5	0.51	5.1	06/26/12
Lead	7439-92-1	LA-505-412		4.95		mg/kg	0.5	0.025	0.25	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798004  
 SAF# F11-146  
 Sample ID B2L1F3

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.0648		mg/kg	0.5	0.025	0.10	06/26/12
Molybdenum	7439-98-7	LA-505-412		1.80		mg/kg	0.5	0.025	0.25	06/26/12
Strontium	7440-24-6	LA-505-412		99.0		mg/kg	0.5	0.051	0.51	06/26/12
Tin	7440-31-5	LA-505-412		2.81		mg/kg	0.5	0.025	0.25	06/26/12
Uranium	7440-61-1	LA-505-412		1.21		mg/kg	0.5	0.025	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		25.4		mg/kg	0.5	0.10	1.0	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.25		mg/kg	0.5	0.25	2.5	06/26/12
Boron	7440-42-8	LA-505-412		4.12		mg/kg	0.5	0.25	2.5	06/26/12
<del>Preparation for Cr6 (SO)</del>										<del>06/26/12</del>
<del>Hexavalent chromium</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.11</del>		<del>ug/g</del>	<del>1</del>	<del>0.11</del>	<del>0.53</del>	<del>06/26/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798005  
 SAF# F11-146  
 Sample ID B2H1V8

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anion Prep (S)</del>										<del>06/20/12</del>
<del>Anions by Ion Chromatography (Solid)</del>										
<del>Chloride</del>	<del>16887-00-6</del>	<del>LA-533-410</del>	<del>B</del>	<del>20.5</del>		<del>mg/kg</del>	<del>1</del>	<del>3.1</del>	<del>22</del>	<del>06/20/12</del>
<del>Sulfate</del>	<del>14808-79-8</del>	<del>LA-533-410</del>		<del>219</del>		<del>mg/kg</del>	<del>1</del>	<del>5.9</del>	<del>56</del>	<del>06/20/12</del>
ICPMS Prep (S)										06/25/12
ICP-2008 MS All possible metal										
Manganese	7439-96-5	LA-505-412		336		mg/kg	0.5	0.053	0.53	06/26/12
Nickel	7440-02-0	LA-505-412		10.2		mg/kg	0.5	0.053	0.53	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0460		mg/kg	0.5	0.027	0.27	06/26/12
Antimony	7440-36-0	LA-505-412		44.7		mg/kg	0.5	0.16	1.6	06/26/12
Barium	7440-39-3	LA-505-412		132		mg/kg	0.5	0.11	1.1	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.276		mg/kg	0.5	0.053	0.53	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0936		mg/kg	0.5	0.027	0.27	06/26/12
Chromium	7440-47-3	LA-505-412		15.4		mg/kg	0.5	0.053	0.53	06/26/12
Cobalt	7440-48-4	LA-505-412		8.85		mg/kg	0.5	0.027	0.13	06/26/12
Copper	7440-50-8	LA-505-412		41.1		mg/kg	0.5	0.053	0.53	06/26/12
Vanadium	7440-62-2	LA-505-412		62.0		mg/kg	0.5	0.11	1.1	06/26/12
Zinc	7440-66-6	LA-505-412		127		mg/kg	0.5	0.53	5.3	06/26/12
Lead	7439-92-1	LA-505-412		7.18		mg/kg	0.5	0.027	0.27	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798005  
 SAF# F11-146  
 Sample ID B2H1V8

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.0636		mg/kg	0.5	0.027	0.11	06/26/12
Molybdenum	7439-98-7	LA-505-412		2.22		mg/kg	0.5	0.027	0.27	06/26/12
Strontium	7440-24-6	LA-505-412		118		mg/kg	0.5	0.053	0.53	06/26/12
Tin	7440-31-5	LA-505-412		7.47		mg/kg	0.5	0.027	0.27	06/26/12
Uranium	7440-61-1	LA-505-412		1.28		mg/kg	0.5	0.027	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		65.8		mg/kg	0.5	0.11	1.1	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.27		mg/kg	0.5	0.27	2.7	06/26/12
Boron	7440-42-8	LA-505-412		3.48		mg/kg	0.5	0.27	2.7	06/26/12
<del>Preparation for Cr6 (SO)</del>										<del>06/26/12</del>
<del>Hexavalent chromium</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.11</del>		<del>ug/g</del>	<del>1</del>	<del>0.11</del>	<del>0.53</del>	<del>06/26/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798006  
 SAF# F11-146  
 Sample ID B2H1W1

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anion Prep (S)</del>										<del>06/20/12</del>
<del>Anions by Ion Chromatography (Solid)</del>										
<del>Chloride</del>	<del>16887-00-6</del>	<del>LA-533-410</del>		<del>21.9</del>		<del>mg/kg</del>	<del>1</del>	<del>3.0</del>	<del>21</del>	<del>06/20/12</del>
<del>Sulfate</del>	<del>14808-79-8</del>	<del>LA-533-410</del>		<del>253</del>		<del>mg/kg</del>	<del>1</del>	<del>5.8</del>	<del>55</del>	<del>06/20/12</del>
ICPMS Prep (S)										06/25/12
ICP-2008 MS All possible metal										
Manganese	7439-96-5	LA-505-412		278		mg/kg	0.5	0.051	0.51	06/26/12
Nickel	7440-02-0	LA-505-412		9.25		mg/kg	0.5	0.051	0.51	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0783		mg/kg	0.5	0.025	0.25	06/26/12
Antimony	7440-36-0	LA-505-412		29.3		mg/kg	0.5	0.15	1.5	06/26/12
Barium	7440-39-3	LA-505-412		137		mg/kg	0.5	0.10	1.0	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.297		mg/kg	0.5	0.051	0.51	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.245		mg/kg	0.5	0.025	0.25	06/26/12
Chromium	7440-47-3	LA-505-412		18.1		mg/kg	0.5	0.051	0.51	06/26/12
Cobalt	7440-48-4	LA-505-412		7.54		mg/kg	0.5	0.025	0.13	06/26/12
Copper	7440-50-8	LA-505-412		39.5		mg/kg	0.5	0.051	0.51	06/26/12
Vanadium	7440-62-2	LA-505-412		51.0		mg/kg	0.5	0.10	1.0	06/26/12
Zinc	7440-66-6	LA-505-412		125		mg/kg	0.5	0.51	5.1	06/26/12
Lead	7439-92-1	LA-505-412		23.9		mg/kg	0.5	0.025	0.25	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

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 C - Analyte was found in the Associated Blank. (Inorganic)  
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 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798006  
 SAF# F11-146  
 Sample ID B2H1W1

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412		0.606		mg/kg	0.5	0.025	0.10	06/26/12
Molybdenum	7439-98-7	LA-505-412		1.69		mg/kg	0.5	0.025	0.25	06/26/12
Strontium	7440-24-6	LA-505-412		103		mg/kg	0.5	0.051	0.51	06/26/12
Tin	7440-31-5	LA-505-412		5.51		mg/kg	0.5	0.025	0.25	06/26/12
Uranium	7440-61-1	LA-505-412		1.76		mg/kg	0.5	0.025	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		49.2		mg/kg	0.5	0.10	1.0	06/26/12
Selenium	7782-49-2	LA-505-412	B	0.268		mg/kg	0.5	0.25	2.5	06/26/12
Boron	7440-42-8	LA-505-412		3.54		mg/kg	0.5	0.25	2.5	06/26/12
<del>Preparation for Cr6 (SO)</del>										<del>06/26/12</del>
<del>Hexavalent chromium</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.11</del>		<del>ug/g</del>	<del>1</del>	<del>0.11</del>	<del>0.53</del>	<del>06/26/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2L1H0

## TOTAL Metals

Lot-Sample #....: F2F220422-001

Matrix.....: SOLID

Date Sampled....: 06/19/12

Date Received...: 06/22/12

% Moisture.....: 8.7

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
Prep Batch #....: 2177017						
Silver	0.14 B	0.22	mg/kg	SW846 6020	06/25/12	MT9JV1AV
		Dilution Factor: 1		MDL.....: 0.026		
Arsenic	39.8	1.1	mg/kg	SW846 6020	06/25/12	MT9JV1AE
		Dilution Factor: 1		MDL.....: 0.28		
Barium	111	2.2	mg/kg	SW846 6020	06/25/12	MT9JV1AF
		Dilution Factor: 1		MDL.....: 0.10		
Beryllium	0.29	0.11	mg/kg	SW846 6020	06/25/12	MT9JV1AG
		Dilution Factor: 1		MDL.....: 0.028		
Bismuth	ND	2.2	mg/kg	SW846 6020	06/25/12	MT9JV1AH
		Dilution Factor: 1		MDL.....: 0.17		
Boron	5.7 B	11.0	mg/kg	SW846 6020	06/25/12	MT9JV1AJ
		Dilution Factor: 1		MDL.....: 3.7		
Cadmium	0.076	0.055	mg/kg	SW846 6020	06/25/12	MT9JV1AK
		Dilution Factor: 1		MDL.....: 0.018		
Cobalt	7.6	0.22	mg/kg	SW846 6020	06/25/12	MT9JV1AL
		Dilution Factor: 1		MDL.....: 0.047		
Chromium	11.8	1.1	mg/kg	SW846 6020	06/25/12	MT9JV1A2
		Dilution Factor: 1		MDL.....: 0.49		
Copper	41.7	1.1	mg/kg	SW846 6020	06/25/12	MT9JV1AM
		Dilution Factor: 1		MDL.....: 0.11		
Manganese	352 N	0.55	mg/kg	SW846 6020	06/25/12	MT9JV1AP
		Dilution Factor: 1		MDL.....: 0.084		
Molybdenum	1.9	0.55	mg/kg	SW846 6020	06/25/12	MT9JV1AQ
		Dilution Factor: 1		MDL.....: 0.14		
Nickel	9.2	0.55	mg/kg	SW846 6020	06/25/12	MT9JV1AR
		Dilution Factor: 1		MDL.....: 0.12		
Lead	6.3	0.33	mg/kg	SW846 6020	06/25/12	MT9JV1AN
		Dilution Factor: 1		MDL.....: 0.11		

(Continued on next page)

KS  
07/11/12

## CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2L1H0

## TOTAL Metals

Lot-Sample #....: F2F220422-001

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
Phosphorus	672	54.8	mg/kg	SW846 6020	06/25/12	MT9JV1AT
		Dilution Factor: 1		MDL.....: 1.5		
Selenium	0.89	0.55	mg/kg	SW846 6020	06/25/12	MT9JV1AU
		Dilution Factor: 1		MDL.....: 0.17		
Tin	4.5	0.22	mg/kg	SW846 6020	06/25/12	MT9JV1AX
		Dilution Factor: 1		MDL.....: 0.11		
Strontium	99.2	0.55	mg/kg	SW846 6020	06/25/12	MT9JV1AW
		Dilution Factor: 1		MDL.....: 0.23		
Uranium	1.1	0.11	mg/kg	SW846 6020	06/25/12	MT9JV1A3
		Dilution Factor: 1		MDL.....: 0.022		
Vanadium	46.7	1.1	mg/kg	SW846 6020	06/25/12	MT9JV1A0
		Dilution Factor: 1		MDL.....: 0.81		
Zinc	97.3	5.5	mg/kg	SW846 6020	06/25/12	MT9JV1A1
		Dilution Factor: 1		MDL.....: 1.5		
Prep Batch #....: 2177018						
Antimony	36.0	0.55	mg/kg	SW846 6020	06/25-06/26/12	MT9JV1A4
		Dilution Factor: 1		MDL.....: 0.071		
Prep Batch #....: 2178013						
Mercury	0.091 N	0.033	mg/kg	SW846 7471A	06/26/12	MT9JV1A5
		Dilution Factor: 1		MDL.....: 0.011		

**NOTE (S) :**

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

KS  
07/11/12

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413001  
 SAF# F11-146  
 Sample ID B2H111

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	B	4.80		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		266		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.092</del>		<del>ug/g</del>	<del>1</del>	<del>0.092</del>	<del>0.46</del>	<del>04/03/12</del>
<b>ICPMS Prep</b>										<b>03/27/12</b>
<b>ICP-MS</b>										
Manganese	7439-96-5	LA-505-412	N	210	J-	mg/kg	1	0.099	0.99	04/05/12
Nickel	7440-02-0	LA-505-412		9.48		mg/kg	1	0.099	0.99	04/05/12
Silver	7440-22-4	LA-505-412	U	<0.049		mg/kg	1	0.049	0.49	04/05/12
Antimony	7440-36-0	LA-505-412		6.47		mg/kg	1	0.30	3.0	04/05/12
Barium	7440-39-3	LA-505-412		72.8		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.185		mg/kg	1	0.099	0.99	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.427		mg/kg	1	0.049	0.49	04/05/12
Chromium	7440-47-3	LA-505-412		17.2		mg/kg	1	0.099	0.99	04/05/12
Cobalt	7440-48-4	LA-505-412		4.76		mg/kg	1	0.049	0.25	04/05/12
Copper	7440-50-8	LA-505-412		30.9		mg/kg	1	0.099	0.99	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413001  
 SAF# F11-146  
 Sample ID B2H111

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412		30.6		mg/kg	1	0.20	2.0	04/05/12
Zinc	7440-66-6	LA-505-412		141		mg/kg	1	0.99	9.9	04/05/12
Lead	7439-92-1	LA-505-412		24.7		mg/kg	1	0.049	0.49	04/05/12
Mercury	7439-97-6	LA-505-412		1.24		mg/kg	1	0.049	0.20	04/05/12
Molybdenum	7439-98-7	LA-505-412		1.46		mg/kg	1	0.049	0.49	04/05/12
Strontium	7440-24-6	LA-505-412		52.7		mg/kg	1	0.099	0.99	04/05/12
Tin	7440-31-5	LA-505-412		2.27		mg/kg	1	0.049	0.49	04/05/12
Uranium	7440-61-1	LA-505-412		1.16		mg/kg	1	0.049	0.25	04/05/12
Arsenic	7440-38-2	LA-505-412		19.8		mg/kg	1	0.20	2.0	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.25	UU	mg/kg	0.5	0.25	2.5	04/06/12
Boron	7440-42-8	LA-505-412	B	4.19		mg/kg	1	0.49	4.9	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413002  
 SAF# F11-146  
 Sample ID B2H114

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	B	8.93		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		492		mg/kg	1	5.4	52	04/02/12
<del>Cr(VI) Prep</del>										<del>04/02/12</del>
<del>Cr(VI)</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.097</del>		<del>ug/g</del>	<del>1</del>	<del>0.097</del>	<del>0.48</del>	<del>04/03/12</del>
<del>ICPMS Prep</del>										<del>03/27/12</del>
<del>ICP-MS</del>										
Manganese	7439-96-5	LA-505-412	N	224	J-	mg/kg	1	0.10	1.0	04/05/12
Nickel	7440-02-0	LA-505-412		7.55		mg/kg	1	0.10	1.0	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0582		mg/kg	1	0.052	0.52	04/05/12
Antimony	7440-36-0	LA-505-412	B	1.88		mg/kg	1	0.31	3.1	04/05/12
Barium	7440-39-3	LA-505-412		93.0		mg/kg	1	0.21	2.1	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.248		mg/kg	1	0.10	1.0	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.299		mg/kg	1	0.052	0.52	04/05/12
Chromium	7440-47-3	LA-505-412		11.9		mg/kg	1	0.10	1.0	04/05/12
Cobalt	7440-48-4	LA-505-412		4.80		mg/kg	1	0.052	0.26	04/05/12
Copper	7440-50-8	LA-505-412		16.5		mg/kg	1	0.10	1.0	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413002  
 SAF# F11-146  
 Sample ID B2H114

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412		36.0		mg/kg	1	0.21	2.1	04/05/12
Zinc	7440-66-6	LA-505-412		82.6		mg/kg	1	1.0	10	04/05/12
Lead	7439-92-1	LA-505-412		21.1		mg/kg	1	0.052	0.52	04/05/12
Mercury	7439-97-6	LA-505-412		1.04		mg/kg	1	0.052	0.21	04/05/12
Molybdenum	7439-98-7	LA-505-412		0.779		mg/kg	1	0.052	0.52	04/05/12
Strontium	7440-24-6	LA-505-412		64.6		mg/kg	1	0.10	1.0	04/05/12
Tin	7440-31-5	LA-505-412		1.01		mg/kg	1	0.052	0.52	04/05/12
Uranium	7440-61-1	LA-505-412		1.34		mg/kg	1	0.052	0.26	04/05/12
Arsenic	7440-38-2	LA-505-412		9.30		mg/kg	1	0.21	2.1	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.26	UJ	mg/kg	0.5	0.26	2.6	04/06/12
Boron	7440-42-8	LA-505-412	B	2.03		mg/kg	1	0.52	5.2	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413003  
 SAF# F11-146  
 Sample ID B2L1F6

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	B	15.3		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		352		mg/kg	1	5.4	52	04/02/12
<del>Cr(VI) Prep</del>										<del>04/02/12</del>
<del>Cr(VI)</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.096</del>		<del>ug/g</del>	<del>1</del>	<del>0.096</del>	<del>0.48</del>	<del>04/03/12</del>
<del>ICPMS Prep</del>										<del>03/27/12</del>
<del>ICP-MS</del>										
Manganese	7439-96-5	LA-505-412	N	236	J-	mg/kg	1	0.092	0.92	04/05/12
Nickel	7440-02-0	LA-505-412		7.20		mg/kg	1	0.092	0.92	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0480		mg/kg	1	0.046	0.46	04/05/12
Antimony	7440-36-0	LA-505-412	B	1.97		mg/kg	1	0.28	2.8	04/05/12
Barium	7440-39-3	LA-505-412		95.0		mg/kg	1	0.18	1.8	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.255		mg/kg	1	0.092	0.92	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.175		mg/kg	1	0.046	0.46	04/05/12
Chromium	7440-47-3	LA-505-412		8.90		mg/kg	1	0.092	0.92	04/05/12
Cobalt	7440-48-4	LA-505-412		5.52		mg/kg	1	0.046	0.23	04/05/12
Copper	7440-50-8	LA-505-412		15.3		mg/kg	1	0.092	0.92	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL (or EQL) but >= the IDL/MDL (Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

# WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413003  
 SAF# F11-146  
 Sample ID B2L1F6

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412		41.2		mg/kg	1	0.18	1.8	04/05/12
Zinc	7440-66-6	LA-505-412		46.4		mg/kg	1	0.92	9.2	04/05/12
Lead	7439-92-1	LA-505-412		3.34		mg/kg	1	0.046	0.46	04/05/12
Mercury	7439-97-6	LA-505-412	U	<0.046		mg/kg	1	0.046	0.18	04/05/12
Molybdenum	7439-98-7	LA-505-412		0.926		mg/kg	1	0.046	0.46	04/05/12
Strontium	7440-24-6	LA-505-412		61.1		mg/kg	1	0.092	0.92	04/05/12
Tin	7440-31-5	LA-505-412		0.807		mg/kg	1	0.046	0.46	04/05/12
Uranium	7440-61-1	LA-505-412		0.738		mg/kg	1	0.046	0.23	04/05/12
Arsenic	7440-38-2	LA-505-412		9.44		mg/kg	1	0.18	1.8	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.23	UJ	mg/kg	0.5	0.23	2.3	04/06/12
Boron	7440-42-8	LA-505-412	B	3.15		mg/kg	1	0.46	4.6	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413004  
 SAF# F11-146  
 Sample ID B2H117

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	B	14.4		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		370		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.094</del>		<del>ug/g</del>	<del>1</del>	<del>0.094</del>	<del>0.47</del>	<del>04/03/12</del>
<b>ICPMS Prep</b>										<b>03/27/12</b>
<b>ICP-MS</b>										
Manganese	7439-96-5	LA-505-412	N	340	J-	mg/kg	1	0.11	1.1	04/05/12
Nickel	7440-02-0	LA-505-412		11.6		mg/kg	1	0.11	1.1	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0633		mg/kg	1	0.055	0.55	04/05/12
Antimony	7440-36-0	LA-505-412	B	2.83		mg/kg	1	0.33	3.3	04/05/12
Barium	7440-39-3	LA-505-412		139		mg/kg	1	0.22	2.2	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.359		mg/kg	1	0.11	1.1	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.349		mg/kg	1	0.055	0.55	04/05/12
Chromium	7440-47-3	LA-505-412		12.3		mg/kg	1	0.11	1.1	04/05/12
Cobalt	7440-48-4	LA-505-412		7.43		mg/kg	1	0.055	0.27	04/05/12
Copper	7440-50-8	LA-505-412		20.4		mg/kg	1	0.11	1.1	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413004  
 SAF# F11-146  
 Sample ID B2H117

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412		59.2		mg/kg	1	0.22	2.2	04/05/12
Zinc	7440-66-6	LA-505-412		70.7		mg/kg	1	1.1	11	04/05/12
Lead	7439-92-1	LA-505-412		5.18		mg/kg	1	0.055	0.55	04/05/12
Mercury	7439-97-6	LA-505-412	U	<0.055		mg/kg	1	0.055	0.22	04/05/12
Molybdenum	7439-98-7	LA-505-412		1.21		mg/kg	1	0.055	0.55	04/05/12
Strontium	7440-24-6	LA-505-412		101		mg/kg	1	0.11	1.1	04/05/12
Tin	7440-31-5	LA-505-412		1.12		mg/kg	1	0.055	0.55	04/05/12
Uranium	7440-61-1	LA-505-412		1.05		mg/kg	1	0.055	0.27	04/05/12
Arsenic	7440-38-2	LA-505-412		12.3		mg/kg	1	0.22	2.2	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.27	UJ	mg/kg	0.5	0.27	2.7	04/06/12
Boron	7440-42-8	LA-505-412	B	3.74		mg/kg	1	0.55	5.5	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413005  
 SAF# F11-146  
 Sample ID B2L1H3

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	U	<2.9		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410	U	<5.4		mg/kg	1	5.4	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.094</del>		<del>ug/g</del>	<del>1</del>	<del>0.094</del>	<del>0.47</del>	<del>04/03/12</del>
<b>ICPMS Prep</b>										<b>03/27/12</b>
<b>ICP-MS</b>										
Manganese	7439-96-5	LA-505-412	BN	0.373	J-	mg/kg	1	0.11	1.1	04/05/12
Nickel	7440-02-0	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	04/05/12
Silver	7440-22-4	LA-505-412	U	<0.054		mg/kg	1	0.054	0.54	04/05/12
Antimony	7440-36-0	LA-505-412	U	<0.33		mg/kg	1	0.33	3.3	04/05/12
Barium	7440-39-3	LA-505-412	U	<0.22		mg/kg	1	0.22	2.2	04/05/12
Beryllium	7440-41-7	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	04/05/12
Cadmium	7440-43-9	LA-505-412	U	<0.054		mg/kg	1	0.054	0.54	04/05/12
Chromium	7440-47-3	LA-505-412	BC	0.857	1.1U	mg/kg	1	0.11	1.1	04/05/12
Cobalt	7440-48-4	LA-505-412	B	0.0607		mg/kg	1	0.054	0.27	04/05/12
Copper	7440-50-8	LA-505-412		1.52		mg/kg	1	0.11	1.1	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL (or EQL) but >= the IDL/MDL (Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413005  
 SAF# F11-146  
 Sample ID B2L1H3

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412	BC	0.795	2.2U	mg/kg	1	0.22	2.2	04/05/12
Zinc	7440-66-6	LA-505-412	U	<1.1		mg/kg	1	1.1	11	04/05/12
Lead	7439-92-1	LA-505-412	B	0.0932		mg/kg	1	0.054	0.54	04/05/12
Mercury	7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	04/05/12
Molybdenum	7439-98-7	LA-505-412	B	0.0683		mg/kg	1	0.054	0.54	04/05/12
Strontium	7440-24-6	LA-505-412	B	0.147		mg/kg	1	0.11	1.1	04/05/12
Tin	7440-31-5	LA-505-412	U	<0.054		mg/kg	1	0.054	0.54	04/05/12
Uranium	7440-61-1	LA-505-412	B	0.0888		mg/kg	1	0.054	0.27	04/05/12
Arsenic	7440-38-2	LA-505-412	U	<0.22		mg/kg	1	0.22	2.2	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.27	UJ	mg/kg	0.5	0.27	2.7	04/06/12
Boron	7440-42-8	LA-505-412	U	<0.54		mg/kg	1	0.54	5.4	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413006  
 SAF# F11-146  
 Sample ID B2H1T9

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	B	8.84		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		420		mg/kg	1	5.5	52	04/02/12
<del>Cr(VI) Prep</del>										<del>04/02/12</del>
<del>Cr(VI)</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.098</del>		<del>ug/g</del>	<del>1</del>	<del>0.098</del>	<del>0.49</del>	<del>04/03/12</del>
<del>ICPMS Prep</del>										<del>03/27/12</del>
<del>ICP-MS</del>										
Manganese	7439-96-5	LA-505-412	N	307	J-	mg/kg	1	0.10	1.0	04/05/12
Nickel	7440-02-0	LA-505-412		10.2		mg/kg	1	0.10	1.0	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0750		mg/kg	1	0.050	0.50	04/05/12
Antimony	7440-36-0	LA-505-412	B	0.893		mg/kg	1	0.30	3.0	04/05/12
Barium	7440-39-3	LA-505-412		201		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.366		mg/kg	1	0.10	1.0	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.0860		mg/kg	1	0.050	0.50	04/05/12
Chromium	7440-47-3	LA-505-412		12.3		mg/kg	1	0.10	1.0	04/05/12
Cobalt	7440-48-4	LA-505-412		6.04		mg/kg	1	0.050	0.25	04/05/12
Copper	7440-50-8	LA-505-412		17.6		mg/kg	1	0.10	1.0	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL (or EQL) but >= the IDL/MDL (Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413006  
 SAF# F11-146  
 Sample ID B2H1T9

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412		55.4		mg/kg	1	0.20	2.0	04/05/12
Zinc	7440-66-6	LA-505-412		43.4		mg/kg	1	1.0	10	04/05/12
Lead	7439-92-1	LA-505-412		7.16		mg/kg	1	0.050	0.50	04/05/12
Mercury	7439-97-6	LA-505-412	U	<0.050		mg/kg	1	0.050	0.20	04/05/12
Molybdenum	7439-98-7	LA-505-412		1.11		mg/kg	1	0.050	0.50	04/05/12
Strontium	7440-24-6	LA-505-412		101		mg/kg	1	0.10	1.0	04/05/12
Tin	7440-31-5	LA-505-412		0.760		mg/kg	1	0.050	0.50	04/05/12
Uranium	7440-61-1	LA-505-412		1.24		mg/kg	1	0.050	0.25	04/05/12
Arsenic	7440-38-2	LA-505-412		8.14		mg/kg	1	0.20	2.0	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.25	UJ	mg/kg	0.5	0.25	2.5	04/06/12
Boron	7440-42-8	LA-505-412	B	2.99		mg/kg	1	0.50	5.0	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413007  
 SAF# F11-146  
 Sample ID B2H1V5

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	U	<2.9		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		84.5		mg/kg	1	5.5	52	04/02/12
<del>Cr(VI) Prep</del>										<del>04/02/12</del>
<del>Cr(VI)</del>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>U</del>	<del>&lt;0.093</del>		<del>ug/g</del>	<del>1</del>	<del>0.093</del>	<del>0.47</del>	<del>04/03/12</del>
<del>ICPMS Prep</del>										<del>03/27/12</del>
<del>ICP-MS</del>										
Manganese	7439-96-5	LA-505-412	N	310	J-	mg/kg	1	0.10	1.0	04/05/12
Nickel	7440-02-0	LA-505-412		7.70		mg/kg	1	0.10	1.0	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0702		mg/kg	1	0.051	0.51	04/05/12
Antimony	7440-36-0	LA-505-412	B	0.637		mg/kg	1	0.31	3.1	04/05/12
Barium	7440-39-3	LA-505-412		140		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.355		mg/kg	1	0.10	1.0	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.142		mg/kg	1	0.051	0.51	04/05/12
Chromium	7440-47-3	LA-505-412		9.91		mg/kg	1	0.10	1.0	04/05/12
Cobalt	7440-48-4	LA-505-412		5.74		mg/kg	1	0.051	0.25	04/05/12
Copper	7440-50-8	LA-505-412		14.8		mg/kg	1	0.10	1.0	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL (or EQL) but >= the IDL/MDL (Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X, Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413007  
 SAF# F11-146  
 Sample ID B2H1V5

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412		45.2		mg/kg	1	0.20	2.0	04/05/12
Zinc	7440-66-6	LA-505-412		40.0		mg/kg	1	1.0	10	04/05/12
Lead	7439-92-1	LA-505-412		5.08		mg/kg	1	0.051	0.51	04/05/12
Mercury	7439-97-6	LA-505-412	U	<0.051		mg/kg	1	0.051	0.20	04/05/12
Molybdenum	7439-98-7	LA-505-412		1.14		mg/kg	1	0.051	0.51	04/05/12
Strontium	7440-24-6	LA-505-412		82.6		mg/kg	1	0.10	1.0	04/05/12
Tin	7440-31-5	LA-505-412		0.650		mg/kg	1	0.051	0.51	04/05/12
Uranium	7440-61-1	LA-505-412		1.09		mg/kg	1	0.051	0.25	04/05/12
Arsenic	7440-38-2	LA-505-412		7.66		mg/kg	1	0.20	2.0	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.25	UJ	mg/kg	0.5	0.25	2.5	04/06/12
Boron	7440-42-8	LA-505-412	B	3.84		mg/kg	1	0.51	5.1	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

# WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413008  
 SAF# F11-146  
 Sample ID B2H1V2

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Anions by IC</del>										<del>04/02/12</del>
<del>Anions by IC</del>										
Chloride	16887-00-6	LA-533-410	B	16.8		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		269		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
<del>Hexavalent chromium</del>	<del>18540-29-9</del>	<del>LA-265-403</del>	<del>B</del>	<del>0.189</del>		<del>ug/g</del>	<del>1</del>	<del>0.095</del>	<del>0.47</del>	<del>04/03/12</del>
<b>ICPMS Prep</b>										<b>03/27/12</b>
<b>ICP-MS</b>										
Manganese	7439-96-5	LA-505-412	N	464	J-	mg/kg	1	0.098	0.98	04/05/12
Nickel	7440-02-0	LA-505-412		9.74		mg/kg	1	0.098	0.98	04/05/12
Silver	7440-22-4	LA-505-412	U	<0.049		mg/kg	1	0.049	0.49	04/05/12
Antimony	7440-36-0	LA-505-412		21.2		mg/kg	1	0.29	2.9	04/05/12
Barium	7440-39-3	LA-505-412		94.1		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.248		mg/kg	1	0.098	0.98	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.107		mg/kg	1	0.049	0.49	04/05/12
Chromium	7440-47-3	LA-505-412		15.0		mg/kg	1	0.098	0.98	04/05/12
Cobalt	7440-48-4	LA-505-412		7.32		mg/kg	1	0.049	0.24	04/05/12
Copper	7440-50-8	LA-505-412		44.3		mg/kg	1	0.098	0.98	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413008  
 SAF# F11-146  
 Sample ID B2H1V2

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Vanadium	7440-62-2	LA-505-412		31.7		mg/kg	1	0.20	2.0	04/05/12
Zinc	7440-66-6	LA-505-412		118		mg/kg	1	0.98	9.8	04/05/12
Lead	7439-92-1	LA-505-412		73.6		mg/kg	1	0.049	0.49	04/05/12
Mercury	7439-97-6	LA-505-412	B	0.159		mg/kg	1	0.049	0.20	04/05/12
Molybdenum	7439-98-7	LA-505-412		1.81		mg/kg	1	0.049	0.49	04/05/12
Strontium	7440-24-6	LA-505-412		52.4		mg/kg	1	0.098	0.98	04/05/12
Tin	7440-31-5	LA-505-412		9.08		mg/kg	1	0.049	0.49	04/05/12
Uranium	7440-61-1	LA-505-412		1.22		mg/kg	1	0.049	0.24	04/05/12
Arsenic	7440-38-2	LA-505-412		54.1		mg/kg	1	0.20	2.0	04/05/12
Selenium	7782-49-2	LA-505-412	UN	<0.24	UJ	mg/kg	0.5	0.24	2.4	04/06/12
Boron	7440-42-8	LA-505-412	B	3.57		mg/kg	1	0.49	4.9	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## **Appendix 4**

### Laboratory Narrative and Chain-of-Custody Documentation

### Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Master Contract 39818, Revision 3, "Laboratory Analytical Services to CHPRC Soil and Groundwater Remediation Project."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

### Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

### Inorganic Comments

**Anions** – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2  
**Narrative**  
WSCF120798

**Hexavalent Chromium** – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

**ICP-MS Metals** – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Vanadium and Copper – Detected in the Blank and evaluated. No sample results in this batch were affected. “C” Flags not required.
- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-220	PAGE 1 OF 2
COLLECTOR Frank Hall		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 9		PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. (N/A)		FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			
MATRIX* A-Air DL=Drum L=Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water W1=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool--4C	Cool--4C	Cool--4C	None	
		HOLDING TIME	6 Months	30 Days	28 Days/48 Hours	6 Months	
		TYPE OF CONTAINER	G/P	G/P	G/P	G/P	
		NO. OF CONTAINER(S)	1	1	1	1	
		VOLUME	120mL	60mL	60mL	120mL	
SPECIAL HANDLING AND/OR STORAGE  120798		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS 2007	Chromium Hex - 7199;	IC Anions - 200.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2L1D4	1 OTHER SOLID	JUN 19 2012	0949	✓	✓	✓	Qd 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM Frank Hall	DATE/TIME JUN 19 2012 1040	RECEIVED BY/STORED IN C Johnson	DATE/TIME JUN 19 2012 1040	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHIII Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-220	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KF Concrete Sample 9	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
ICE CHEST NO. <b>(N/A)</b>	FIELD LOGBOOK NO. <b>HNF-N-507.25</b>	ACTUAL SAMPLE DEPTH <b>SURFACE</b>	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GK1 applies to this SAF. <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p>(2) <del>Gross Alpha (Gross alpha); Gross Beta (Gross beta);</del></p> <p style="text-align: center;"><i>JH</i> <i>3/26/12</i></p>						

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A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-223	PAGE 1 OF 2	
<b>COLLECTOR</b> Frank Hill		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, SJ		<b>PRICE CODE</b> 9C	<b>DATA TURNAROUND</b> 15 Days / 15 Days
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 10		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>AIR QUALITY</b> <input type="checkbox"/>	
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N-507.25		<b>ACTUAL SAMPLE DEPTH</b> SURFACE		<b>COA</b> 302548E510		<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE <b>ORIGINAL</b>
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A			<b>BILL OF LADING/AIR BILL NO.</b> N/A			
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=OI S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>		Cool-4C	Cool-4C	Cool-4C	None	
		<b>HOLDING TIME</b>		6 Months	70 Days	78 Days/48 Hours	6 Months	
		<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P	
		<b>NO. OF CONTAINER(S)</b>		1	1	1	1	
		<b>VOLUME</b>		120mL	60mL	60mL	120mL	
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>					
B2L1D7	2 OTHER SOLID	JUN 19 2012	0850	✓	✓	✓		

PH 3/20/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hill	JUN 19 2012 1040	Conner	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	TITLE		DATE/TIME	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A 6003-618 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-223	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 10	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. INF-N-507.25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548F510	METHOD OF SHIPMENT GOVERNMENT VEHICLE	<b>ORIGINAL</b>	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p>(2) <del>Gross Alpha {Gross alpha}; Gross Beta {Gross beta};</del></p> <p style="text-align: right;"><i>2/19/2012</i></p>						

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A-6003-618 (RFV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-226	PAGE 1 OF 2																									
COLLECTOR Frank Hall		COMPANY CONTACT IRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days																									
SAMPLING LOCATION 183.2KE Concrete Sample 11		PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		ATR QUALITY <input type="checkbox"/>	ORIGINAL																									
ICE CHEST NO. (N/A)		FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE		COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE																										
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A																												
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool-4C	Cool-4C	Cool-4C	None	<div style="border: 1px solid black; padding: 5px;"> <table border="1"> <tr> <td>HOLDING TIME</td> <td>6 Months</td> <td>30 Days</td> <td>28 Days/48 Hours</td> <td>6 Months</td> </tr> <tr> <td>TYPE OF CONTAINER</td> <td>G/P</td> <td>G/P</td> <td>G/P</td> <td>G/P</td> </tr> <tr> <td>NO. OF CONTAINER(S)</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>VOLUME</td> <td>120mL</td> <td>60mL</td> <td>60mL</td> <td>120mL</td> </tr> <tr> <td>SAMPLE ANALYSIS</td> <td>SEE ITEM (1) IN SPECIAL INSTRUCTIONS</td> <td>Chromium Hex - 7196;</td> <td>IC Anions - 300.0 (Chloride, Sulfate);</td> <td>SEE ITEM (4) IN SPECIAL INSTRUCTIONS</td> </tr> </table> </div>	HOLDING TIME	6 Months	30 Days	28 Days/48 Hours	6 Months	TYPE OF CONTAINER	G/P	G/P	G/P	G/P	NO. OF CONTAINER(S)	1	1	1	1	VOLUME	120mL	60mL	60mL	120mL	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS
HOLDING TIME		6 Months	30 Days	28 Days/48 Hours	6 Months																											
TYPE OF CONTAINER	G/P	G/P	G/P	G/P																												
NO. OF CONTAINER(S)	1	1	1	1																												
VOLUME	120mL	60mL	60mL	120mL																												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS																												
SPECIAL HANDLING AND/OR STORAGE																																
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME																													
BZL1F0 3	OTHER SOLID	JUN 19 2012	0921	✓	✓	✓																										

9# 6/11/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM Frank Hall	DATE/TIME JUN 19 2012 1040	RECEIVED BY/STORED IN C Johnson	DATE/TIME JUN 19 2012 1040	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-226	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 11	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548E510		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p><del>(2) Gross Alpha - (Gross alpha); Gross Beta - (Gross beta);</del> <i>94 6/14/12</i></p>						

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A 6003-618 (REV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-229	PAGE 1 OF 2		
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, NJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, NJ		<b>PRICE CODE</b> 9C		
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 12		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>DATA TURNAROUND</b> 15 Days / 15 Days		
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N-		<b>ACTUAL SAMPLE DEPTH</b> Surface	<b>COA</b> 302548ES10		<b>AIR QUALITY</b> <input type="checkbox"/>		
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A			<b>BILL OF LADING/AIR BILL NO.</b> N/A				
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>				Cool-4C	Cool-4C	Cool-4C	None
		<b>HOLDING TIME</b>				6 Months	30 Days	78 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>				G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>				1	1	1	1
		<b>VOLUME</b>				120mL	60mL	60mL	120mL
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 2196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS		
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>						
B2L1F3	4 OTHER SOLID	JUN 19 2012	0933						

9A 6/14/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	C. Johns	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	TITLE		DATE/TIME	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST			F11-146-229	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 12	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581.0** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.00**                  In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};  <del>(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};</del></p> <p style="text-align: right;"><i>qh 6/14/12</i></p>						

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A-6003-618 (RPV 2)

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-214	PAGE 1 OF 2
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 7		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete				<b>SAF NO.</b> F11-146	
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N- 50725		<b>ACTUAL SAMPLE DEPTH</b> SURFACE		<b>COA</b> 302548E510	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A				<b>BILL OF LADING/AIR BILL NO.</b> N/A	
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>		Cool-4C	Cool-4C	Cool-4C	None
		<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>		1	1	1	1
		<b>VOLUME</b>		120mL	60mL	60mL	120mL
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	IC Anions - 300 0 (Chloride, Sulfate)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
B2H1V8	5 OTHER SOLID	JUN 19 2012	0810	✓	✓	✓	OH 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	C. Johnson	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	TITLE		DATE/TIME	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A-6003-618 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST			F11-146-214	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KF Concrete Sample 7	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507.25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548E510		METHOD OF SHIPMENT GOVERNMENT VEHICLE	<b>ORIGINAL</b>
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p><del>(2) Gross Alpha (Gross alpha), Gross Beta (Gross beta);</del> 94 6/14/12</p>						

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A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-217	PAGE 1 OF 2	
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, SJ		<b>PRICE CODE</b> 9C	<b>DATA TURNAROUND</b> 15 Days / 15 Days
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 8		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>AIR QUALITY</b> <input type="checkbox"/>	
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N-50725	<b>ACTUAL SAMPLE DEPTH</b> SURFACE		<b>COA</b> 302548ES10		<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE	<b>ORIGINAL</b>
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>BILL OF LADING/AIR BILL NO.</b> N/A				
<b>MATRIX*</b> A=Air DL=Drum LI=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>	Cool--4C	Cool--4C	Cool--4C	None		
		<b>HOLDING TIME</b>	6 Months	30 Days	28 Days/48 Hours	6 Months		
		<b>TYPE OF CONTAINER</b>	G/P	G/P	G/P	G/P		
		<b>NO. OF CONTAINER(S)</b>	1	1	1	1		
		<b>VOLUME</b>	120mL	60mL	60mL	120mL		
<b>SPECIAL HANDLING AND/OR STORAGE</b>	<b>SAMPLE ANALYSIS</b>	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196:	IC Anions - 300.0 (Chloride, Sulfate):	SEE ITEM (2) IN SPECIAL INSTRUCTIONS			
<b>SAMPLE NO.</b> B2H1W1	<b>MATRIX*</b> 6 OTHER SOLID	<b>SAMPLE DATE</b> JUN 19 2012	<b>SAMPLE TIME</b> 0836					QA 3/12/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
<b>RELINQUISHED BY/ REMOVED FROM</b> Frank Hall	<b>DATE/TIME</b> JUN 19 2012 1040	<b>RECEIVED BY/ STORED IN</b> C Johnson	<b>DATE/TIME</b> JUN 19 2012 1040	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
<b>RELINQUISHED BY/ REMOVED FROM</b>	<b>DATE/TIME</b>	<b>RECEIVED BY/ STORED IN</b>	<b>DATE/TIME</b>		
<b>RELINQUISHED BY/ REMOVED FROM</b>	<b>DATE/TIME</b>	<b>RECEIVED BY/ STORED IN</b>	<b>DATE/TIME</b>		
<b>RELINQUISHED BY/ REMOVED FROM</b>	<b>DATE/TIME</b>	<b>RECEIVED BY/ STORED IN</b>	<b>DATE/TIME</b>		
<b>RELINQUISHED BY/ REMOVED FROM</b>	<b>DATE/TIME</b>	<b>RECEIVED BY/ STORED IN</b>	<b>DATE/TIME</b>		
<b>RELINQUISHED BY/ REMOVED FROM</b>	<b>DATE/TIME</b>	<b>RECEIVED BY/ STORED IN</b>	<b>DATE/TIME</b>		
<b>RELINQUISHED BY/ REMOVED FROM</b>	<b>DATE/TIME</b>	<b>RECEIVED BY/ STORED IN</b>	<b>DATE/TIME</b>		
<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b>	<b>TITLE</b>		<b>DATE/TIME</b>	
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>		<b>DATE/TIME</b>	

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Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-217	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 8	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548E510	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581.□** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□** In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p>(2) <del>Gross Alpha (Gross alpha); Gross Beta (Gross beta);</del></p> <p style="text-align: center;"><i>GH</i> <i>3/26/12</i></p>						

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A-6003-618 (REV 2)



THE LEADER IN ENVIRONMENTAL TESTING

## CASE NARRATIVE

CH2MHill Plateau Remediation Company  
 P.O. Box 1600  
 MS B3-60  
 Richland, Washington 99352  
 July 06, 2012  
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

---

SDG	: SL1276
Number of Samples	: sample
Sample Matrix	: Solid
Data Deliverable	: Summary
Date SDG Closed	: June 22, 2012

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## II. Introduction

On June 22, 2012, a solid sample was received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-146

## III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

## IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## **CH2M Hill Plateau Remediation Company**

July 06, 2012

SDG: SL1276

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

### ICPMS Metals

**Batch: 2177017**

The MS recovery for Manganese is outside the established QC limits. The RPD value is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery. This analyte has been qualified accordingly with an “N” flag in the associated sample.

**Affected Samples:**

F2F220422 (1); B2L1H0

### Mercury

**Batch: 2178013**

The MS and MSD recoveries for Mercury are outside the established QC limits. The RPD value is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery. This analyte has been qualified accordingly with an “N” flag in the associated sample.

**Affected Samples:**

F2F220422 (1); B2L1H0

### Ion Chromatography

**Batch: 2177133**

The associated sample was analyzed at dilution for Sulfate, due to high concentrations of the target analyte, for Sulfate in batch 2177133. The reporting limit has been adjusted only for the target reported from the dilution. The analyte has been qualified accordingly with a “D” flag in the associated sample.

**Affected Samples:**

F2F220422 (1); B2L1H0

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## *CH2M Hill Plateau Remediation Company*

July 06, 2012

SDG: SL1276

TestAmerica Laboratories, Inc.

**Batch: 2177132**

The Anion Matrix Spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recovery for Chloride is attributed to matrix interference. The analyte has been qualified with an "N" flag in the associated sample.

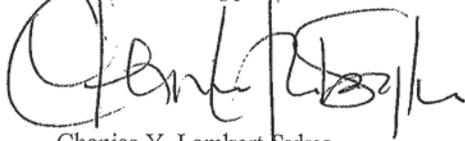
**Affected Samples:**

F2F220422 (1): B2L1H0

There were no observations or nonconformances for the following methods: ICPMS - Antimony

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Chenise Y. Lambert-Sykes  
St. Louis Project Manager

SL1276 CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-236	PAGE 1 OF 1
COLLECTOR Frank Hall <i>Cul 050</i>	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 14	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. <i>LWS-189-02</i>	FIELD LOGBOOK NO. <i>HNF-N-507-25</i>	ACTUAL SAMPLE DEPTH <i>SURFACE</i>	COA 302548ES10	METHOD OF SHIPMENT FEDERAL EXPRESS		<b>ORIGINAL</b>
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING/AIR BILL NO. <i>7937 0673 1907</i>				

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION		Cool~4C	Cool~4C
		HOLDING TIME		6 Months	28 Days/48 Hours
		TYPE OF CONTAINER		G/P	G/P
		NO. OF CONTAINER(S)		1	1
		VOLUME		120mL	60mL
		SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B2L1H2		SAMPLE ANALYSIS	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2L1H0	OTHER SOLID	JUN 19 2012	0850	✓	✓

*43 185*

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM Frank Hall	DATE/TIME JUN 19 2012	RECEIVED BY/STORED IN <i>SSU#1</i>	DATE/TIME JUN 19 2012	<b>SPECIAL INSTRUCTIONS</b> ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies. (1) ICP Metals - 6020 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP Metals - 6020 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; Mercury - 7471 - (CV);	
RELINQUISHED BY/REMOVED FROM <i>SSU#1</i>	DATE/TIME 6-21-12 0730	RECEIVED BY/STORED IN <i>DW BREWSTER/DW B...</i>	DATE/TIME 6/21/12 0830		
RELINQUISHED BY/REMOVED FROM <i>DW BREWSTER/DW B...</i>	DATE/TIME 6-21-12 1400	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM <i>FEDEX</i>	DATE/TIME	RECEIVED BY/STORED IN <i>THE HOLLAS</i>	DATE/TIME 6/22/12 0930		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

### Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

### Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

### Inorganic Comments

**Anions** – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2  
**Narrative**  
WSCF120413

**Hexavalent Chromium** – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

**ICP-MS Metals** – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese and Selenium – Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were “N” flagged.
- Vanadium and Chromium – Detected in the Blank and evaluated. Affected sample results in this batch were “C” Flagged.
- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-196	PAGE 1 OF 2		
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ			
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 1		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete				<b>SAF NO.</b> F11-146			
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N507-34		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>COA</b> 302548ES10			
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A				<b>BILL OF LADING/AIR BILL NO.</b> N/A			
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radicactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>				Cool-4C			
		<b>HOLDING TIME</b>				6 Months		30 Days	
		<b>TYPE OF CONTAINER</b>				G/P		G/P	
		<b>NO. OF CONTAINER(S)</b>				1		1	
		<b>VOLUME</b>				120mL		60mL	
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSTS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		SEE ITEM (2) IN SPECIAL INSTRUCTIONS			
120413				Chromium Hex 7106;		IC Anions - 300.0 (Chloride, Sulfate);			
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>						
B2H111	OTHER SOLID	MAR 26 2012	1115	✓	✓	✓	QA 3/26/12		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks	MAR 26 2012	2005 Beazal Flacey	MAR 26 2012 1240		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b>	<b>TITLE</b>		<b>DATE/TIME</b>	
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>		<b>DATE/TIME</b>	

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-196	PAGE 2 OF 2
CONTACTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
FIELD LOCATION KE Concrete Sample 1	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		METHOD OF SHIPMENT GOVERNMENT VEHICLE
TEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548E510	ORIGINAL		
TESTED TO As Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

**ADDITIONAL INSTRUCTIONS**  
 The CACN for all analytical work at WSCF laboratory is 402581.□□\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□\*\*  
 In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 AF for all analyses except Special Studies.  
 ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
 Barium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};  
~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~ *# 3/26/12*

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-199	PAGE 1 OF 2
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 2		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete				<b>PRICE CODE</b> 9C	
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N-507-24		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>SAF NO.</b> F11-146	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>BILL OF LADING/AIR BILL NO.</b> N/A			
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>		<b>DATA TURNAROUND</b> 15 Days / 15 Days	
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		Cool-4C	Cool-4C	Cool-4C	None
				6 Months	30 Days	28 Days/48 Hours	6 Months
				G/P	G/P	G/P	G/P
				1	1	1	1
				120mL	60mL	60mL	120mL
				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Max - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
B2H114	2 OTHER SOLID	MAR 26 2012	1118	✓	✓	✓	94 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks CHPRC	MAR 26 2012	[Signature]	MAR 26 2012		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	TITLE		DATE/TIME	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

PRINTED ON 3/13/2012

A-6003-618 (RFV 2)

## Sample Receipt

## Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-199	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 83.2KE Concrete Sample 2	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete	SAF NO. F11-146	COA 302548ES10	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	METHOD OF SHIPMENT GOVERNMENT VEHICLE				
SHIPMENT TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

## SPECIAL INSTRUCTIONS

\* The CACN for all analytical work at WSCF laboratory is 402581. □\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□\*\*  
 In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 the SAF for all analyses except Special Studies.

1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
 Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};  
 2) ~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~ *OK 3/26/12*

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A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-232	PAGE 1 OF 2	
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ		
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 13		<b>PROJECT DESIGNATION</b> 183 KF/KW Water Treatment Plant - Concrete				<b>SAF NO.</b> F11-146		
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N-507-24		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>COA</b> 302548ES10		
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>BILL OF LADING/AIR BILL NO.</b> N/A				
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>		Cool=4C	Cool=4C	Cool=4C	None
			<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 HOURS	6 Months
			<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
			<b>NO. OF CONTAINER(S)</b>		1	1	1	1
			<b>VOLUME</b>		120ml	60ml	60ml	120ml
			<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>			
				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196;	IC Anions - 306.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>					
B2L1F6 3	OTHER SOLID	MAR 26 2012	1135	✓	✓	✓		

*Out 3/20/12*

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks	MAR 26 2012 1240	<i>[Signature]</i>	MAR 26 2012 1240		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b>	<b>TITLE</b>		<b>DATE/TIME</b>	
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>		<b>DATE/TIME</b>	

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A-0003-G18 (REV 2)

## Sample Receipt

## Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-232	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION B1.2KE Concrete Sample 13	PROJECT DESIGNATION 1B3 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
FIELD CHEST NO.	FIELD LOGBOOK NO. MNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	<b>ORIGINAL</b>	
SHIPMENT TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

## SPECIAL INSTRUCTIONS

\* The CACN for all analytical work at WSCF laboratory is 402581. □\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□\*\*  
In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
the SAF for all analyses except Special Studies.

1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
Cerium, Cesium, Iridium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};

2) ~~Gross Alpha {Gross alpha}; Gross Beta {Gross beta};~~

JK  
3/26/12

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A-6003-618 (RFV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-202	PAGE 1 OF 2
COLLECTOR DJ Sparks CHPRC		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 3		PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE <b>ORIGINAL</b>
ICE CHEST NO.		FIELD LOGBOOK NO. rNF -N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10			
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			
MATRIX* A=Air DL=Drum L=Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool--4C	Cool--4C	Cool--4C	None	
		HOLDING TIME	6 Months	30 Days	28 Days/48 Hours	6 Months	
		TYPE OF CONTAINER	G/P	G/P	G/P	G/P	
		NO. OF CONTAINER(S)	1	1	1	1	
		VOLUME	120mL	60mL	60mL	120mL	
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS					
		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - /196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2H117 4	OTHER SOLID	MAR 26 2012	1135	✓	✓	✓	

*198  
3/26/12*

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks	MAR 26 2012	<i>[Signature]</i>	MAR 26 2012 1240		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A-6003-618 (REV 2)

## Sample Receipt

## Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-202	PAGE 2 OF 2
LECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
PLING LOCATION 2KE Concrete Sample 3	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	<b>ORIGINAL</b>	
TEST NO.	FIELD LOGBOOK NO. HNF-N-507-24-	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
IPED TO ite Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			

**ADDITIONAL INSTRUCTIONS**

The CACN for all analytical work at WSCF laboratory is 402581.00\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.00\*\*  
In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume "gram" weight as listed on the Field Sampling Requirements portion of  
SAF for all analyses except Special Studies.

ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
Bismuth, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};  
~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~

QA  
3/26/12

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Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-239	PAGE 1 OF 2
COLLECTOR DAN SPARKS /CHPRC		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 15		PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
ICE CHEST NO.		FIELD LOGBOOK NO. HNF-N-507 24	ACTUAL SAMPLE DEPTH N/A	COA 302548ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool--4C	Cool--4C	Cool--4C	None	
		HOLDING TIME	6 Months	30 Days	28 Days/48 Hours	6 Months	
		TYPE OF CONTAINER	G/P	G/P	G/P	G/P	
		NO. OF CONTAINER(S)	1	1	1	1	
		VOLUME	120mL	60mL	60mL	120mL	
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium hex + 7196;	IC Anions 300.0 (Chloride, Sulfate);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2L1H3 5	OTHER SOLID	3/26/12	1050	✓	✓	✓	9th 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
D. Sparks/CHPRC	3/26/12	Abraham H. Hays	3/26/12 1240		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	
PRINTED ON 3/13/2012				A-6003-618 (REV 2)	

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-239	PAGE 2 OF 2
COLLECTOR <i>DAN SPARKS/CHPRC</i>	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION B3.2KE Concrete Sample 15	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		ORIGINAL
FIELD LOGBOOK NO. <i>HNF-N-507 24</i>	ACTUAL SAMPLE DEPTH <i>N/A</i>		COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A					
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>The CACN for all analytical work at WSCF laboratory is 402581.□** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□**          In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of          the SAF for all analyses except Special Studies.</p> <p>ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,          Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};  <del>Gross Alpha {Gross alpha}; Gross Beta {Gross beta};</del></p> <p style="text-align: center;"><i>QA 3/24/12</i></p>						

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A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST				F11-146-205	PAGE 1 OF 2
COLLECTOR DJ Sparks CHPHC		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373 5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 4		PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO.		FIELD LOGBOOK NO. HNF -N-507-24	ACTUAL SAMPLE DEPTH Surface		COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			
MATRIX* A=Air B1=Drum L=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		PRESERVATION	Cool-4C	Cool-4C	Cool-4C	None
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		HOLDING TIME	6 Months	30 Days	28 Days/48 Hours
				TYPE OF CONTAINER	G/P	G/P	G/P
				NO. OF CONTAINER(S)	1	1	1
				VOLUME	120mL	60mL	60mL
					SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium hex - 7196;	1C Anions - 300.0 (Chloride, Sulfate);
					SEE ITEM (2) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2H1T9	OTHER SOLID	MAR 26 2012	1140				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/ REMOVED FROM DJ Sparks	DATE/TIME MAR 26 2012	RECEIVED BY/ STORED IN Bureau	DATE/TIME MAR 26 2012	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

PRINTED ON 3/13/2012

A-6003-618 (REV 2)

## Sample Receipt

## Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-205	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 33.2KE Concrete Sample 4	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
FIELD CHEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPMENT TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

## SPECIAL INSTRUCTIONS

The CACN for all analytical work at WSCF laboratory is 402581.0000. The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.0000. In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.

ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};

~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~

JH  
3/26/12

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A-6003-618 (REV 2)

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-211	PAGE 1 OF 2
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, NJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, NJ	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 6		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete				<b>PRICE CODE</b> 9C	
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF - N-507- 24		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>SAF NO.</b> F11-146	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A				<b>BILL OF LADING/AIR BILL NO.</b> N/A	
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)					
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>PRESERVATION</b>		Cool-4C	Cool-4C	Cool-4C	N/A
		<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>		1	1	1	1
		<b>VOLUME</b>		120mL	60mL	60mL	120mL
		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Arions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
B2H1V5	OTHER SOLID	MAR 26 2012	1200	✓	✓	✓	9H 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks	MAR 26 2012 1200	[Signature]	MAR 26 2012 1240		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

PRINTED ON 3/13/2012

A-6003-G18 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-211	PAGE 2 OF 2
LECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
PLING LOCATION 2KE Concrete Sample 6	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
CHEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
MPED TO Site Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			

SPECIAL INSTRUCTIONS

The CACN for all analytical work at WSCF laboratory is 402581. \*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.  \*\*  
 In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 SAF for all analyses except Special Studies.  
 ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
 Bismuth, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};  
~~Gross Alpha {Gross alpha}; Gross Beta {Gross beta};~~

*JA 3/26/12*

ISSUED ON 3/13/2012

A-6003-618 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-208	PAGE 1 OF 2	
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days		
SAMPLING LOCATION 183.2KE Concrete Sample 5	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete	FIELD LOGBOOK NO. HNF -N-507-24	ACTUAL SAMPLE DEPTH Surface	SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL		
ICE CHEST NO.	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A						
SHIPPED TO Waste Sampling & Characterization								
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool-4C	Cool-4C	Cool-4C	None		
		HOLDING TIME	6 Months	30 Days	28 Days/48 Hours	6 Months		
		TYPE OF CONTAINER	G/P	G/P	G/P	G/P		
		NO. OF CONTAINER(S)	1	1	1	1		
		VOLUME	120mL	60mL	60mL	120mL		
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Max - 7136;	3C Anions 300 D (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2H1V2	OTHER SOLID	MAR 26 2012	1155	✓	✓	✓		

9 1/2 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM DJ Sparks CHPRC	DATE/TIME MAR 26 2012	RECEIVED BY/STORED IN <i>[Signature]</i>	DATE/TIME MAR 26 2012 1240	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

PRINTED ON 3/13/2012

A-6003-618 (REV 2)

Chain of Custody

CH2MHIII Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-208	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 5	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

SPECIAL INSTRUCTIONS

\* The CACN for all analytical work at WSCF laboratory is 402581.□\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□\*\*  
 n the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 he SAF for all analyses except Special Studies.

- 1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Iridium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};
- 2) ~~Gross Alpha {Gross alpha}; Gross Beta {Gross beta};~~

*9/4  
3/26/12*

## **Appendix 5**

### Data Validation Supporting Documentation

**Data Validation for Chemical Analyses**

Published Date: 08/16/10

Effective Date: 08/16/10

VALIDATION LEVEL:	A	B	<b>C</b>	D	E
PROJECT:	100-K		DATA PACKAGE: VSR12-017		
VALIDATOR:	Ken Salaz	LAB: WSCF & TASL		DATE: 7/11/12	
			SDG: WSCF120798, SL1276, WSCF120413		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide	EPA 200.8 X	
SAMPLES/MATRIX Other Solid Samples					
SDG WSCF120798: B2L1D4, B2L1D7, B2L1F0, B2L1F3, B2H1V8, B2H1W1					
SDG SL1276: B2L1H0 (split of B2L1D7)					
SDG WSCF120413: B2H111, B2H114, B2L1F6 (dup of B2H117), B2H117, B2L1H3 (EB), B2H1T9, B2H1V5, B2H1V2					

**1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE**

Technical verification documentation present?..... Yes **No** N/A

Comments: None

## Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

### 2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .....	Yes	No	N/A
Initial calibrations acceptable? .....	Yes	No	N/A
ICP interference checks acceptable? .....	Yes	No	N/A
ICV and CCV checks performed on all instruments? .....	Yes	No	N/A
ICV and CCV checks acceptable? .....	Yes	No	N/A
Standards traceable? .....	Yes	No	N/A
Standards expired? .....	Yes	No	N/A
Calculation check acceptable? .....	Yes	No	N/A

Comments:

### 3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .....	Yes	No	N/A
ICB and CCB results acceptable? (Levels D, E) .....	Yes	No	N/A
Laboratory blanks analyzed? .....	Yes	No	N/A
Laboratory blank results acceptable? .....	Yes	No	N/A
Field blanks analyzed? (Levels C, D, E) .....	Yes	No	N/A
Field blank results acceptable? (Levels C, D, E) .....	Yes	No	N/A
Transcription/calculation errors? (Levels D, E) .....	Yes	No	N/A

Comments:

SDG WSCF120798: MB Sample 77239: Cu 0.164 ug/L; V 0.14 ug/L

SDG WSCF120413: MB Sample 72296: Cr 0.187 ug/L; V 0.48 ug/L

EB Sample B2L1H3: Mn 0.373 mg/kg; Cr 0.857 mg/kg; Co 0.152 (&gt;PQL) mg/kg; V 0.795 mg/kg; Pb 0.0932 mg/kg; Mo 0.0683 mg/kg; Sr 0.147 mg/kg; U 0.0888 mg/kg

## Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

### 4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? .....	<input checked="" type="radio"/> Yes	No	N/A
MS/MSD results acceptable? .....	Yes	<input checked="" type="radio"/> No	N/A
MS/MSD standards NIST traceable? (Levels D, E) .....	Yes	No	<input checked="" type="radio"/> N/A
MS/MSD standards expired? (Levels D, E) .....	Yes	No	<input checked="" type="radio"/> N/A
LCS/BSS samples analyzed? .....	<input checked="" type="radio"/> Yes	No	N/A
LCS/BSS results acceptable? .....	<input checked="" type="radio"/> Yes	No	N/A
Standards traceable? (Levels D, E) .....	Yes	No	<input checked="" type="radio"/> N/A
Standards expired? (Levels D, E) .....	Yes	No	<input checked="" type="radio"/> N/A
Transcription/calculation errors? (Levels D, E) .....	Yes	No	<input checked="" type="radio"/> N/A
Performance audit sample(s) analyzed? .....	Yes	No	<input checked="" type="radio"/> N/A
Performance audit sample results acceptable? .....	Yes	No	<input checked="" type="radio"/> N/A

#### Comments:

SDG WSCF120413: MS/MSD Samples 72298/9: Mn MS/MSD %R=68.4/68.50%; Se MS %R=53.1, RPD=33.9

## Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

### 5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable?.....	Yes	No	N/A
Duplicate results acceptable? .....	Yes	No	N/A
MS/MSD standards NIST traceable? (Levels D, E).....	Yes	No	N/A
MS/MSD standards expired? (Levels D, E) .....	Yes	No	N/A
Field duplicate RPD values acceptable? .....	Yes	No	N/A
Field split RPD values acceptable? .....	Yes	No	N/A
Transcription/calculation errors? (Levels D, E).....	Yes	No	N/A

Comments: \_

Field Dup Sample B2L1F6 RPDs: Mn=36, Ni=46, Ba=38, V=36, Zn=42, Pb=43, Sr=49

## Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

### 6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? .....	Yes	No	N/A
ICP serial dilution %D values acceptable? .....	Yes	No	N/A
ICP post digestion spike required? .....	Yes	No	N/A
ICP post digestion spike values acceptable?.....	Yes	No	N/A
Standards traceable? .....	Yes	No	N/A
Standards expired? .....	Yes	No	N/A
Transcription/calculation errors? .....	Yes	No	N/A

Comments:

### 7. HOLDING TIMES (all levels)

Samples properly preserved? .....	Yes	No	N/A
Sample holding times acceptable? .....	Yes	No	N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

8. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses?..... Yes No N/A  
Results supported in the raw data? (Levels D, E) ..... Yes No  N/A  
Samples properly prepared? (Levels D, E) ..... Yes No  N/A  
Detection limits meet RDL?..... Yes No N/A  
Transcription/calculation errors? (Levels D, E) ..... Yes No  N/A

Comments: \_ None

**Data Validation for Chemical Analyses**

**Published Date: 08/16/10**

**Effective Date: 08/16/10**

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Comments (attach additional sheets as necessary):

## **Appendix 6**

Additional Documentation Requested By Client

## Quality Control Report

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF120798

**Analytical Batch** 203697 (QC Batch: 203662) **Test** ICP-2008 MS All possible metal  
**Associated Samples** 120798001, 120798002, 120798003, 120798004, 120798005, 120798006

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #77239</b>							
Manganese	7439-96-5	<0.050		ug/L				U	06/26/12
Nickel	7440-02-0	<0.050		ug/L				U	06/26/12
Silver	7440-22-4	<0.025		ug/L				U	06/26/12
Antimony	7440-36-0	<0.15		ug/L				U	06/26/12
Barium	7440-39-3	<0.10		ug/L				U	06/26/12
Beryllium	7440-41-7	<0.050		ug/L				U	06/26/12
Cadmium	7440-43-9	<0.025		ug/L				U	06/26/12
Chromium	7440-47-3	<0.050		ug/L				U	06/26/12
Cobalt	7440-48-4	<0.025		ug/L				U	06/26/12
Copper	7440-50-8	0.164		ug/L				B	06/26/12
Vanadium	7440-62-2	0.140		ug/L				B	06/26/12
Zinc	7440-66-6	<0.50		ug/L				U	06/26/12
Lead	7439-92-1	<0.025		ug/L				U	06/26/12
Mercury	7439-97-6	<0.025		ug/L				U	06/26/12
Molybdenum	7439-98-7	<0.025		ug/L				U	06/26/12
Strontium	7440-24-6	<0.050		ug/L				U	06/26/12
Tin	7440-31-5	<0.025		ug/L				U	06/26/12
Uranium	7440-61-1	<0.025		ug/L				U	06/26/12
Arsenic	7440-38-2	<0.10		ug/L				U	06/26/12

## Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group #

WSCF120798

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Selenium <b>LCS</b>	7782-49-2		<0.50	ug/L					U	06/26/12
<b>QC Sample #77240</b>										
Manganese	7439-96-5		278	mg/kg	97.4	75 - 121				06/26/12
Nickel	7440-02-0		59.9	mg/kg	101.4	74 - 122				06/26/12
Silver	7440-22-4		37.5	mg/kg	109	83 - 127				06/26/12
Antimony	7440-36-0		132	mg/kg	107.9	62 - 205				06/26/12
Barium	7440-39-3		172	mg/kg	101.9	78 - 118				06/26/12
Beryllium	7440-41-7		65.8	mg/kg	105.4	77 - 120				06/26/12
Cadmium	7440-43-9		63.4	mg/kg	102.6	76 - 129				06/26/12
Chromium	7440-47-3		71.4	mg/kg	100.1	68 - 119				06/26/12
Cobalt	7440-48-4		108	mg/kg	105.1	77 - 122				06/26/12
Copper	7440-50-8		79.7	mg/kg	98.1	67 - 120				06/26/12
Vanadium	7440-62-2		61.4	mg/kg	103.8	67 - 122				06/26/12
Zinc	7440-66-6		141	mg/kg	99.7	73 - 131				06/26/12
Lead	7439-92-1		95.6	mg/kg	103.5	79 - 124				06/26/12
Mercury	7439-97-6		4.27	mg/kg	113.2	69 - 124				06/26/12
Molybdenum	7439-98-7		47.3	mg/kg	111.1	80 - 125				06/26/12
Strontium	7440-24-6		73.5	mg/kg	101.5	78 - 119				06/26/12
Tin	7440-31-5		115	mg/kg	107.5	84 - 130				06/26/12
Uranium	7440-61-1		426	mg/kg	105.9	86 - 113				06/26/12
Arsenic	7440-38-2		97.6	mg/kg	105.4	79 - 125				06/26/12
Selenium <b>MS</b>	7782-49-2		83.9	mg/kg	93.7	82 - 133				06/26/12
<b>QC Sample #77241</b>										
<b>Original 120787001</b>										

## Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Manganese	7439-96-5		112	mg/kg	104.6	70 - 130				06/26/12
Nickel	7440-02-0		110	mg/kg	103.2	70 - 130				06/26/12
Silver	7440-22-4		108	mg/kg	100.8	70 - 130				06/26/12
Antimony	7440-36-0		107	mg/kg	100.7	70 - 130				06/26/12
Barium	7440-39-3		111	mg/kg	103.5	70 - 130				06/26/12
Beryllium	7440-41-7		106	mg/kg	99.2	70 - 130				06/26/12
Cadmium	7440-43-9		108	mg/kg	101	70 - 130				06/26/12
Chromium	7440-47-3		110	mg/kg	103.5	70 - 130				06/26/12
Cobalt	7440-48-4		111	mg/kg	104.2	70 - 130				06/26/12
Copper	7440-50-8		109	mg/kg	101.7	70 - 130				06/26/12
Vanadium	7440-62-2		113	mg/kg	105.5	70 - 130				06/26/12
Zinc	7440-66-6		108	mg/kg	101.6	70 - 130				06/26/12
Lead	7439-92-1		107	mg/kg	100	70 - 130				06/26/12
Mercury	7439-97-6		2.43	mg/kg	114	70 - 130				06/26/12
Molybdenum	7439-98-7		111	mg/kg	104	70 - 130				06/26/12
Strontium	7440-24-6		109	mg/kg	102.2	70 - 130				06/26/12
Tin	7440-31-5		110	mg/kg	102.7	70 - 130				06/26/12
Uranium	7440-61-1		111	mg/kg	104.1	70 - 130				06/26/12
Arsenic	7440-38-2		107	mg/kg	99.8	70 - 130				06/26/12
Selenium	7782-49-2		99.4	mg/kg	93.2	70 - 130				06/26/12
<b>MSD</b>										
			<b>QC Sample #77242</b>							
			<b>Original</b>	<b>120787001</b>				<b>Paired</b>	<b>77241</b>	
Manganese	7439-96-5		98.5	mg/kg	101.7	70 - 130	11.60	30		06/26/12
Nickel	7440-02-0		98.8	mg/kg	102.1	70 - 130	10.60	30		06/26/12
Silver	7440-22-4		101	mg/kg	104.4	70 - 130	6.70	30		06/26/12

## Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group #

WSCF120798

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Antimony	7440-36-0		99.8	mg/kg	103.1	70 - 130	7.00	30		06/26/12
Barium	7440-39-3		102	mg/kg	105	70 - 130	8.30	30		06/26/12
Beryllium	7440-41-7		101	mg/kg	104.6	70 - 130	4.80	30		06/26/12
Cadmium	7440-43-9		99.6	mg/kg	102.9	70 - 130	8.10	30		06/26/12
Chromium	7440-47-3		98.7	mg/kg	102	70 - 130	11.60	30		06/26/12
Cobalt	7440-48-4		99.7	mg/kg	103	70 - 130	10.60	30		06/26/12
Copper	7440-50-8		97.6	mg/kg	100.8	70 - 130	10.60	30		06/26/12
Vanadium	7440-62-2		99.5	mg/kg	102.8	70 - 130	12.10	30		06/26/12
Zinc	7440-66-6		96.0	mg/kg	99.2	70 - 130	11.90	30		06/26/12
Lead	7439-92-1		98.2	mg/kg	101.4	70 - 130	8.10	30		06/26/12
Mercury	7439-97-6		2.24	mg/kg	115.5	70 - 130	8.10	30		06/26/12
Molybdenum	7439-98-7		103	mg/kg	106.4	70 - 130	7.50	30		06/26/12
Strontium	7440-24-6		102	mg/kg	105	70 - 130	7.50	30		06/26/12
Tin	7440-31-5		101	mg/kg	104.3	70 - 130	8.50	30		06/26/12
Uranium	7440-61-1		102	mg/kg	105.4	70 - 130	8.50	30		06/26/12
Arsenic	7440-38-2		98.1	mg/kg	101.4	70 - 130	8.30	30		06/26/12
Selenium	7782-49-2		91.8	mg/kg	94.8	70 - 130	7.90	30		06/26/12

## METHOD BLANK REPORT

## TOTAL Metals

Client Lot #....: SL1276

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
<b>MB Lot-Sample #:</b> F2F250000-017 <b>Prep Batch #....:</b> 2177017						
Arsenic	ND	1.0	mg/kg	SW846 6020	06/25/12	MT93V1AA
		Dilution Factor: 1				
Barium	ND	2.0	mg/kg	SW846 6020	06/25/12	MT93V1AC
		Dilution Factor: 1				
Beryllium	ND	0.10	mg/kg	SW846 6020	06/25/12	MT93V1AD
		Dilution Factor: 1				
Bismuth	ND	2.0	mg/kg	SW846 6020	06/25/12	MT93V1AE
		Dilution Factor: 1				
Boron	ND	10.0	mg/kg	SW846 6020	06/25/12	MT93V1AF
		Dilution Factor: 1				
Cadmium	ND	0.050	mg/kg	SW846 6020	06/25/12	MT93V1AG
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6020	06/25/12	MT93V1AX
		Dilution Factor: 1				
Cobalt	ND	0.20	mg/kg	SW846 6020	06/25/12	MT93V1AH
		Dilution Factor: 1				
Copper	ND	1.0	mg/kg	SW846 6020	06/25/12	MT93V1AJ
		Dilution Factor: 1				
Lead	ND	0.30	mg/kg	SW846 6020	06/25/12	MT93V1AK
		Dilution Factor: 1				
Manganese	ND	0.50	mg/kg	SW846 6020	06/25/12	MT93V1AL
		Dilution Factor: 1				
Molybdenum	ND	0.50	mg/kg	SW846 6020	06/25/12	MT93V1AM
		Dilution Factor: 1				
Nickel	ND	0.50	mg/kg	SW846 6020	06/25/12	MT93V1AN
		Dilution Factor: 1				
Phosphorus	ND	50.0	mg/kg	SW846 6020	06/25/12	MT93V1AP
		Dilution Factor: 1				
Selenium	ND	0.50	mg/kg	SW846 6020	06/25/12	MT93V1AQ
		Dilution Factor: 1				

(Continued on next page)

## METHOD BLANK REPORT

## TOTAL Metals

Client Lot #....: SL1276

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS			
Silver	ND	0.20	mg/kg	SW846 6020	06/25/12	MT93V1AR
		Dilution Factor: 1				
Strontium	ND	0.50	mg/kg	SW846 6020	06/25/12	MT93V1AT
		Dilution Factor: 1				
Tin	ND	0.20	mg/kg	SW846 6020	06/25/12	MT93V1AU
		Dilution Factor: 1				
Uranium	ND	0.10	mg/kg	SW846 6020	06/25/12	MT93V1A0
		Dilution Factor: 1				
Vanadium	ND	1.0	mg/kg	SW846 6020	06/25/12	MT93V1AV
		Dilution Factor: 1				
Zinc	ND	5.0	mg/kg	SW846 6020	06/25/12	MT93V1AW
		Dilution Factor: 1				

MB Lot-Sample #: F2F250000-018 Prep Batch #....: 2177018

Antimony	ND	0.50	mg/kg	SW846 6020	06/25-06/26/12	MT9301AA
		Dilution Factor: 1				

MB Lot-Sample #: F2F260000-013 Prep Batch #....: 2178013

Mercury	ND	0.033	mg/kg	SW846 7471A	06/26/12	MVALQ1AA
		Dilution Factor: 1				

**NOTE (S) :**


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

## LABORATORY CONTROL SAMPLE DATA REPORT

## TOTAL Metals

Client Lot #....: SL1276

Matrix.....: SOLID

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCNT RECVRY</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
<b>LCS Lot-Sample#:</b> F2F250000-017 <b>Prep Batch #....:</b> 2177017							
Arsenic	109	111	mg/kg	102	SW846 6020	06/25/12	MT93V1A1
			Dilution Factor: 2.5				
Barium	325	317	mg/kg	98	SW846 6020	06/25/12	MT93V1A2
			Dilution Factor: 2.5				
Beryllium	92.0	91.4	mg/kg	99	SW846 6020	06/25/12	MT93V1A3
			Dilution Factor: 2.5				
Bismuth	100	95.3	mg/kg	95	SW846 6020	06/25/12	MT93V1A4
			Dilution Factor: 1				
Boron	142	129	mg/kg	91	SW846 6020	06/25/12	MT93V1A5
			Dilution Factor: 2.5				
Cadmium	110	112	mg/kg	101	SW846 6020	06/25/12	MT93V1A6
			Dilution Factor: 2.5				
Cobalt	133	138	mg/kg	104	SW846 6020	06/25/12	MT93V1A7
			Dilution Factor: 2.5				
Copper	74.7	75.7	mg/kg	101	SW846 6020	06/25/12	MT93V1A8
			Dilution Factor: 2.5				
Lead	152	155	mg/kg	102	SW846 6020	06/25/12	MT93V1A9
			Dilution Factor: 2.5				
Manganese	443	433	mg/kg	98	SW846 6020	06/25/12	MT93V1CA
			Dilution Factor: 2.5				
Molybdenum	82.5	87.2	mg/kg	106	SW846 6020	06/25/12	MT93V1CC
			Dilution Factor: 2.5				
Nickel	109	111	mg/kg	102	SW846 6020	06/25/12	MT93V1CD
			Dilution Factor: 2.5				
Phosphorus	100	96.6	mg/kg	97	SW846 6020	06/25/12	MT93V1CE
			Dilution Factor: 1				
Selenium	207	218	mg/kg	106	SW846 6020	06/25/12	MT93V1CF
			Dilution Factor: 2.5				

(Continued on next page)

## LABORATORY CONTROL SAMPLE DATA REPORT

## TOTAL Metals

Client Lot #....: SL1276

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #	
Silver	52.0	51.2	mg/kg	99	SW846 6020	06/25/12	MT93V1CG	
			Dilution Factor: 2.5					
Strontium	111	113	mg/kg	102	SW846 6020	06/25/12	MT93V1CH	
			Dilution Factor: 2.5					
Tin	135	136	mg/kg	101	SW846 6020	06/25/12	MT93V1CJ	
			Dilution Factor: 2.5					
Vanadium	110	108	mg/kg	98	SW846 6020	06/25/12	MT93V1CK	
			Dilution Factor: 2.5					
Zinc	299	310	mg/kg	104	SW846 6020	06/25/12	MT93V1CL	
			Dilution Factor: 2.5					
Chromium	93.4	92.8	mg/kg	99	SW846 6020	06/25/12	MT93V1CM	
			Dilution Factor: 2.5					
Uranium	100	100	mg/kg	100	SW846 6020	06/25/12	MT93V1CN	
			Dilution Factor: 1					
<b>LCS Lot-Sample#:</b> F2F250000-018 <b>Prep Batch #....:</b> 2177018								
Antimony	50.0	47.6	mg/kg	95	SW846 6020	06/25-06/26/12	MT9301AC	
			Dilution Factor: 1					
<b>LCS Lot-Sample#:</b> F2F260000-013 <b>Prep Batch #....:</b> 2178013								
Mercury	0.167	0.167	mg/kg	100	SW846 7471A	06/26/12	MVALQ1AC	
			Dilution Factor: 1					

**NOTE (S) :**


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

## MATRIX SPIKE SAMPLE DATA REPORT

## TOTAL Metals

Client Lot #....: SL1276

Matrix.....: SOLID

Date Sampled....: 06/19/12

Date Received...: 06/22/12

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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MS Lot-Sample #: F2F220422-001 Prep Batch #....: 2177017

% Moisture.....: 8.7

## Arsenic

39.8	110	146	mg/kg	97			SW846 6020	06/25/12	MT9JV1C2
39.8	110	144	mg/kg	95	1.5		SW846 6020	06/25/12	MT9JV1C3
Dilution Factor: 1									

## Barium

111	110	222	mg/kg	101			SW846 6020	06/25/12	MT9JV1C4
111	110	225	mg/kg	104	1.4		SW846 6020	06/25/12	MT9JV1C5
Dilution Factor: 1									

## Beryllium

0.29	110	105	mg/kg	96			SW846 6020	06/25/12	MT9JV1C6
0.29	110	104	mg/kg	95	1.3		SW846 6020	06/25/12	MT9JV1C7
Dilution Factor: 1									

## Bismuth

ND	110	105	mg/kg	95			SW846 6020	06/25/12	MT9JV1C8
ND	110	101	mg/kg	92	3.3		SW846 6020	06/25/12	MT9JV1C9
Dilution Factor: 1									

## Boron

5.7	110	109	mg/kg	94			SW846 6020	06/25/12	MT9JV1DA
5.7	110	111	mg/kg	96	1.8		SW846 6020	06/25/12	MT9JV1DC
Dilution Factor: 1									

## Cadmium

0.076	110	101	mg/kg	92			SW846 6020	06/25/12	MT9JV1DD
0.076	110	98.6	mg/kg	90	2.3		SW846 6020	06/25/12	MT9JV1DE
Dilution Factor: 1									

## Chromium

11.8	110	126	mg/kg	104			SW846 6020	06/25/12	MT9JV1EA
11.8	110	116	mg/kg	95	8.1		SW846 6020	06/25/12	MT9JV1EC
Dilution Factor: 1									

## Cobalt

7.6	110	119	mg/kg	102			SW846 6020	06/25/12	MT9JV1DF
7.6	110	114	mg/kg	97	4.3		SW846 6020	06/25/12	MT9JV1DG
Dilution Factor: 1									

(Continued on next page)

## MATRIX SPIKE SAMPLE DATA REPORT

## TOTAL Metals

Client Lot #....: SL1276

Matrix.....: SOLID

Date Sampled....: 06/19/12

Date Received...: 06/22/12

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Copper									
	41.7	110	141	mg/kg	91		SW846 6020	06/25/12	MT9JV1DH
	41.7	110	135	mg/kg	85	4.0	SW846 6020	06/25/12	MT9JV1DJ
			Dilution Factor: 1						
Lead									
	6.3	110	118	mg/kg	102		SW846 6020	06/25/12	MT9JV1DK
	6.3	110	116	mg/kg	100	1.6	SW846 6020	06/25/12	MT9JV1DL
			Dilution Factor: 1						
Manganese									
	352	110	526 N	mg/kg	159		SW846 6020	06/25/12	MT9JV1DM
	352	110	471	mg/kg	109	11	SW846 6020	06/25/12	MT9JV1DN
			Dilution Factor: 1						
Molybdenum									
	1.9	110	121	mg/kg	109		SW846 6020	06/25/12	MT9JV1DP
	1.9	110	120	mg/kg	108	0.60	SW846 6020	06/25/12	MT9JV1DQ
			Dilution Factor: 1						
Nickel									
	9.2	110	122	mg/kg	103		SW846 6020	06/25/12	MT9JV1DR
	9.2	110	112	mg/kg	93	9.1	SW846 6020	06/25/12	MT9JV1DT
			Dilution Factor: 1						
Phosphorus									
	672	110	762	mg/kg	82		SW846 6020	06/25/12	MT9JV1DU
	672	110	767	mg/kg	87	0.71	SW846 6020	06/25/12	MT9JV1DV
			Dilution Factor: 1						
Selenium									
	0.89	110	95.1	mg/kg	86		SW846 6020	06/25/12	MT9JV1DW
	0.89	110	93.7	mg/kg	85	1.5	SW846 6020	06/25/12	MT9JV1DX
			Dilution Factor: 1						
Silver									
	0.14	11.0	9.54	mg/kg	86		SW846 6020	06/25/12	MT9JV1D0
	0.14	11.0	9.62	mg/kg	87	0.81	SW846 6020	06/25/12	MT9JV1D1
			Dilution Factor: 1						
Strontium									
	99.2	110	213	mg/kg	104		SW846 6020	06/25/12	MT9JV1D2
	99.2	110	216	mg/kg	107	1.3	SW846 6020	06/25/12	MT9JV1D3
			Dilution Factor: 1						

(Continued on next page)

## MATRIX SPIKE SAMPLE DATA REPORT

## TOTAL Metals

Client Lot #....: SL1276

Matrix.....: SOLID

Date Sampled....: 06/19/12

Date Received...: 06/22/12

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #	
Tin	4.5	110	110	mg/kg	96		SW846 6020	06/25/12	MT9JV1D4	
	4.5	110	111	mg/kg	97	1.1	SW846 6020	06/25/12	MT9JV1D5	
				Dilution Factor: 1						
Uranium	1.1	110	116	mg/kg	105		SW846 6020	06/25/12	MT9JV1ED	
	1.1	110	113	mg/kg	103	2.6	SW846 6020	06/25/12	MT9JV1EE	
				Dilution Factor: 1						
Vanadium	46.7	110	157	mg/kg	101		SW846 6020	06/25/12	MT9JV1D6	
	46.7	110	150	mg/kg	94	4.6	SW846 6020	06/25/12	MT9JV1D7	
				Dilution Factor: 1						
Zinc	97.3	110	190	mg/kg	84		SW846 6020	06/25/12	MT9JV1D8	
	97.3	110	188	mg/kg	83	0.98	SW846 6020	06/25/12	MT9JV1D9	
				Dilution Factor: 1						

MS Lot-Sample #: F2F220422-001 Prep Batch #....: 2177018

% Moisture.....: 8.7

Antimony	36.0	54.8	83.9	mg/kg	87		SW846 6020	06/25-06/26/12	MT9JV1CF	
	36.0	54.8	90.4	mg/kg	99	7.5	SW846 6020	06/25-06/26/12	MT9JV1CG	
				Dilution Factor: 1						

MS Lot-Sample #: F2F220422-001 Prep Batch #....: 2178013

% Moisture.....: 8.7

Mercury	0.091	0.167	0.297	N mg/kg	124		SW846 7471A	06/26/12	MT9JV1CH	
	0.091	0.167	0.293	N mg/kg	121	1.5	SW846 7471A	06/26/12	MT9JV1CJ	
				Dilution Factor: 1						

## NOTE (S) :

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

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

## Quality Control Report

**Attention** Scot Fitzgerald      **Group #** WSCF120413  
**Department** Inorganic

**QC Batch** 198099      **Test** ICP-2008 MS All possible metal  
**Associated Samples** 120413001, 120413002, 120413003, 120413004, 120413005, 120413006, 120413007, 120413008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
Manganese	7439-96-5	<0.10	<0.10	ug/L					U	04/05/12
Nickel	7440-02-0	<0.10	<0.10	ug/L					U	04/05/12
Silver	7440-22-4	<0.050	<0.050	ug/L					U	04/05/12
Antimony	7440-36-0	<0.30	<0.30	ug/L					U	04/05/12
Barium	7440-39-3	<0.20	<0.20	ug/L					U	04/05/12
Beryllium	7440-41-7	<0.10	<0.10	ug/L					U	04/05/12
Cadmium	7440-43-9	<0.050	<0.050	ug/L					U	04/05/12
Chromium	7440-47-3	0.187	0.187	ug/L					B	04/05/12
Cobalt	7440-48-4	<0.050	<0.050	ug/L					U	04/05/12
Copper	7440-50-8	<0.10	<0.10	ug/L					U	04/05/12
Vanadium	7440-62-2	0.480	0.480	ug/L					B	04/05/12
Zinc	7440-66-6	<1.0	<1.0	ug/L					U	04/05/12
Lead	7439-92-1	<0.050	<0.050	ug/L					U	04/05/12
Mercury	7439-97-6	<0.050	<0.050	ug/L					U	04/05/12
Molybdenum	7439-98-7	<0.050	<0.050	ug/L					U	04/05/12
Strontium	7440-24-6	<0.10	<0.10	ug/L					U	04/05/12
Tin	7440-31-5	<0.050	<0.050	ug/L					U	04/05/12
Uranium	7440-61-1	<0.050	<0.050	ug/L					U	04/05/12
Arsenic	7440-38-2	<0.20	<0.20	ug/L					U	04/05/12





## Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic  
 Group # WSCF120413

Analyte	CAS #	Original Found	QC Found	Units	% RecovLimits	RPD	RPD Limit	RQ	Analyzed
Antimony	7440-36-0	82.2	82.2	mg/kg	83.4	70 - 130	7.40	30	04/05/12
Barium	7440-39-3	93.7	93.7	mg/kg	95	70 - 130	9.30	30	04/05/12
Beryllium	7440-41-7	101	101	mg/kg	102.9	70 - 130	2.90	30	04/05/12
Cadmium	7440-43-9	95.9	95.9	mg/kg	97.3	70 - 130	3.90	30	04/05/12
Chromium	7440-47-3	91.1	91.1	mg/kg	92.5	70 - 130	4.70	30	04/05/12
Cobalt	7440-48-4	92.4	92.4	mg/kg	93.8	70 - 130	2.90	30	04/05/12
Copper	7440-50-8	89.9	89.9	mg/kg	91.2	70 - 130	1.90	30	04/05/12
Vanadium	7440-62-2	94.2	94.2	mg/kg	95.6	70 - 130	2.10	30	04/05/12
Zinc	7440-66-6	90.0	90.0	mg/kg	91.3	70 - 130	3.60	30	04/05/12
Lead	7439-92-1	97.3	97.3	mg/kg	98.7	70 - 130	4.70	30	04/05/12
Mercury	7439-97-6	2.19	2.19	mg/kg	111	70 - 130	3.60	30	04/05/12
Molybdenum	7439-98-7	104	104	mg/kg	105.6	70 - 130	4.70	30	04/05/12
Strontium	7440-24-6	102	102	mg/kg	103.6	70 - 130	1.50	30	04/05/12
Tin	7440-31-5	101	101	mg/kg	102.6	70 - 130	3.80	30	04/05/12
Uranium	7440-61-1	101	101	mg/kg	102.7	70 - 130	3.80	30	04/05/12
Arsenic	7440-38-2	94.4	94.4	mg/kg	95.7	70 - 130	5.60	30	04/05/12
Selenium	7782-49-2	75.9	75.9	mg/kg	77	70 - 130	33.90	30	04/06/12
								*	X

Date: 11 July 2012  
 To: CH2M Hill (technical representative)  
 From: Analytical Quality Associates, Inc.  
 Project: 100-K  
 Subject: General Chemistry - Sample Data Groups (SDGs) WSCF120798, SL1276,  
 WSCF120413, WO6455

## **INTRODUCTION**

This memorandum presents the results of data validation for SDGs WSCF120798, SL1276, WSCF120413, WO6455 prepared by WSCF Analytical Laboratories and Test America Laboratories, St. Louis. A list of samples validated along with the analytical methods is provided in the following table.

<b>Sample ID</b>	<b>Sample Date</b>	<b>Media</b>	<b>Validation Level</b>	<b>Analytical Methods</b>
B2L1D4	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2L1D7	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2L1F0	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2L1F3	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H1V8	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H1W1	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2L1H0	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H111	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H114	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2L1F6	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H117	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2L1H3	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H1T9	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H1V5	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2H1V2	3/26/12	Other Solid	C	300.0 & 7196 (Cr VI)
B2L1F9	6/19/12	Other Solid	C	300.0 & 7196 (Cr VI)

Data validation was conducted in accordance with the CHPRC validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5 (SAP). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Documentation Requested By Client

## **DATA QUALITY OBJECTIVES**

- **Holding Times and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirements are as follows:

- All anions – extraction within 28 days of sample collection and analysis within 48 hours of extraction
- Hexavalent chromium – extraction of soils within 30 days of sample collection and analysis within 24 hours of extraction

Sample preservation requires chilling to 4 degrees Celsius.

The samples were analyzed within the prescribed holding times and properly preserved.

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

### **Laboratory Blanks**

All laboratory blank results were acceptable.

### **Trip Blanks**

No trip blanks were submitted for validation.

### **Field Blanks**

No field blanks were submitted for validation.

### **Equipment Blanks**

All equipment blank results were acceptable.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results and laboratory control sample results. According to the SAP, the matrix spike sample accuracy limits are 70% to 130% and the laboratory control sample accuracy limits are the ones specified by the DV procedure. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

### **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples**

All MS/MSD recoveries were acceptable.

### **Laboratory Control Samples (LCSs)**

All LCS recoveries were acceptable.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, laboratory duplicate sample results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the RPD limit for Cr VI is 30%. The RPD limits for reported analytes not listed in the SAP are specified by the DV procedure. When duplicate RPDs exceed the limits and associated results are <5X the reporting limit (RL) with absolute differences <2X the RL, no precision infraction occurred.

### **MS/MSD Samples**

All MS/MSD RPD values were acceptable.

### **Laboratory Duplicate Samples**

All laboratory duplicate results were acceptable with the following exceptions. The duplicate relative percent differences for Cr VI in SDGs WSCF120798 and WSCF120413 were >30%. However, the parent and/or duplicate results were < the MDL. Therefore, no sample data should be qualified.

### **Field Duplicate Samples**

All field duplicate results were acceptable.

### **Field Split Samples**

All field split results were acceptable except for the following. The field split RPD for chloride (45%) was >35%.

- **Detection Limits**

Reported MDLs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDLs with associated non-detected sample results were below the CRDLs.

CRDLs for chloride and sulfate were not provided in the SAP.

- **Completeness**

SDGs WSCF120798, SL1276, WSCF120413, WO6455 were submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

**MAJOR DEFICIENCIES**

None found.

**MINOR DEFICIENCIES**

None found.

**REFERENCES**

GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009.

## **Appendix 1**

### **Glossary of Data Reporting Qualifiers**

Qualifiers that may be applied by data validators in compliance with the CHPRC statement of work are as follows:

- **U** — The constituent was analyzed for, but was not detected. The data should be considered usable for decision-making purposes.
- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the RL. The data should be considered usable for decision-making purposes.
- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **N** — The analysis indicates the presence of an analyte that has been tentatively identified.
- **NJ** — The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
- **NJ+** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation.
- **NJ-** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation.
- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.
- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

**Appendix 2**  
**Summary of Data Qualification**

<b>General Chemistry Data Qualification Summary</b>			
SDGs: WSCF120798, SL1276, WSCF120413, WO6455	Reviewer: AQA	Project: 100-K	Page 1 of 1
<b>Analyte(s)</b>	<b>Qualifier</b>	<b>Samples Affected</b>	<b>Reason</b>
None			

Comments: None

## **Appendix 3**

### Annotated Laboratory Reports

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798001  
 SAF# F11-146  
 Sample ID B2L1D4

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anion Prep (S)</b>										<b>06/20/12</b>
<b>Anions by Ion Chromatography (Solid)</b>										
Chloride	16887-00-6	LA-533-410	B	10.4		mg/kg	1	3.0	21	06/20/12
Sulfate	14808-79-8	LA-533-410		131		mg/kg	1	5.7	55	06/20/12
<b>ICPMS Prep (S)</b>										<b>06/25/12</b>
<b>ICP-2008 MS All possible metal</b>										
Manganese	7439-96-5	LA-505-412		379		mg/kg	0.5	0.054	0.54	06/26/12
Nickel	7440-02-0	LA-505-412		8.57		mg/kg	0.5	0.054	0.54	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0456		mg/kg	0.5	0.027	0.27	06/26/12
Antimony	7440-36-0	LA-505-412		27.7		mg/kg	0.5	0.16	1.6	06/26/12
Barium	7440-39-3	LA-505-412		123		mg/kg	0.5	0.11	1.1	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.304		mg/kg	0.5	0.054	0.54	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.234		mg/kg	0.5	0.027	0.27	06/26/12
Chromium	7440-47-3	LA-505-412		13.0		mg/kg	0.5	0.054	0.54	06/26/12
Cobalt	7440-48-4	LA-505-412		9.98		mg/kg	0.5	0.027	0.13	06/26/12
Copper	7440-50-8	LA-505-412		39.4		mg/kg	0.5	0.054	0.54	06/26/12
Vanadium	7440-62-2	LA-505-412		66.4		mg/kg	0.5	0.11	1.1	06/26/12
Zinc	7440-66-6	LA-505-412		130		mg/kg	0.5	0.54	5.4	06/26/12
Lead	7439-92-1	LA-505-412		5.59		mg/kg	0.5	0.027	0.27	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

# WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798001  
 SAF# F11-146  
 Sample ID B2L1D4

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Mercury</del>	<del>7439-97-6</del>	<del>LA-505-412</del>	<del>B</del>	<del>0.0515</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.027</del>	<del>0.11</del>	<del>06/26/12</del>
Molybdenum	7439-98-7	LA-505-412		1.63		mg/kg	0.5	0.027	0.27	06/26/12
Strontium	7440-24-6	LA-505-412		92.0		mg/kg	0.5	0.054	0.54	06/26/12
Tin	7440-31-5	LA-505-412		5.62		mg/kg	0.5	0.027	0.27	06/26/12
Uranium	7440-61-1	LA-505-412		1.21		mg/kg	0.5	0.027	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		52.9		mg/kg	0.5	0.11	1.1	06/26/12
Selenium	7782-49-2	LA-505-412	B	0.281		mg/kg	0.5	0.27	2.7	06/26/12
<del>Boron</del>	<del>7440-42-8</del>	<del>LA-505-412</del>		<del>4.57</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.27</del>	<del>2.7</del>	<del>06/26/12</del>
<b>Preparation for Cr6 (SO)</b>										<b>06/26/12</b>
<b>Hexavalent chromium</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.10		ug/g	1	0.10	0.52	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798002  
 SAF# F11-146  
 Sample ID B2L1D7

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anion Prep (S)</b>										<b>06/20/12</b>
<b>Anions by Ion Chromatography (Solid)</b>										
Chloride	16887-00-6	LA-533-410		37.0		mg/kg	1	3.1	22	06/20/12
Sulfate	14808-79-8	LA-533-410		169		mg/kg	1	5.9	57	06/20/12
<b><del>ICPMS Prep (S)</del></b>										<b><del>06/25/12</del></b>
<b>ICP-2008 MS All possible metal</b>										
Manganese	7439-96-5	LA-505-412		301		mg/kg	0.5	0.060	0.60	<del>06/26/12</del>
Nickel	7440-02-0	LA-505-412		9.27		mg/kg	0.5	0.060	0.60	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0429		mg/kg	0.5	0.030	0.30	06/26/12
Antimony	7440-36-0	LA-505-412		30.3		mg/kg	0.5	0.18	1.8	06/26/12
Barium	7440-39-3	LA-505-412		110		mg/kg	0.5	0.12	1.2	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.377		mg/kg	0.5	0.060	0.60	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0882		mg/kg	0.5	0.030	0.30	06/26/12
Chromium	7440-47-3	LA-505-412		12.7		mg/kg	0.5	0.060	0.60	06/26/12
Cobalt	7440-48-4	LA-505-412		7.95		mg/kg	0.5	0.030	0.15	06/26/12
Copper	7440-50-8	LA-505-412		37.8		mg/kg	0.5	0.060	0.60	06/26/12
Vanadium	7440-62-2	LA-505-412		51.7		mg/kg	0.5	0.12	1.2	06/26/12
Zinc	7440-66-6	LA-505-412		93.2		mg/kg	0.5	0.60	6.0	06/26/12
Lead	7439-92-1	LA-505-412		7.30		mg/kg	0.5	0.030	0.30	<del>06/26/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798002  
 SAF# F11-146  
 Sample ID B2L1D7

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Mercury</del>	<del>7439-97-6</del>	<del>LA-505-412</del>		<del>0.212</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.030</del>	<del>0.12</del>	<del>06/26/12</del>
Molybdenum	7439-98-7	LA-505-412		1.79		mg/kg	0.5	0.030	0.30	06/26/12
Strontium	7440-24-6	LA-505-412		101		mg/kg	0.5	0.060	0.60	06/26/12
Tin	7440-31-5	LA-505-412		4.58		mg/kg	0.5	0.030	0.30	06/26/12
Uranium	7440-61-1	LA-505-412		2.18		mg/kg	0.5	0.030	0.15	06/26/12
Arsenic	7440-38-2	LA-505-412		42.6		mg/kg	0.5	0.12	1.2	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.30		mg/kg	0.5	0.30	3.0	06/26/12
<del>Boron</del>	<del>7440-42-8</del>	<del>LA-505-412</del>		<del>4.54</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.30</del>	<del>3.0</del>	<del>06/26/12</del>
<b>Preparation for Cr6 (SO)</b>										<b>06/26/12</b>
<b>Hexavalent chromium</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.11		ug/g	1	0.11	0.54	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798003  
 SAF# F11-146  
 Sample ID B2L1F0

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anion Prep (S)</b>										<b>06/20/12</b>
<b>Anions by Ion Chromatography (Solid)</b>										
Chloride	16887-00-6	LA-533-410		30.3		mg/kg	1	3.1	22	06/20/12
Sulfate	14808-79-8	LA-533-410		151		mg/kg	1	6.0	57	06/20/12
<b>ICPMS Prep (S)</b>										<b>06/25/12</b>
<b>ICP-2008 MS All possible metal</b>										
Manganese	7439-96-5	LA-505-412		260		mg/kg	0.5	0.055	0.55	06/26/12
Nickel	7440-02-0	LA-505-412		7.70		mg/kg	0.5	0.055	0.55	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0371		mg/kg	0.5	0.027	0.27	06/26/12
Antimony	7440-36-0	LA-505-412		13.4		mg/kg	0.5	0.16	1.6	06/26/12
Barium	7440-39-3	LA-505-412		117		mg/kg	0.5	0.11	1.1	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.371		mg/kg	0.5	0.055	0.55	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0595		mg/kg	0.5	0.027	0.27	06/26/12
Chromium	7440-47-3	LA-505-412		11.2		mg/kg	0.5	0.055	0.55	06/26/12
Cobalt	7440-48-4	LA-505-412		7.75		mg/kg	0.5	0.027	0.14	06/26/12
Copper	7440-50-8	LA-505-412		27.6		mg/kg	0.5	0.055	0.55	06/26/12
Vanadium	7440-62-2	LA-505-412		45.0		mg/kg	0.5	0.11	1.1	06/26/12
Zinc	7440-66-6	LA-505-412		61.5		mg/kg	0.5	0.55	5.5	06/26/12
Lead	7439-92-1	LA-505-412		5.22		mg/kg	0.5	0.027	0.27	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798003  
 SAF# F11-146  
 Sample ID B2L1F0

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Mercury</del>	<del>7439-97-6</del>	<del>LA-505-412</del>	<del>B</del>	<del>0.0295</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.027</del>	<del>0.11</del>	<del>06/26/12</del>
Molybdenum	7439-98-7	LA-505-412		1.46		mg/kg	0.5	0.027	0.27	06/26/12
Strontium	7440-24-6	LA-505-412		88.9		mg/kg	0.5	0.055	0.55	06/26/12
Tin	7440-31-5	LA-505-412		2.41		mg/kg	0.5	0.027	0.27	06/26/12
Uranium	7440-61-1	LA-505-412		1.13		mg/kg	0.5	0.027	0.14	06/26/12
Arsenic	<del>7440-38-2</del>	LA-505-412		21.8		mg/kg	0.5	0.11	1.1	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.27		mg/kg	0.5	0.27	2.7	06/26/12
<del>Boron</del>	<del>7440-42-8</del>	<del>LA-505-412</del>		<del>3.41</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.27</del>	<del>2.7</del>	<del>06/26/12</del>
<b>Preparation for Cr6 (SO)</b>										<b>06/26/12</b>
<b>Hexavalent chromium</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.11		ug/g	1	0.11	0.54	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798004  
 SAF# F11-146  
 Sample ID B2L1F3

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anion Prep (S)</b>										<b>06/20/12</b>
<b>Anions by Ion Chromatography (Solid)</b>										
Chloride	16887-00-6	LA-533-410	B	7.83		mg/kg	1	3.1	22	06/20/12
Sulfate	14808-79-8	LA-533-410		250		mg/kg	1	5.8	56	06/20/12
<b>ICPMS Prep (S)</b>										<b>06/25/12</b>
<b>ICP-2008 MS All possible metal</b>										
Manganese	7439-96-5	LA-505-412		317		mg/kg	0.5	0.051	0.51	06/26/12
Nickel	7440-02-0	LA-505-412		8.56		mg/kg	0.5	0.051	0.51	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0505		mg/kg	0.5	0.025	0.25	06/26/12
Antimony	7440-36-0	LA-505-412		14.4		mg/kg	0.5	0.15	1.5	06/26/12
Barium	7440-39-3	LA-505-412		134		mg/kg	0.5	0.10	1.0	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.418		mg/kg	0.5	0.051	0.51	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0551		mg/kg	0.5	0.025	0.25	06/26/12
Chromium	7440-47-3	LA-505-412		12.0		mg/kg	0.5	0.051	0.51	06/26/12
Cobalt	7440-48-4	LA-505-412		7.08		mg/kg	0.5	0.025	0.13	06/26/12
Copper	7440-50-8	LA-505-412		26.3		mg/kg	0.5	0.051	0.51	06/26/12
Vanadium	7440-62-2	LA-505-412		49.8		mg/kg	0.5	0.10	1.0	06/26/12
Zinc	7440-66-6	LA-505-412		65.2		mg/kg	0.5	0.51	5.1	06/26/12
Lead	7439-92-1	LA-505-412		4.95		mg/kg	0.5	0.025	0.25	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798004  
 SAF# F11-146  
 Sample ID B2L1F3

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Mercury</del>	<del>7439-97-6</del>	<del>LA-505-412</del>	<del>B</del>	<del>0.0648</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.025</del>	<del>0.10</del>	<del>06/26/12</del>
Molybdenum	7439-98-7	LA-505-412		1.80		mg/kg	0.5	0.025	0.25	06/26/12
Strontium	7440-24-6	LA-505-412		99.0		mg/kg	0.5	0.051	0.51	06/26/12
Tin	7440-31-5	LA-505-412		2.81		mg/kg	0.5	0.025	0.25	06/26/12
Uranium	7440-61-1	LA-505-412		1.21		mg/kg	0.5	0.025	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		25.4		mg/kg	0.5	0.10	1.0	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.25		mg/kg	0.5	0.25	2.5	06/26/12
<del>Boron</del>	<del>7440-42-8</del>	<del>LA-505-412</del>		<del>4.12</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.25</del>	<del>2.5</del>	<del>06/26/12</del>
<b>Preparation for Cr6 (SO)</b>										<b>06/26/12</b>
<b>Hexavalent chromium</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.11		ug/g	1	0.11	0.53	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
Department Inorganic

Group # WSCF120798

Sample # 120798005  
SAF# F11-146  
Sample ID B2H1V8

Matrix OTHERSOLID  
Sampled 06/19/12  
Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anion Prep (S)</b>										<b>06/20/12</b>
<b>Anions by Ion Chromatography (Solid)</b>										
Chloride	16887-00-6	LA-533-410	B	20.5		mg/kg	1	3.1	22	06/20/12
Sulfate	14808-79-8	LA-533-410		219		mg/kg	1	5.9	56	06/20/12
<del><b>ICPMS Prep (S)</b></del>										<del><b>06/25/12</b></del>
<del><b>ICP-2008 MS All possible metal</b></del>										
Manganese	7439-96-5	LA-505-412		336		mg/kg	0.5	0.053	0.53	06/26/12
Nickel	7440-02-0	LA-505-412		10.2		mg/kg	0.5	0.053	0.53	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0460		mg/kg	0.5	0.027	0.27	06/26/12
Antimony	7440-36-0	LA-505-412		44.7		mg/kg	0.5	0.16	1.6	06/26/12
Barium	7440-39-3	LA-505-412		132		mg/kg	0.5	0.11	1.1	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.276		mg/kg	0.5	0.053	0.53	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.0936		mg/kg	0.5	0.027	0.27	06/26/12
Chromium	7440-47-3	LA-505-412		15.4		mg/kg	0.5	0.053	0.53	06/26/12
Cobalt	7440-48-4	LA-505-412		8.85		mg/kg	0.5	0.027	0.13	06/26/12
Copper	7440-50-8	LA-505-412		41.1		mg/kg	0.5	0.053	0.53	06/26/12
Vanadium	7440-62-2	LA-505-412		62.0		mg/kg	0.5	0.11	1.1	06/26/12
Zinc	7440-66-6	LA-505-412		127		mg/kg	0.5	0.53	5.3	06/26/12
Lead	7439-92-1	LA-505-412		7.18		mg/kg	0.5	0.027	0.27	06/26/12

MDL = Minimum Detection Limit  
RQ = Result Qualifier  
TP Err = Total Propagated Error  
DF = Dilution Factor  
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
C - Analyte was found in the Associated Blank. (Inorganic)  
D - Analyte was reported at a secondary dilution factor.  
E - Analyte is an estimate, see comment section.  
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
X,Y or Z - See comment detail and/or narrative.  
PQL is equivalent to Estimated Quantitation Limit (EQL)

# WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798005  
 SAF# F11-146  
 Sample ID B2H1V8

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Mercury</del>	<del>7439-97-6</del>	<del>LA-505-412</del>	<del>B</del>	<del>0.0636</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.027</del>	<del>0.11</del>	<del>06/26/12</del>
Molybdenum	7439-98-7	LA-505-412		2.22		mg/kg	0.5	0.027	0.27	06/26/12
Strontium	7440-24-6	LA-505-412		118		mg/kg	0.5	0.053	0.53	06/26/12
Tin	7440-31-5	LA-505-412		7.47		mg/kg	0.5	0.027	0.27	06/26/12
Uranium	7440-61-1	LA-505-412		1.28		mg/kg	0.5	0.027	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		65.8		mg/kg	0.5	0.11	1.1	06/26/12
Selenium	7782-49-2	LA-505-412	U	<0.27		mg/kg	0.5	0.27	2.7	06/26/12
<del>Boron</del>	<del>7440-42-8</del>	<del>LA-505-412</del>		<del>3.48</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.27</del>	<del>2.7</del>	<del>06/26/12</del>
<b>Preparation for Cr6 (SO)</b>										<b>06/26/12</b>
<b>Hexavalent chromium</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.11		ug/g	1	0.11	0.53	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798006  
 SAF# F11-146  
 Sample ID B2H1W1

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anion Prep (S)</b>										<b>06/20/12</b>
<b>Anions by Ion Chromatography (Solid)</b>										
Chloride	16887-00-6	LA-533-410		21.9		mg/kg	1	3.0	21	06/20/12
Sulfate	14808-79-8	LA-533-410		253		mg/kg	1	5.8	55	06/20/12
<b>ICPMS Prep (S)</b>										<b>06/25/12</b>
<b>ICP-2008 MS All possible metal</b>										
Manganese	7439-96-5	LA-505-412		278		mg/kg	0.5	0.051	0.51	06/26/12
Nickel	7440-02-0	LA-505-412		9.25		mg/kg	0.5	0.051	0.51	06/26/12
Silver	7440-22-4	LA-505-412	B	0.0783		mg/kg	0.5	0.025	0.25	06/26/12
Antimony	7440-36-0	LA-505-412		29.3		mg/kg	0.5	0.15	1.5	06/26/12
Barium	7440-39-3	LA-505-412		137		mg/kg	0.5	0.10	1.0	06/26/12
Beryllium	7440-41-7	LA-505-412	B	0.297		mg/kg	0.5	0.051	0.51	06/26/12
Cadmium	7440-43-9	LA-505-412	B	0.245		mg/kg	0.5	0.025	0.25	06/26/12
Chromium	7440-47-3	LA-505-412		18.1		mg/kg	0.5	0.051	0.51	06/26/12
Cobalt	7440-48-4	LA-505-412		7.54		mg/kg	0.5	0.025	0.13	06/26/12
Copper	7440-50-8	LA-505-412		39.5		mg/kg	0.5	0.051	0.51	06/26/12
Vanadium	7440-62-2	LA-505-412		51.0		mg/kg	0.5	0.10	1.0	06/26/12
Zinc	7440-66-6	LA-505-412		125		mg/kg	0.5	0.51	5.1	06/26/12
Lead	7439-92-1	LA-505-412		23.9		mg/kg	0.5	0.025	0.25	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

# WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Sample # 120798006  
 SAF# F11-146  
 Sample ID B2H1W1

Matrix OTHERSOLID  
 Sampled 06/19/12  
 Received 06/19/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<del>Mercury</del>	<del>7439-97-6</del>	<del>LA-505-412</del>		<del>0.606</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.025</del>	<del>0.10</del>	<del>06/26/12</del>
Molybdenum	7439-98-7	LA-505-412		1.69		mg/kg	0.5	0.025	0.25	06/26/12
Strontium	7440-24-6	LA-505-412		103		mg/kg	0.5	0.051	0.51	06/26/12
Tin	7440-31-5	LA-505-412		5.51		mg/kg	0.5	0.025	0.25	06/26/12
Uranium	7440-61-1	LA-505-412		1.76		mg/kg	0.5	0.025	0.13	06/26/12
Arsenic	7440-38-2	LA-505-412		49.2		mg/kg	0.5	0.10	1.0	06/26/12
Selenium	7782-49-2	LA-505-412	B	0.268		mg/kg	0.5	0.25	2.5	06/26/12
<del>Boron</del>	<del>7440-42-8</del>	<del>LA-505-412</del>		<del>3.54</del>		<del>mg/kg</del>	<del>0.5</del>	<del>0.25</del>	<del>2.5</del>	<del>06/26/12</del>
<b>Preparation for Cr6 (SO)</b>										<b>06/26/12</b>
<b>Hexavalent chromium</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.11		ug/g	1	0.11	0.53	06/26/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2L1H0

## General Chemistry

Lot-Sample #....: F2F220422-001      Work Order #....: MT9JV      Matrix.....: SOLID  
 Date Sampled....: 06/19/12      Date Received...: 06/22/12  
 % Moisture.....: 8.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Chloride	23.5 N	2.2	mg/kg	MCAWW 300.0A	06/25/12	2177132
			Dilution Factor: 1	MDL.....: 0.22		
Percent Moisture	8.7	0.10	%	MCAWW 160.3 MOD	06/26-06/27/12	2178016
			Dilution Factor: 1	MDL.....:		
Sulfate	204 D	54.8	mg/kg	MCAWW 300.0A	06/25/12	2177133
			Dilution Factor: 10	MDL.....: 5.5		

**NOTE (S) :**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

D Result was obtained from the analysis of a dilution.

KS  
07/11/12

**FORM I**  
**SAMPLE RESULTS**

Date: 28-Jun-12

Lab Name: TestAmerica

SDG: W06455

Collection Date: 6/19/2012 8:50:00 AM

Lot-Sample No.: J2F210478-1

Report No.: 52151

Received Date: 6/21/2012 10:35:00 AM

Client Sample ID: B2L1F9

COC No.: F11-146-235

Matrix: OTHER SOLI OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error ( 2 s)	Total Uncert( 2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2174055	7196_CR6			Work Order: MT9CC1AA		Report DB ID: 9MT9CC10						
HEXCHROME	<b>1.55E-01</b>	U		0.0E+00	1.55E-01	mg/kg	N/A	(1.)	6/22/12		2.5	
							1.55E-01	N/A			g	

No. of Results: 1

Comments:

TestAmerica  
rptSTLRchSample  
V5.2.20 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

07/11/12  
KS

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413001  
 SAF# F11-146  
 Sample ID B2H111

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	B	4.80		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		266		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.092		ug/g	1	0.092	0.46	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	N	210		mg/kg	1	0.099	0.99	04/05/12
Nickel	7440-02-0	LA-505-412		9.48		mg/kg	1	0.099	0.99	04/05/12
Silver	7440-22-4	LA-505-412	U	<0.049		mg/kg	1	0.049	0.49	04/05/12
Antimony	7440-36-0	LA-505-412		6.47		mg/kg	1	0.30	3.0	04/05/12
Barium	7440-39-3	LA-505-412		72.8		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.185		mg/kg	1	0.099	0.99	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.427		mg/kg	1	0.049	0.49	04/05/12
Chromium	7440-47-3	LA-505-412		17.2		mg/kg	1	0.099	0.99	04/05/12
Cobalt	7440-48-4	LA-505-412		4.76		mg/kg	1	0.049	0.25	04/05/12
Copper	7440-50-8	LA-505-412		30.9		mg/kg	1	0.099	0.99	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413002  
 SAF# F11-146  
 Sample ID B2H114

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	B	8.93		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		492		mg/kg	1	5.4	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.097		ug/g	1	0.097	0.48	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	N	224		mg/kg	1	0.10	1.0	04/05/12
Nickel	7440-02-0	LA-505-412		7.55		mg/kg	1	0.10	1.0	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0582		mg/kg	1	0.052	0.52	04/05/12
Antimony	7440-36-0	LA-505-412	B	1.88		mg/kg	1	0.31	3.1	04/05/12
Barium	7440-39-3	LA-505-412		93.0		mg/kg	1	0.21	2.1	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.248		mg/kg	1	0.10	1.0	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.299		mg/kg	1	0.052	0.52	04/05/12
Chromium	7440-47-3	LA-505-412		11.9		mg/kg	1	0.10	1.0	04/05/12
Cobalt	7440-48-4	LA-505-412		4.80		mg/kg	1	0.052	0.26	04/05/12
Copper	7440-50-8	LA-505-412		16.5		mg/kg	1	0.10	1.0	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413003  
 SAF# F11-146  
 Sample ID B2L1F6

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	B	15.3		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		352		mg/kg	1	5.4	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.096		ug/g	1	0.096	0.48	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	N	236		mg/kg	1	0.092	0.92	04/05/12
Nickel	7440-02-0	LA-505-412		7.20		mg/kg	1	0.092	0.92	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0480		mg/kg	1	0.046	0.46	04/05/12
Antimony	7440-36-0	LA-505-412	B	1.97		mg/kg	1	0.28	2.8	04/05/12
Barium	7440-39-3	LA-505-412		95.0		mg/kg	1	0.18	1.8	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.255		mg/kg	1	0.092	0.92	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.175		mg/kg	1	0.046	0.46	04/05/12
Chromium	7440-47-3	LA-505-412		8.90		mg/kg	1	0.092	0.92	04/05/12
Cobalt	7440-48-4	LA-505-412		5.52		mg/kg	1	0.046	0.23	04/05/12
Copper	7440-50-8	LA-505-412		15.3		mg/kg	1	0.092	0.92	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413004  
 SAF# F11-146  
 Sample ID B2H117

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	B	14.4		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		370		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.094		ug/g	1	0.094	0.47	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	N	340		mg/kg	1	0.11	1.1	04/05/12
Nickel	7440-02-0	LA-505-412		11.6		mg/kg	1	0.11	1.1	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0633		mg/kg	1	0.055	0.55	04/05/12
Antimony	7440-36-0	LA-505-412	B	2.83		mg/kg	1	0.33	3.3	04/05/12
Barium	7440-39-3	LA-505-412		139		mg/kg	1	0.22	2.2	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.359		mg/kg	1	0.11	1.1	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.349		mg/kg	1	0.055	0.55	04/05/12
Chromium	7440-47-3	LA-505-412		12.3		mg/kg	1	0.11	1.1	04/05/12
Cobalt	7440-48-4	LA-505-412		7.43		mg/kg	1	0.055	0.27	04/05/12
Copper	7440-50-8	LA-505-412		20.4		mg/kg	1	0.11	1.1	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413005  
 SAF# F11-146  
 Sample ID B2L1H3

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	U	<2.9		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410	U	<5.4		mg/kg	1	5.4	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.094		ug/g	1	0.094	0.47	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	BN	0.373		mg/kg	1	0.11	1.1	04/05/12
Nickel	7440-02-0	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	04/05/12
Silver	7440-22-4	LA-505-412	U	<0.054		mg/kg	1	0.054	0.54	04/05/12
Antimony	7440-36-0	LA-505-412	U	<0.33		mg/kg	1	0.33	3.3	04/05/12
Barium	7440-39-3	LA-505-412	U	<0.22		mg/kg	1	0.22	2.2	04/05/12
Beryllium	7440-41-7	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	04/05/12
Cadmium	7440-43-9	LA-505-412	U	<0.054		mg/kg	1	0.054	0.54	04/05/12
Chromium	7440-47-3	LA-505-412	BC	0.857		mg/kg	1	0.11	1.1	04/05/12
<del>Cobalt</del>	<del>7440-48-4</del>	<del>LA-505-412</del>	<del>B</del>	<del>0.0607</del>		<del>mg/kg</del>	<del>1</del>	<del>0.054</del>	<del>0.27</del>	<del>04/05/12</del>
<del>Copper</del>	<del>7440-50-8</del>	<del>LA-505-412</del>		<del>1.52</del>		<del>mg/kg</del>	<del>1</del>	<del>0.11</del>	<del>1.1</del>	<del>04/05/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413006  
 SAF# F11-146  
 Sample ID B2H1T9

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	B	8.84		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		420		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.098		ug/g	1	0.098	0.49	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	N	307		mg/kg	1	0.10	1.0	04/05/12
Nickel	7440-02-0	LA-505-412		10.2		mg/kg	1	0.10	1.0	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0750		mg/kg	1	0.050	0.50	04/05/12
Antimony	7440-36-0	LA-505-412	B	0.893		mg/kg	1	0.30	3.0	04/05/12
Barium	7440-39-3	LA-505-412		201		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.366		mg/kg	1	0.10	1.0	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.0860		mg/kg	1	0.050	0.50	04/05/12
Chromium	7440-47-3	LA-505-412		12.3		mg/kg	1	0.10	1.0	04/05/12
<del>Cobalt</del>	<del>7440-48-4</del>	<del>LA-505-412</del>		<del>6.04</del>		<del>mg/kg</del>	<del>1</del>	<del>0.050</del>	<del>0.25</del>	<del>04/05/12</del>
<del>Copper</del>	<del>7440-50-8</del>	<del>LA-505-412</del>		<del>17.6</del>		<del>mg/kg</del>	<del>1</del>	<del>0.10</del>	<del>1.0</del>	<del>04/05/12</del>

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413007  
 SAF# F11-146  
 Sample ID B2H1V5

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	U	<2.9		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		84.5		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.093		ug/g	1	0.093	0.47	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	N	310		mg/kg	1	0.10	1.0	04/05/12
Nickel	7440-02-0	LA-505-412		7.70		mg/kg	1	0.10	1.0	04/05/12
Silver	7440-22-4	LA-505-412	B	0.0702		mg/kg	1	0.051	0.51	04/05/12
Antimony	7440-36-0	LA-505-412	B	0.637		mg/kg	1	0.31	3.1	04/05/12
Barium	7440-39-3	LA-505-412		140		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.355		mg/kg	1	0.10	1.0	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.142		mg/kg	1	0.051	0.51	04/05/12
Chromium	7440-47-3	LA-505-412		9.91		mg/kg	1	0.10	1.0	04/05/12
Cobalt	7440-48-4	LA-505-412		5.74		mg/kg	1	0.051	0.25	04/05/12
Copper	7440-50-8	LA-505-412		14.8		mg/kg	1	0.10	1.0	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## WSCF Analytical Results Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

Sample # 120413008  
 SAF# F11-146  
 Sample ID B2H1V2

Matrix OTHERSOLID  
 Sampled 03/26/12  
 Received 03/26/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
<b>Anions by IC</b>										<b>04/02/12</b>
<b>Anions by IC</b>										
Chloride	16887-00-6	LA-533-410	B	16.8		mg/kg	1	2.9	20	04/02/12
Sulfate	14808-79-8	LA-533-410		269		mg/kg	1	5.5	52	04/02/12
<b>Cr(VI) Prep</b>										<b>04/02/12</b>
<b>Cr(VI)</b>										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.189		ug/g	1	0.095	0.47	04/03/12
<del><b>ICPMS Prep</b></del>										<del><b>03/27/12</b></del>
<del><b>ICP-MS</b></del>										
Manganese	7439-96-5	LA-505-412	N	464		mg/kg	1	0.098	0.98	04/05/12
Nickel	7440-02-0	LA-505-412		9.74		mg/kg	1	0.098	0.98	04/05/12
Silver	7440-22-4	LA-505-412	U	<0.049		mg/kg	1	0.049	0.49	04/05/12
Antimony	7440-36-0	LA-505-412		21.2		mg/kg	1	0.29	2.9	04/05/12
Barium	7440-39-3	LA-505-412		94.1		mg/kg	1	0.20	2.0	04/05/12
Beryllium	7440-41-7	LA-505-412	B	0.248		mg/kg	1	0.098	0.98	04/05/12
Cadmium	7440-43-9	LA-505-412	B	0.107		mg/kg	1	0.049	0.49	04/05/12
Chromium	7440-47-3	LA-505-412		15.0		mg/kg	1	0.098	0.98	04/05/12
Cobalt	7440-48-4	LA-505-412		7.32		mg/kg	1	0.049	0.24	04/05/12
Copper	7440-50-8	LA-505-412		44.3		mg/kg	1	0.098	0.98	04/05/12

MDL = Minimum Detection Limit  
 RQ = Result Qualifier  
 TP Err = Total Propagated Error  
 DF = Dilution Factor  
 + - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)  
 C - Analyte was found in the Associated Blank. (Inorganic)  
 D - Analyte was reported at a secondary dilution factor.  
 E - Analyte is an estimate, see comment section.  
 N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.  
 X,Y or Z - See comment detail and/or narrative.  
 PQL is equivalent to Estimated Quantitation Limit (EQL)

## **Appendix 4**

### Laboratory Narrative and Chain-of-Custody Documentation

### Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Master Contract 39818, Revision 3, "Laboratory Analytical Services to CHPRC Soil and Groundwater Remediation Project."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

### Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

### Inorganic Comments

**Anions** – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2  
**Narrative**  
WSCF120798

**Hexavalent Chromium** – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

**ICP-MS Metals** – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Vanadium and Copper – Detected in the Blank and evaluated. No sample results in this batch were affected. “C” Flags not required.
- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-220	PAGE 1 OF 2
COLLECTOR Frank Hall		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 9		PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO. (N/A)		FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			
MATRIX* A-Air DL=Drum L=Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water W1=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool--4C	Cool--4C	Cool--4C	None	
		HOLDING TIME	6 Months	30 Days	28 Days/48 Hours	6 Months	
		TYPE OF CONTAINER	G/P	G/P	G/P	G/P	
		NO. OF CONTAINER(S)	1	1	1	1	
		VOLUME	120mL	60mL	60mL	120mL	
SPECIAL HANDLING AND/OR STORAGE  120798		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS 2007	Chromium Hex - 7199;	IC Anions - 200.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2L1D4	1 OTHER SOLID	JUN 19 2012	0949	✓	✓	✓	Qd 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	C Johnson	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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Sample Receipt

Chain of Custody

CH2MHIII Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-220	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KF Concrete Sample 9	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
ICE CHEST NO. <b>(N/A)</b>	FIELD LOGBOOK NO. <b>HNF-N-507.25</b>	ACTUAL SAMPLE DEPTH <b>SURFACE</b>	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GK1 applies to this SAF. <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p>(2) <del>Gross Alpha (Gross alpha); Gross Beta (Gross beta);</del></p> <p style="text-align: center;"><i>JH</i> <i>3/26/12</i></p>						

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A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-223	PAGE 1 OF 2
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, SJ		<b>PRICE CODE</b> 9C <b>DATA TURNAROUND</b> 15 Days / 15 Days
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 10		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>AIR QUALITY</b> <input type="checkbox"/>
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N-507.25		<b>ACTUAL SAMPLE DEPTH</b> SURFACE		<b>COA</b> 302548E510	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A			<b>BILL OF LADING/AIR BILL NO.</b> N/A		
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=OI S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>		Cool-4C	Cool-4C	Cool-4C	None
		<b>HOLDING TIME</b>		6 Months	70 Days	78 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>		1	1	1	1
		<b>VOLUME</b>		120mL	60mL	60mL	120mL
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
B2L1D7	2 OTHER SOLID	JUN 19 2012	0850	✓	✓	✓	

PH 3/20/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	Conner	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A 6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-223	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 10	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. INF-N-507.25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548F510	METHOD OF SHIPMENT GOVERNMENT VEHICLE	<b>ORIGINAL</b>	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p>(2) <del>Gross Alpha {Gross alpha}; Gross Beta {Gross beta};</del></p> <p style="text-align: right;"><i>2/19/2012</i></p>						

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A-6003-618 (RFV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-226	PAGE 1 OF 2
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, SJ		<b>PRICE CODE</b> 9C
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 11		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146	<b>DATA TURNAROUND</b> 15 Days / 15 Days	
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N-507-25	<b>ACTUAL SAMPLE DEPTH</b> SURFACE		<b>COA</b> 302548ES10	<b>ATR QUALITY</b> <input type="checkbox"/>	<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>BILL OF LADING/AIR BILL NO.</b> N/A			
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>	Cool-4C	Cool-4C	Cool-4C	None	
		<b>HOLDING TIME</b>	6 Months	30 Days	28 Days/48 Hours	6 Months	
		<b>TYPE OF CONTAINER</b>	G/P	G/P	G/P	G/P	
		<b>NO. OF CONTAINER(S)</b>	1	1	1	1	
		<b>VOLUME</b>	120mL	60mL	60mL	120mL	
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (4) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
BZL1FO 3	OTHER SOLID	JUN 19 2012	0921	✓	✓	✓	

9# 6/11/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	C. Johnson	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY			<b>TITLE</b>	<b>DATE/TIME</b>
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD			<b>DISPOSED BY</b>	<b>DATE/TIME</b>

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-226	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 11	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p><del>(2) Gross Alpha - (Gross alpha); Gross Beta - (Gross beta);</del> <i>94 6/14/12</i></p>						

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A 6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-229	PAGE 1 OF 2	
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, NJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, NJ		<b>PRICE CODE</b> 9C	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 12		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>AIR QUALITY</b> <input type="checkbox"/>	
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N-		<b>ACTUAL SAMPLE DEPTH</b> Surface	<b>COA</b> 302548ES10		<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A			<b>BILL OF LADING/AIR BILL NO.</b> N/A			
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>		Cool-4C	Cool-4C	Cool-4C	None
			<b>HOLDING TIME</b>		6 Months	30 Days	78 Days/48 Hours	6 Months
			<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
			<b>NO. OF CONTAINER(S)</b>		1	1	1	1
			<b>VOLUME</b>		120mL	60mL	60mL	120mL
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 2196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>					
B2L1F3	4 OTHER SOLID	JUN 19 2012	0933					

9A 6/11/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	C. Johns	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	TITLE		DATE/TIME	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A-6003-618 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-229	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 12	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581.0** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.00**                  In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};  <del>(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};</del></p> <p style="text-align: center;"><i>qh 6/14/12</i></p>						

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A-6003-618 (RPV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-214	PAGE 1 OF 2
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 7		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete				<b>SAF NO.</b> F11-146	
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N- 50725		<b>ACTUAL SAMPLE DEPTH</b> SURFACE		<b>COA</b> 302548E510	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A				<b>BILL OF LADING/AIR BILL NO.</b> N/A	
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>		Cool-4C	Cool-4C	Cool-4C	None
		<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>		1	1	1	1
		<b>VOLUME</b>		120mL	60mL	60mL	120mL
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	IC Anions - 300 0 (Chloride, Sulfate)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
B2H1V8	5 OTHER SOLID	JUN 19 2012	0810	✓	✓	✓	OH 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	C. Johnson	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	TITLE		DATE/TIME	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST			F11-146-214	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KF Concrete Sample 7	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507.25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548E510	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/> ** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> **</p> <p>In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p><del>(2) Gross Alpha (Gross alpha), Gross Beta (Gross beta);</del> 94 6/14/12</p>						

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-217	PAGE 1 OF 2
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, SJ		<b>PRICE CODE</b> 9C
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 8		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>DATA TURNAROUND</b> 15 Days / 15 Days
<b>ICE CHEST NO.</b> (N/A)		<b>FIELD LOGBOOK NO.</b> HNF-N-50725		<b>ACTUAL SAMPLE DEPTH</b> SURFACE	<b>COA</b> 302548ES10		<b>AIR QUALITY</b> <input type="checkbox"/>
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>BILL OF LADING/AIR BILL NO.</b> N/A			
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>		Cool--4C	Cool--4C	Cool--4C	None
		<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>		1	1	1	1
		<b>VOLUME</b>		120mL	60mL	60mL	120mL
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196:	IC Anions - 300.0 (Chloride, Sulfate):	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b> B2H1W1	<b>MATRIX*</b> 6 OTHER SOLID	<b>SAMPLE DATE</b> JUN 19 2012	<b>SAMPLE TIME</b> 0836				QA 3/12/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
Frank Hall	JUN 19 2012 1040	C Johnson	JUN 19 2012 1040		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b>	<b>TITLE</b>		<b>DATE/TIME</b>	
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>		<b>DATE/TIME</b>	

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A-6003-618 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-217	PAGE 2 OF 2
COLLECTOR Frank Hall	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 8	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-507-25	ACTUAL SAMPLE DEPTH SURFACE	COA 302548E510	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>** The CACN for all analytical work at WSCF laboratory is 402581.□** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□** In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>(1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p>(2) <del>Gross Alpha (Gross alpha); Gross Beta (Gross beta);</del></p> <p style="text-align: center;"><i>GH</i> <i>3/26/12</i></p>						

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A-6003-618 (REV 2)



THE LEADER IN ENVIRONMENTAL TESTING

## CASE NARRATIVE

CH2MHill Plateau Remediation Company  
 P.O. Box 1600  
 MS B3-60  
 Richland, Washington 99352  
 July 06, 2012  
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

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SDG	: SL1276
Number of Samples	: sample
Sample Matrix	: Solid
Data Deliverable	: Summary
Date SDG Closed	: June 22, 2012

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## II. Introduction

On June 22, 2012, a solid sample was received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-146

## III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

## IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**CH2M Hill Plateau Remediation Company**

July 06, 2012

SDG: SL1276

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

## ICPMS Metals

**Batch: 2177017**

The MS recovery for Manganese is outside the established QC limits. The RPD value is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery. This analyte has been qualified accordingly with an "N" flag in the associated sample.

**Affected Samples:**

F2F220422 (1): B2L1H0

## Mercury

**Batch: 2178013**

The MS and MSD recoveries for Mercury are outside the established QC limits. The RPD value is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery. This analyte has been qualified accordingly with an "N" flag in the associated sample.

**Affected Samples:**

F2F220422 (1): B2L1H0

## Ion Chromatography

**Batch: 2177133**

The associated sample was analyzed at dilution for Sulfate, due to high concentrations of the target analyte, for Sulfate in batch 2177133. The reporting limit has been adjusted only for the target reported from the dilution. The analyte has been qualified accordingly with a "D" flag in the associated sample.

**Affected Samples:**

F2F220422 (1): B2L1H0

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## **CH2M Hill Plateau Remediation Company**

July 06, 2012

SDG: SL1276

TestAmerica Laboratories, Inc.

**Batch: 2177132**

The Anion Matrix Spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recovery for Chloride is attributed to matrix interference. The analyte has been qualified with an "N" flag in the associated sample.

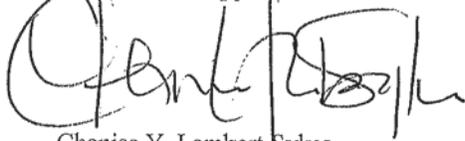
**Affected Samples:**

F2F220422 (1): B2L1H0

There were no observations or nonconformances for the following methods: ICPMS - Antimony

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Chenise Y. Lambert-Sykes  
St. Louis Project Manager

SL1276 CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-236	PAGE 1 OF 1
COLLECTOR Frank Hall <i>Cul 050</i>	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 14	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. <i>LWS-189-02</i>	FIELD LOGBOOK NO. <i>HNF-N-507-25</i>	ACTUAL SAMPLE DEPTH <i>SURFACE</i>	COA 302548ES10	METHOD OF SHIPMENT FEDERAL EXPRESS		<b>ORIGINAL</b>
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING/AIR BILL NO. <i>7937 0673 1907</i>				

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>		Cool~4C	Cool~4C
		<b>HOLDING TIME</b>		6 Months	28 Days/48 Hours
		<b>TYPE OF CONTAINER</b>		G/P	G/P
		<b>NO. OF CONTAINER(S)</b>		1	1
		<b>VOLUME</b>		120mL	60mL
<b>SPECIAL HANDLING AND/OR STORAGE</b> RADIOACTIVE TIE TO: B2L1H2		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	IC Anions - 300.0 (Chloride, Sulfate);
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>		
B2L1H0	OTHER SOLID	JUN 19 2012	0850	✓	✓

*43 1B5*

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM Frank Hall	DATE/TIME JUN 19 2012	RECEIVED BY/STORED IN <i>SSU#1</i>	DATE/TIME JUN 19 2012	<b>SPECIAL INSTRUCTIONS</b> ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies. (1) ICP Metals - 6020 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP Metals - 6020 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; Mercury - 7471 - (CV);	
RELINQUISHED BY/REMOVED FROM <i>SSU#1</i>	DATE/TIME 6-21-12 0730	RECEIVED BY/STORED IN <i>DW BREWSTER</i>	DATE/TIME 6/21/12 0830		
RELINQUISHED BY/REMOVED FROM <i>DW BREWSTER</i>	DATE/TIME 6-21-12 1400	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME 6/21/12 0930		
RELINQUISHED BY/REMOVED FROM <i>FEDEX</i>	DATE/TIME	RECEIVED BY/STORED IN <i>THE HOLDAS</i>	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

### Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

### Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

### Inorganic Comments

**Anions** – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2  
**Narrative**  
WSCF120413

**Hexavalent Chromium** – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

**ICP-MS Metals** – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Manganese and Selenium – Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were “N” flagged.
- Vanadium and Chromium – Detected in the Blank and evaluated. Affected sample results in this batch were “C” Flagged.
- All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

<b>CH2MHill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				F11-146-196	PAGE 1 OF 2			
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ				
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 1		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>PRICE CODE</b> 9C <b>AIR QUALITY</b> <input type="checkbox"/>			
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N507-34		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>COA</b> 302548ES10				
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A			<b>BILL OF LADING/AIR BILL NO.</b> N/A					
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WL=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radicactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>				Cool-4C   Cool-4C   Cool-4C   None			
			<b>HOLDING TIME</b>				6 Months   30 Days   28 Days/48 Hours   6 Months			
			<b>TYPE OF CONTAINER</b>				G/P   G/P   G/P   G/P			
			<b>NO. OF CONTAINER(S)</b>				1   1   1   1			
			<b>VOLUME</b>				120mL   60mL   60mL   120mL			
<b>SPECIAL HANDLING AND/OR STORAGE</b>			<b>SAMPLE ANALYSTS</b>							
120413			SEE ITEM (1) IN SPECIAL INSTRUCTIONS		Chromium Hex 7106;		IC Anions - 300.0 (Chloride, Sulfate);			
<b>SAMPLE NO.</b>		<b>MATRIX*</b>		<b>SAMPLE DATE</b>		<b>SAMPLE TIME</b>				
B2H111		OTHER SOLID		MAR 26 2012		1115				

QA  
3/26/12

<b>CHAIN OF POSSESSION</b>		<b>SIGN/ PRINT NAMES</b>		<b>SPECIAL INSTRUCTIONS</b>	
RELINQUISHED BY/REMOVED FROM DJ Sparks		DATE/TIME MAR 26 2012 1240		RECEIVED BY/STORED IN [Signature]	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
<b>LABORATORY SECTION</b>		<b>RECEIVED BY</b>		<b>TITLE</b>	
<b>FINAL SAMPLE DISPOSITION</b>		<b>DISPOSAL METHOD</b>		<b>DISPOSED BY</b>	

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A-6003-G18 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-196	PAGE 2 OF 2
CONTACTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
FIELD LOCATION KE Concrete Sample 1	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
TEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548E510	METHOD OF SHIPMENT GOVERNMENT VEHICLE		ORIGINAL
TESTED TO Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

ADDITIONAL INSTRUCTIONS

The CACN for all analytical work at WSCF laboratory is 402581.□□\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□\*\* In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the AF for all analyses except Special Studies.

ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Boron, Bismuth, Cadmium, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury}; ~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~

*SA 3/26/12*

ISSUED ON 3/13/2012

A-6003 618 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-199	PAGE 1 OF 2
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 2		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete				<b>PRICE CODE</b> 9C	
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N-507-24		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>SAF NO.</b> F11-146	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A				<b>BILL OF LADING/AIR BILL NO.</b> N/A	
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>		<b>DATA TURNAROUND</b> 15 Days / 15 Days	
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>HOLDING TIME</b>		Cool~4C	Cool~4C	Cool~4C	<b>ORIGINAL</b>
		<b>TYPE OF CONTAINER</b>		6 Months	30 Days	28 Days/48 Hours	
		<b>NO. OF CONTAINER(S)</b>		G/P	G/P	G/P	
		<b>VOLUME</b>		1	1	1	
		<b>SAMPLE ANALYSIS</b>		120mL	60mL	60mL	
				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Max - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
B2H114	2 OTHER SOLID	MAR 26 2012	1118	✓	✓	✓	94 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks CHPRC	MAR 26 2012	[Signature]	MAR 26 2012		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	TITLE		DATE/TIME	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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A-6003-618 (RFV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-199	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 83.2KE Concrete Sample 2	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	ORIGINAL
FIELD CHEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPMENT TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

SPECIAL INSTRUCTIONS

\* The CACN for all analytical work at WSCF laboratory is 402581. □\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□\*\*  
 In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 the SAF for all analyses except Special Studies.

1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
 Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};

2) ~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~ *OK 3/26/12*

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-232	PAGE 1 OF 2	
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ		
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 13		<b>PROJECT DESIGNATION</b> 183 KF/KW Water Treatment Plant - Concrete				<b>SAF NO.</b> F11-146		
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N-807-24		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>COA</b> 302548ES10		
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>BILL OF LADING/AIR BILL NO.</b> N/A				
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>		Cool=4C	Cool=4C	Cool=4C	None
			<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 HOURS	6 Months
			<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
			<b>NO. OF CONTAINER(S)</b>		1	1	1	1
			<b>VOLUME</b>		120ml	60ml	60ml	120ml
			<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>			
				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196;	IC Anions - 306.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>					
B2L1F6 3	OTHER SOLID	MAR 26 2012	1135	✓	✓	✓		

*Out 3/20/12*

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks	MAR 26 2012 1240	<i>[Signature]</i>	MAR 26 2012 1240		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b>	<b>TITLE</b>		<b>DATE/TIME</b>	
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>		<b>DATE/TIME</b>	

PRINTED ON 3/13/2012

A-0003-G18 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-232	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION B1.2KE Concrete Sample 13	PROJECT DESIGNATION 1B3 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
FIELD CHEST NO.	FIELD LOGBOOK NO. MNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPMENT TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

SPECIAL INSTRUCTIONS

\* The CACN for all analytical work at WSCF laboratory is 402581.  \*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.   \*\*  
 In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 the SAF for all analyses except Special Studies.

1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
 Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};

2) ~~Gross Alpha {Gross alpha}; Gross Beta {Gross beta};~~

*JK*  
*3/26/12*

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A-6003-618 (RFV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-202	PAGE 1 OF 2	
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, NJ		<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, NJ		<b>PRICE CODE</b> 9C <b>AIR QUALITY</b> <input type="checkbox"/>	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 3		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete			<b>SAF NO.</b> F11-146		<b>DATA TURNAROUND</b> 15 Days / 15 Days	
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> rNF -N-507-24		<b>ACTUAL SAMPLE DEPTH</b> Surface		<b>COA</b> 302548ES10		
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A			<b>BILL OF LADING/AIR BILL NO.</b> N/A			
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>		Cool--4C	Cool--4C	Cool--4C	None
			<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 Hours	6 Months
			<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
			<b>NO. OF CONTAINER(S)</b>		1	1	1	1
			<b>VOLUME</b>		120mL	60mL	60mL	120mL
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - /196;	TC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>					
B2H117 4	OTHER SOLID	MAR 26 2012	1135	✓	✓	✓		

198  
3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks	MAR 26 2012	[Signature]	MAR 26 2012 1240		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<b>LABORATORY SECTION</b>	RECEIVED BY	<b>TITLE</b>		<b>DATE/TIME</b>	
<b>FINAL SAMPLE DISPOSITION</b>	DISPOSAL METHOD	<b>DISPOSED BY</b>		<b>DATE/TIME</b>	

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-202	PAGE 2 OF 2
LECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
PLING LOCATION 2KE Concrete Sample 3	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	<b>ORIGINAL</b>	
TEST NO.	FIELD LOGBOOK NO. HNF-N-507-24-	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
IPED TO ite Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			

ADDITIONAL INSTRUCTIONS

The CACN for all analytical work at WSCF laboratory is 402581.00\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.00\*\*  
 In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume "gram" weight as listed on the Field Sampling Requirements portion of  
 SAF for all analyses except Special Studies.

ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
 Bismuth, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};  
~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~

*QA  
3/26/12*

ISSUED ON 3/13/2012

A-6003-618 (REV 2)

Chain of Custody

<b>CH2MHill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>F11-146-239</b>	<b>PAGE 1 OF 2</b>				
<b>COLLECTOR</b> DAN SPARKS /CHPRC		<b>COMPANY CONTACT</b> TRENT, SJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, SJ					
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 15		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete		<b>SAF NO.</b> F11-146		<b>PRICE CODE</b> 9C					
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N-507 24		<b>ACTUAL SAMPLE DEPTH</b> N/A		<b>AIR QUALITY</b> <input type="checkbox"/>					
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>COA</b> 302548ES10		<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE					
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>PRESERVATION</b>		<b>DATA TURNAROUND</b> 15 Days / 15 Days					
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>		Cool--4C	Cool--4C	Cool--4C	<b>ORIGINAL</b>				
				None							
				6 Months	30 Days	28 Days/48 Hours					
				G/P	G/P	G/P					
				1	1	1					
				120mL	60mL	60mL					
				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium hex + 7196;	IC Anions - 300.0 (Chloride, Sulfate);					
<b>SAMPLE NO.</b>		<b>MATRIX*</b>		<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>						
B2L1H3 5		OTHER SOLID		3/26/12	1050	<table border="1"> <tr> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> </table>		✓	✓	✓	
✓	✓	✓									

9th 3/26/12

<b>CHAIN OF POSSESSION</b>		<b>SIGN/ PRINT NAMES</b>		<b>SPECIAL INSTRUCTIONS</b>	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
D. Sparks/CHPRC		3/26/12		D. Brennan/Hill	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN	
<b>LABORATORY SECTION</b>		<b>RECEIVED BY</b>		<b>TITLE</b>	
<b>FINAL SAMPLE DISPOSITION</b>		<b>DISPOSAL METHOD</b>		<b>DISPOSED BY</b>	

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-239	PAGE 2 OF 2
COLLECTOR <i>DAN SPARKS/CHPRC</i>	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION B3.2KE Concrete Sample 15	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		ORIGINAL
FIELD LOGBOOK NO. <i>HNF-N-507 24</i>	ACTUAL SAMPLE DEPTH <i>N/A</i>	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE			
OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A					
<p><b>SPECIAL INSTRUCTIONS</b></p> <p>The CACN for all analytical work at WSCF laboratory is 402581. <input type="checkbox"/>** The 100 Area S&amp;GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/>** In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.</p> <p>ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8_HG - ICPMS {Mercury};</p> <p><del>Gross Alpha {Gross alpha}; Gross Beta {Gross beta};</del></p> <p style="text-align: center;"><i>QA 3/24/12</i></p>						

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A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST				F11-146-205	PAGE 1 OF 2			
COLLECTOR DJ Sparks CHPHC		COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373 5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days			
SAMPLING LOCATION 183.2KE Concrete Sample 4		PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146		AIR QUALITY <input type="checkbox"/>	ORIGINAL			
ICE CHEST NO.		FIELD LOGBOOK NO. HNF -N-507-24	ACTUAL SAMPLE DEPTH Surface		COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE				
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A						
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		PRESERVATION	Cool-4C	Cool-4C	Cool-4C	None			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium hex - 7196;	IC Anions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS			
HOLDING TIME		TYPE OF CONTAINER		NO. OF CONTAINER(S)		VOLUME				
G Months		G/P		1		120mL				
30 Days		G/P		1		60mL				
28 Days/48 Hours		G/P		1		60mL				
6 Months		G/P		1		120mL				
SAMPLE NO. B2H1T9		MATRIX* OTHER SOLID	SAMPLE DATE MAR 26 2012	SAMPLE TIME 1140	<table border="1"> <tr> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </table>			✓	✓	✓
✓	✓	✓								

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/ REMOVED FROM DJ Sparks	DATE/TIME MAR 26 2012	RECEIVED BY/ STORED IN Bureau	DATE/TIME MAR 26 2012	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
RELINQUISHED BY/ REMOVED FROM	DATE/TIME	RECEIVED BY/ STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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Sample Receipt

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-205	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 33.2KE Concrete Sample 4	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE <b>ORIGINAL</b>	
FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	BILL OF LADING/AIR BILL NO. N/A			
SHIPMENT TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A					

SPECIAL INSTRUCTIONS

The CACN for all analytical work at WSCF laboratory is 402581.00\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.00\*\* the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.

ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};

~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~

*JH*  
*3/26/12*

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A-6003-618 (REV 2)

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-146-211	PAGE 1 OF 2
<b>COLLECTOR</b> DJ Sparks CHPRC		<b>COMPANY CONTACT</b> TRENT, NJ		<b>TELEPHONE NO.</b> 373-5869		<b>PROJECT COORDINATOR</b> TRENT, NJ	
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 6		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete				<b>PRICE CODE</b> 9C	
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF - N-507- <u>24</u>		<b>ACTUAL SAMPLE DEPTH</b> <u>Surface</u>		<b>DATA TURNAROUND</b> 15 Days / 15 Days	
<b>SHIPPED TO</b> Waste Sampling & Characterization		<b>OFFSITE PROPERTY NO.</b> N/A		<b>COA</b> 302548ES10		<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE	
<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		<b>BILL OF LADING/AIR BILL NO.</b> N/A		<b>ORIGINAL</b>	
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>PRESERVATION</b>		Cool-4C	Cool-4C	Cool-4C	N/A
		<b>HOLDING TIME</b>		6 Months	30 Days	28 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>		G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>		1	1	1	1
		<b>VOLUME</b>		120mL	60mL	60mL	120mL
		<b>SAMPLE ANALYSIS</b>		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	IC Arions - 300.0 (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>				
B2H1V5	OTHER SOLID	MAR 26 2012	1200	✓	✓	✓	9H 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS	
DJ Sparks	MAR 26 2012	[Signature]	MAR 26 2012		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

PRINTED ON 3/13/2012

A-6003-G18 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-211	PAGE 2 OF 2
LECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
PLING LOCATION 2KE Concrete Sample 6	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>		
CHEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
MPED TO Site Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A			

SPECIAL INSTRUCTIONS

The CACN for all analytical work at WSCF laboratory is 402581. \*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. \*\*  
 In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 SAF for all analyses except Special Studies.  
 ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic,  
 Bismuth, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};  
~~Gross Alpha (Gross alpha); Gross Beta (Gross beta);~~

*JA 3/26/12*

ISSUED ON 3/13/2012

A-6003-618 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-208	PAGE 1 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ		PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 183.2KE Concrete Sample 5	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete	FIELD LOGBOOK NO. HNF -N-507-24	ACTUAL SAMPLE DEPTH Surface	SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE <b>ORIGINAL</b>
ICE CHEST NO.	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				
SHIPPED TO Waste Sampling & Characterization						

MATRIX* A=Air DL=Drum L=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>	Cool-4C	Cool-4C	Cool-4C	None
		<b>HOLDING TIME</b>	6 Months	30 Days	28 Days/48 Hours	6 Months
		<b>TYPE OF CONTAINER</b>	G/P	G/P	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>	1	1	1	1
	<b>SPECIAL HANDLING AND/OR STORAGE</b>	<b>VOLUME</b>	120mL	60mL	60mL	120mL
		<b>SAMPLE ANALYSIS</b>	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7136;	3C Anions 300 D (Chloride, Sulfate);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2H1V2	OTHER SOLID	MAR 26 2012	1155	✓	✓	✓	

9 1/2 3/26/12

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM DJ Sparks CHPRC	DATE/TIME MAR 26 2012	RECEIVED BY/STORED IN <i>[Signature]</i>	DATE/TIME MAR 26 2012 1240	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 3/13/2012 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHIII Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-146-208	PAGE 2 OF 2
COLLECTOR DJ Sparks CHPRC	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 9C	DATA TURNAROUND 15 Days / 15 Days	
SAMPLING LOCATION 183.2KE Concrete Sample 5	PROJECT DESIGNATION 183 KE/KW Water Treatment Plant - Concrete		SAF NO. F11-146	AIR QUALITY <input type="checkbox"/>	ORIGINAL	
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-507-24	ACTUAL SAMPLE DEPTH Surface	COA 302548ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A				

SPECIAL INSTRUCTIONS

\* The CACN for all analytical work at WSCF laboratory is 402581.□\*\* The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□\*\*  
 n the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of  
 he SAF for all analyses except Special Studies.

- 1) ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Silver, Vanadium, Zinc}; ICP/MS - 200.8 (Add-on) {Arsenic, Iridium, Boron, Lead, Molybdenum, Selenium, Strontium, Tin, Uranium}; 200.8\_HG - ICPMS {Mercury};
- 2) ~~Gross Alpha {Gross alpha}; Gross Beta {Gross beta};~~

*9/4  
3/26/12*



## Certificate of Analysis

TestAmerica Laboratories, Inc.

CH2M Hill Plateau Remediation Company  
 P.O. Box 1600  
 Mail Stop – R3-60  
 Richland, WA 99352

June 28, 2012

Attention: Scot Fitzgerald

---

SAF Number	:	F11-146
Date SDG Closed	:	June 21, 2012
Number of Samples	:	One (1)
Sample Type	:	Other Solid
SDG Number	:	W06455
Data Deliverable	:	15 Day / 15 Day Summary

---

### CASE NARRATIVE

#### **I. Introduction**

On June 21, 2012 one other solid sample was received at TestAmerica (TARL). Upon receipt, the sample was assigned the following laboratory ID numbers to correspond with the CH2M specific ID:

<u>CH2M ID#</u>	<u>TARL ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B2L1F9	MT9CC	OTHER SOLID	6/21/12

#### **II. Sample Receipt**

The sample was received in good condition and no anomalies were noted during check-in.

#### **III. Analytical Results/Methodology**

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

CH2M Hill Plateau Remediation Company  
June 28, 2012

---

The requested analyses were:

**Chemical Analysis**

Hexavalent Chromium by EPA method 7196A

**IV. Quality Control**

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

**V. Comments**

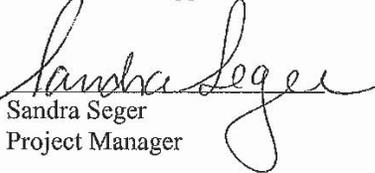
**Chemical Analysis**

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (B2L1F9) and sample matrix spike (B2L1F9) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

  
Sandra Seger  
Project Manager

<b>CH2MHill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>			<b>F11-146-235</b>	<b>PAGE 1 OF 1</b>
<b>COLLECTOR</b> Frank Hall		<b>COMPANY CONTACT</b> TRENT, SJ	<b>TELEPHONE NO.</b> 373-5869	<b>PROJECT COORDINATOR</b> TRENT, SJ	<b>PRICE CODE</b> 9C	<b>DATA TURNAROUND</b> 15 Days / 15 Days
<b>SAMPLING LOCATION</b> 183.2KE Concrete Sample 14		<b>PROJECT DESIGNATION</b> 183 KE/KW Water Treatment Plant - Concrete		<b>SAF NO.</b> F11-146	<b>AIR QUALITY</b> <input type="checkbox"/>	
<b>ICE CHEST NO.</b>		<b>FIELD LOGBOOK NO.</b> HNF-N-507-25	<b>ACTUAL SAMPLE DEPTH</b> SURFACE	<b>COA</b> 302548ES10	<b>METHOD OF SHIPMENT</b> GOVERNMENT VEHICLE <b>ORIGINAL</b>	
<b>SHIPPED TO</b> TestAmerica Incorporated, Richland		<b>OFFSITE PROPERTY NO.</b> N/A		<b>BILL OF LADING/AIR BILL NO.</b> N/A		

<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>	Cool~4C	None
		<b>HOLDING TIME</b>	30 Days	6 Months
		<b>TYPE OF CONTAINER</b>	G/P	G/P
		<b>NO. OF CONTAINER(S)</b>	1	1
		<b>VOLUME</b>	60mL	60mL
		<b>SPECIAL HANDLING AND/OR STORAGE</b> RADIOACTIVE TIE TO: B2L1H2	<b>SAMPLE ANALYSIS</b>	Chromium Hex - 7196;
<b>SAMPLE NO.</b>	<b>MATRIX*</b>	<b>SAMPLE DATE</b>	<b>SAMPLE TIME</b>	
B2L1F9	OTHER SOLID	JUN 19 2012	0230	✓

9th 6/11/12

506-w06455  
Jaf210478 MT9CC  
Due 8-1-12 SKS 6/22/12  
7/9/12



J2F210478

<b>CHAIN OF POSSESSION</b>		<b>SIGN/ PRINT NAMES</b>		<b>SPECIAL INSTRUCTIONS</b> This is a split sample, Thorium-232 will only be analyzed if gross alpha comes back high; ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** In the event that there is limited sample material, the field NCOs are instructed to provide the minimum volume gram weight as listed on the Field Sampling Requirements portion of the SAF for all analyses except Special Studies.
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
Frank Hall	JUN 19 2012 1045	SSU#1	JUN 19 2012 1045	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
SSU#1	6-21-12 0730	Brotherhood	6-21-12 0730	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
Brotherhood	6-21-12 1035	Michael...	6-21-12	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b>	<b>TITLE</b>		<b>DATE/TIME</b>
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>		<b>DATE/TIME</b>

## **Appendix 5**

### Data Validation Supporting Documentation

**Data Validation for Chemical Analyses**

Published Date: 08/16/10

Effective Date: 08/16/10

VALIDATION LEVEL:	A	B	<input checked="" type="radio"/> C	D	E
PROJECT: 100-K			DATA PACKAGE: VSR12-017		
VALIDATOR: Ken Salaz		LAB: WSCF & TASL		DATE: 7/11/12	
			SDG: WSCF120798, SL1276, WSCF120413, WO6455		
ANALYSES PERFORMED					
Anions/IC X	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI X	pH	NO <sub>3</sub> /NO <sub>2</sub>
Sulfate	TDS	TKN	Phosphate		
SAMPLES/MATRIX Other Solid Samples					
SDG WSCF120798: B2L1D4, B2L1D7, B2L1F0, B2L1F3, B2H1V8, B2H1W1					
SDG SL1276: B2L1H0 (split of B2L1D7)					
SDG WSCF120413: B2H111, B2H114, B2L1F6, B2H117, B2L1H3 (EB), B2H1T9, B2H1V5, B2H1V2					
SDG WO6455: B2L1F9 (split of B2L1D7)					

**1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE**

Technical verification documentation present?..... Yes  No N/A

Comments: None

## Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

### 2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? .....	Yes	No	N/A
Initial calibrations acceptable? .....	Yes	No	N/A
ICV and CCV checks performed on all instruments? .....	Yes	No	N/A
ICV and CCV checks acceptable? .....	Yes	No	N/A
Standards traceable? .....	Yes	No	N/A
Standards expired? .....	Yes	No	N/A
Calculation check acceptable? .....	Yes	No	N/A

Comments:

### 3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) .....	Yes	No	N/A
ICB and CCB results acceptable? (Levels D, E) .....	Yes	No	N/A
Laboratory blanks analyzed? .....	Yes	No	N/A
Laboratory blank results acceptable? .....	Yes	No	N/A
Field blanks analyzed? (Levels C, D, E) .....	Yes	No	N/A
Field blank results acceptable? (Levels C, D, E) .....	Yes	No	N/A
Transcription/calculation errors? (Levels D, E) .....	Yes	No	N/A

Comments: \_\_\_ None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? .....	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Spike recoveries acceptable? .....	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Spike standards NIST traceable? (Levels D, E) .....	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Spike standards expired? (Levels D, E) .....	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
LCS/BSS samples analyzed? .....	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
LCS/BSS results acceptable? .....	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Standards traceable? (Levels D, E) .....	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Standards expired? (Levels D, E) .....	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Transcription/calculation errors? (Levels D, E) .....	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Performance audit sample(s) analyzed? .....	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Performance audit sample results acceptable? .....	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A

Comments: \_ None

## Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

### 5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable?..... Yes  No  N/A

Duplicate results acceptable? .....  Yes  No  N/A

MS/MSD standards NIST traceable? (Levels D, E)..... Yes  No  N/A

MS/MSD standards expired? (Levels D, E) ..... Yes  No  N/A

Field duplicate RPD values acceptable? .....  Yes  No  N/A

Field split RPD values acceptable? ..... Yes  No  N/A

Transcription/calculation errors? (Levels D, E)..... Yes  No  N/A

Comments:

SDGs WSCF120798 &amp; WSCF120413: Cr VI RPDs&gt;30%, parent and duplicate results &lt;MDL

### 6. HOLDING TIMES (all levels)

Samples properly preserved?.....  Yes  No  N/A

Sample holding times acceptable? .....  Yes  No  N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses?..... Yes No N/A  
Results supported in the raw data? (Levels D, E) ..... Yes No  N/A  
Samples properly prepared? (Levels D, E) ..... Yes No  N/A  
Detection limits meet RDL?..... Yes No N/A  
Transcription/calculation errors? (Levels D, E) ..... Yes No  N/A

Comments: \_\_ None

**Data Validation for Chemical Analyses**

**Published Date: 08/16/10**

**Effective Date: 08/16/10**

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Comments (attach additional sheets as necessary):

## **Appendix 6**

Additional Documentation Requested By Client

## Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Analytical Batch 203600 (QC Batch: 203599) Test Anions by Ion Chromatography (Solid)  
 Associated Samples 120798001, 120798002, 120798003, 120798004, 120798005, 120798006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #77190</b>								
Chloride	16887-00-6	<0.058		ug/mL					U	06/20/12
Sulfate	14808-79-8	<0.11		ug/mL					U	06/20/12
<b>LCS</b>		<b>QC Sample #77191</b>								
Chloride	16887-00-6	1.80		ug/mL	90.7	90 - 110				06/20/12
Sulfate	14808-79-8	3.67		ug/mL	93.7	90 - 110				06/20/12
<b>MS</b>		<b>QC Sample #77192</b>								
		<b>Original 120788001</b>								
Chloride	16887-00-6	43.9		mg/kg	87.2	80 - 120				06/20/12
Sulfate	14808-79-8	89.0		mg/kg	89.4	80 - 120				06/20/12
<b>MSD</b>		<b>QC Sample #77193</b>								
		<b>Original 120788001</b>								
		<b>Paired 77192</b>								
Chloride	16887-00-6	42.4		mg/kg	83.9	80 - 120	3.20	30		06/20/12
Sulfate	14808-79-8	87.3		mg/kg	87.3	80 - 120	1.60	30		06/20/12
<b>DUP</b>		<b>QC Sample #77194</b>								
		<b>Original 120788001</b>								
Chloride	16887-00-6	4.18		mg/kg			0.70	30	B	06/20/12
Sulfate	14808-79-8	37.0		mg/kg			0.60	30	B	06/20/12

## Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120798

Analytical Batch 203868 (QC Batch: 203867) Test Hexavalent chromium  
 Associated Samples 120798001, 120798002, 120798003, 120798004, 120798005, 120798006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
			<b>QC Sample #77470</b>							
Hexavalent chromium <b>LCS</b>	18540-29-9	<0.10		ug/g					U	06/26/12
			<b>QC Sample #77471</b>							
Hexavalent chromium <b>DUP</b>	18540-29-9	3.47		ug/g	88	80 - 120				06/26/12
			<b>QC Sample #77472</b>							
			<b>Original 120787001</b>							
Hexavalent chromium <b>MS</b>	18540-29-9	<0.099		ug/g			117.40	30	* UX	06/26/12
			<b>QC Sample #77473</b>							
			<b>Original 120787001</b>							
Hexavalent chromium <b>PSTSPK</b>	18540-29-9	3.58		ug/g	89.9	75 - 125				06/26/12
			<b>QC Sample #77474</b>							
Hexavalent chromium <b>IMS</b>	18540-29-9	0.0504		ug/g	100.8	85 - 115				06/26/12
			<b>QC Sample #77475</b>							
			<b>Original 120787001</b>							
Hexavalent chromium	18540-29-9	340		ug/g	75.6	75 - 125				06/26/12

## METHOD BLANK REPORT

## General Chemistry

Client Lot #....: SL1276

Matrix.....: SOLID

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Chloride	ND	Work Order #: MVAN11AA 2.0	mg/kg	MB Lot-Sample #: MCAWW 300.0A	F2F250000-132 06/25/12	2177132
		Dilution Factor: 1				
Sulfate	ND	Work Order #: MVAN41AA 5.0	mg/kg	MB Lot-Sample #: MCAWW 300.0A	F2F250000-133 06/25/12	2177133
		Dilution Factor: 1				

**NOTE (S) :**


---

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

## LABORATORY CONTROL SAMPLE DATA REPORT

## General Chemistry

Client Lot #....: SL1276

Matrix.....: SOLID

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCNT</u> <u>RECVRY</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Chloride	20.0	18.9	mg/kg	95	MCAWW 300.0A	06/25/12	2177132
Work Order #: MVAN11AC LCS Lot-Sample#: F2F250000-132 Dilution Factor: 1							
Sulfate	80.0	79.5	mg/kg	99	MCAWW 300.0A	06/25/12	2177133
Work Order #: MVAN41AC LCS Lot-Sample#: F2F250000-133 Dilution Factor: 1							

**NOTE (S) :**


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

## MATRIX SPIKE SAMPLE DATA REPORT

## General Chemistry

Client Lot #....: SL1276  
 Date Sampled....: 06/19/12

Date Received...: 06/22/12

Matrix.....: SOLID

Perct Moisture: 14

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Chloride	23.5	21.9	48.7 N	mg/kg	115	MCAWW 300.0A	06/25/12	2177132
			Work Order #....: MT9JV1CK		MS Lot-Sample #: F2F220422-001			
			Dilution Factor: 1					
Sulfate	204	438	649	mg/kg	102	MCAWW 300.0A	06/25/12	2177133
			Work Order #....: MT9JV1CL		MS Lot-Sample #: F2F220422-001			
			Dilution Factor: 10					

**NOTE (S) :**

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

N Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

## SAMPLE DUPLICATE EVALUATION REPORT

## General Chemistry

Client Lot #....: F2F220422

Work Order #....: MT9JV-SMP  
MT9JV-DUP

Matrix.....: SOLID

Date Sampled....: 06/19/12

Date Received...: 06/22/12

% Moisture.....: 8.7

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Chloride	23.5 N	24.4 N	mg/kg	3.7	(0-20)	SD Lot-Sample #: F2F220422-001 MCAWW 300.0A	06/25/12	2177132
						Dilution Factor: 1		
Sulfate	204 D	215 D	mg/kg	5.6	(0-20)	SD Lot-Sample #: F2F220422-001 MCAWW 300.0A	06/25/12	2177133
						Dilution Factor: 10		

**NOTE (S) :**

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

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

D Result was obtained from the analysis of a dilution.

## Quality Control Report

Attention Scot Fitzgerald  
 Department Inorganic

Group # WSCF120413

QC Batch 198202 Test Anions by Ion Chromatography (Solid)  
 Associated Samples 120413001, 120413002, 120413003, 120413004, 120413005, 120413006, 120413007, 120413008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>		<b>QC Sample #72498</b>								
Chloride	16887-00-6		<0.058	ug/mL					U	04/02/12
Sulfate	14808-79-8		<0.11	ug/mL					U	04/02/12
<b>LCS</b>		<b>QC Sample #72500</b>								
Chloride	16887-00-6		1.91	ug/mL	96.2	90 - 110				04/02/12
Sulfate	14808-79-8		3.77	ug/mL	96.2	90 - 110				04/02/12
<b>MS</b>		<b>QC Sample #72501</b>								
		<b>Original 120413005</b>								
Chloride	16887-00-6	<2.9	45.2	mg/kg	90.7	80 - 120				04/02/12
Sulfate	14808-79-8	<5.4	90.5	mg/kg	91.8	80 - 120				04/02/12
<b>MSD</b>		<b>QC Sample #72502</b>								
		<b>Original 120413005</b>								
		<b>Paired 72501</b>								
Chloride	16887-00-6	<2.9	46.4	mg/kg	92	80 - 120	2.60	30		04/02/12
Sulfate	14808-79-8	<5.4	93.0	mg/kg	93.1	80 - 120	2.70	30		04/02/12
<b>DUP</b>		<b>QC Sample #72503</b>								
		<b>Original 120413005</b>								
Chloride	16887-00-6	<2.9	<2.9	mg/kg			13.60	30	U	04/02/12
Sulfate	14808-79-8	<5.4	<5.4	mg/kg			0.00	30	U	04/02/12

## Quality Control Report

**Attention** Scot Fitzgerald  
**Department** Inorganic

**Group #** WSCF120413

**QC Batch** 198297 **Test** Hexavalent chromium  
**Associated Samples** 120413001, 120413002, 120413003, 120413004, 120413005, 120413006, 120413007, 120413008

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
<b>BLANK</b>										
			<b>QC Sample #72550</b>							
Hexavalent chromium	18540-29-9		<0.092	ug/g					U	04/03/12
<b>LCS</b>			<b>QC Sample #72551</b>							
Hexavalent chromium	18540-29-9		3.56	ug/g	96.6	80 - 120				04/03/12
<b>DUP</b>			<b>QC Sample #72552</b>							
			<b>Original 120412010</b>							
Hexavalent chromium	18540-29-9		<0.093	ug/g			63.60	30	* UX	04/03/12
<b>MS</b>			<b>QC Sample #72553</b>							
			<b>Original 120412010</b>							
Hexavalent chromium	18540-29-9		3.40	ug/g	91.6	75 - 125				04/03/12
<b>PSTSPK</b>			<b>QC Sample #72554</b>							
Hexavalent chromium	18540-29-9		0.0401	ug/g	80.2	85 - 115				04/03/12
<b>IMS</b>			<b>QC Sample #72555</b>							
			<b>Original 120412010</b>							
Hexavalent chromium	18540-29-9		359	ug/g	92.6	75 - 125				04/03/12

FORM II

Date: 28-Jun-12

DUPLICATE RESULTS

Lab Name: TestAmerica

SDG: W06455

Collection Date: 6/19/2012 8:50:00 AM

Lot-Sample No.: J2F210478-1

Report No. : 52151

Received Date: 6/21/2012 10:35:00 AM

Client Sample ID: B2L1F9

COC No. : F11-146-235

Matrix: OTHER SOLI OTHERSOLID

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2174055	7196_CR6				Work Order: MT9CC1AD	Report DB ID: MT9CC1DR			Orig Sa DB ID: 9MT9CC10			
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	(1.)	6/22/12		2.5	
	1.55E-01	U	RPD	0.0		<del>3.50E-04</del>		N/A			g	

1.55E-01  
SKS 6-28-12

No. of Results: 1    Comments:

TestAmerica    RPD - Relative Percent Difference.  
 rptSTLRchDupV5.    MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
 2.20 A2002    U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

**FORM II**  
**BLANK RESULTS**

Date: 28-Jun-12

Lab Name: TestAmerica  
Matrix: OTHER SOLID

SDG: W06455  
Report No. : 52151

Parameter	Result	Qual	Count Error ( 2 s)	Total Uncert( 2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 2174055	7196_CR6											
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	(1.)	6/22/12		2.5	
						1.55E-01		N/A			g	

No. of Results: 1      Comments:

**FORM II**  
**LCS RESULTS**

Date: 28-Jun-12

Lab Name: TestAmerica  
Matrix: OTHER SOLID

SDG: W06455  
Report No. : 52151

Parameter	Result	Count Qual Error ( 2 s)	Total Uncert( 2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 2174055		7196_CR6		Work Order: MT9G11AC			Report DB ID: MT9G11AS					
HEXCHROME	2.04E+01		0.0E+00	1.55E-01	mg/kg	N/A	2.00E+01		102%	6/22/12	2.5	
							Rec Limits:	80	120	0.0		g

No. of Results: 1      Comments:

**FORM II**  
**MATRIX SPIKE RESULTS**

Date: 28-Jun-12

Lab Name: TestAmerica

SDG: W06455

Lot-Sample No.: J2F210478-1, B2L1F9

Report No. : 52151

Matrix: OTHER SOLI OTHERSOLID

Parameter	SpikeResult, Orig Rst	Count Qual Error (2 s)	Total Uncert( 2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Rec- overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 2174055	Work Order: MT9CC1AC	Report DB ID: MT9CC1CW	Orig Sa DB ID: 9MT9CC10								
HEXCHROME	9.81E+00		0.0E+00	1.55E-01	mg/kg	N/A	81.94%	1.20E+01	6/22/12	2.5	7196_CR6
	1.55E-01									g	

Number of Results: 1

Comments:

TestAmerica RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.  
 rptSTLRchMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.  
 V5.2.20 A2002