REVIEW COMMENT RECORD (RCR)	1. Date 09/08/2011	2. Review No.
	3. Project No.	Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
Data Validation Report for CH2M Hill Plateau Remediation Company: VSR11-050, Project 100K Area AA, Zone 4, Rev. 3	100K Area AA, Zone 4	D. L. Klages	100-K Soil Remediation	(509)942-3947

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date / Organization Manager (optional) (print and sign)	Deanna L. Klages Reviewer/Point of Contact (print and sign) 09/08/2011 Date Deanna L. Klages Author/Originator (print and sign)	Deanna L. Klages Reviewer/Point of Contact (print and sign) 09/08/2011 Date Deanna L. Klages Author/Originator (print and sign)

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
1	No Issues noted.					

CHPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
07/25/2011	
3. Project No.	Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
VSR11-050		Scot Fitzgerald	Analytical Support Group	2753/373-7495

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date: ____ Organization Manager (optional) (print and sign): ____	Scot Fitzgerald Reviewer/Point of Contact (print and sign) 07/25/2011 Date Author/Originator (print and sign)	SLF 8/4/2011 Scot Fitzgerald Reviewer/Point of Contact (print and sign) 7/25 ~~04/27~~/2011 Date Author/Originator (print and sign)

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
	No issues noted.					

REVIEW COMMENT RECORD (RCR)	1. Date 07/27/2011	2. Review No.
	3. Project No.	Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
VSR11-050, Data Validation Report for CHPRC - Project 100K Area AA, Chemical Validation - Level C	S&GRP Sample Data Group (SDG); WSCF112619	JA Edwards	Environmental Quality Assurance (EQA)	2420 Stevens Rm. 345 376-4324

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date: ____ Organization Manager (optional) (print and sign): ____	JA Edwards (Reviewer/Point of Contact (print and sign))	JA Edwards (Reviewer/Point of Contact (print and sign))
	Date: 07/27/2011	Date: 07/27/2011
	Author/Originator (print and sign):	Author/Originator (print and sign):

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
1	There were no issues found in this review	N/A	No additional items found	N	N/A	Closed

Documents:

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009
GRP-GD-002, Rev. 0, Change 0, *Data Validation for Radiochemical Analyses*, August 2010
GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010

ANALYTICAL QUALITY ASSOCIATES, INC.

616 Maxine NE
Albuquerque, NM 87123
505-299-5201
www.aqainc.net

Data Validation Report for CH2M Hill Plateau Remediation Company

VSR11-050
Project 100K Area AA Zone 4

Chemical Validation - Level C

Validation Performed By: Carl Schlosser **Date:** **8-30-2011**

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Date: 30 August 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 100K Area AA Zone 4
Subject: Inorganics - Sample Data Groups (SDGs) WSCF112619 and WSCF112789

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF112619 and WSCF112789 prepared by WSCF Analytical Laboratories. A list of samples validated along with the analytical method is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Method
B2FJ60	7/06/2011	Soil	C	200.8
B2FJ61	7/06/2011	Soil	C	200.8
B2FJ62	7/06/2011	Soil	C	200.8
B2FJ63	7/06/2011	Soil	C	200.8
B2FJ64	7/06/2011	Soil	C	200.8
B2FJ65	7/06/2011	Soil	C	200.8
B2FJ66	7/06/2011	Soil	C	200.8
B2FJ67	7/06/2011	Soil	C	200.8
B2FJ68	7/06/2011	Soil	C	200.8
B2FJ69	7/06/2011	Soil	C	200.8
B2FJ70	7/06/2011	Soil	C	200.8
B2FJ71	7/06/2011	Soil	C	200.8
B2FJ72	7/06/2011	Soil	C	200.8
B2FJ73 (original and re-analysis)	6/30/2011	Soil	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.

The samples were analyzed within the prescribed holding times and properly preserved with the following exception. For SDG WSCF112789, sample B2FJ73 was re-analyzed for Hg slightly beyond the holding time and should not be qualified for the minor holding time infraction, based on professional judgment.

- **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

For SDG WSCF112619, many analytes were detected in equipment blank B2FJ73. See the associated laboratory results report in Appendix 3.

For SDG WSCF112789, Mn, Ba, Cu, Pb and Sr were detected in the re-analysis of equipment blank B2FJ73.

- **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 exception. For SDG WSCF112619, the MSD recovery for Ba was > the upper acceptance limit. All associated Ba sample results were detects and should be qualified as estimates and flagged "J+." See the table in Appendix 2 for a listing of all affected sample results.

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) limits are ±30%. The limits for reported analytes not listed in the SAP are specified by the DV procedure. When duplicate RPDs exceed the limits and have associated results <5X the reporting limits with differences <2X the reporting limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD RPD values were acceptable with the following exception. For SDG WSCF112789, the Ba RPD was above the upper acceptance limit. The Ba result for sample B2FJ73 was a detect and should be qualified as an estimate and flagged "J."

Field Duplicate Samples

All field duplicate results were acceptable with the following exceptions. Samples B2FJ60 and B2FJ72 had Ni and Pb differences >2X the associated reporting limits.

Field Split Samples

No field splits were submitted for validation.

- **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 WSCF112619 and WSCF112789 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 sample results as estimates were due to MS recovery and MS/MSD RPD infractions for Ba. 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

Inorganic Data Qualification Summary			
SDGs: WSCF112619, WSCF112789	Reviewer: AQA	Project: 100K Area AA Zone 4	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Ba	J+	B2FJ60, B2FJ61, B2FJ62, B2FJ63, B2FJ64, B2FJ65, B2FJ66, B2FJ67, B2FJ68, B2FJ69, B2FJ70, B2FJ71, B2FJ72, B2FJ73 (original)	High MSD recovery
Ba	J	B2FJ73 (re-analysis)	Poor MS/MSD precision

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619001
SAF# F11-096
Sample ID B2FJ60

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.79		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		65.6		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		300		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		7.47		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	72.8	J+	mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.310		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	1.22		mg/kg	1	0.49	4.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619001
SAF# F11-096
Sample ID B2FJ60

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Chromium	7440-47-3	LA-505-412	B	4.11		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		9.25		mg/kg	1	0.098	0.49	07/13/11
Copper	7440-50-8	LA-505-412		14.8		mg/kg	1	0.098	0.98	07/13/11
Vanadium	7440-62-2	LA-505-412		56.7		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		41.6		mg/kg	1	0.78	4.9	07/13/11
Lead	7439-92-1	LA-505-412		1.87		mg/kg	1	0.098	0.98	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.534		mg/kg	1	0.098	0.98	07/13/11
Strontium	7440-24-6	LA-505-412		25.8		mg/kg	1	0.098	0.98	07/13/11
Tin	7440-31-5	LA-505-412	B	0.459		mg/kg	1	0.098	0.49	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.440		mg/kg	1	0.098	0.49	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.17		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.766		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619002
SAF# F11-096
Sample ID B2FJ61

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		59.7		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		323		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		8.31		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	55.1	J+	mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.150		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.834		mg/kg	1	0.48	4.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619002
SAF# F11-096
Sample ID B2FJ61

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Chromium	7440-47-3	LA-505-412	B	4.70		mg/kg	1	0.48	4.8	07/13/11
Cobalt	7440-48-4	LA-505-412		10.6		mg/kg	1	0.096	0.48	07/13/11
Copper	7440-50-8	LA-505-412		17.3		mg/kg	1	0.096	0.96	07/13/11
Vanadium	7440-62-2	LA-505-412		67.9		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		48.2		mg/kg	1	0.77	4.8	07/13/11
Lead	7439-92-1	LA-505-412		3.55		mg/kg	1	0.096	0.96	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.652		mg/kg	1	0.096	0.96	07/13/11
Strontium	7440-24-6	LA-505-412		25.1		mg/kg	1	0.096	0.96	07/13/11
Tin	7440-31-5	LA-505-412		0.509		mg/kg	1	0.096	0.48	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.451		mg/kg	1	0.096	0.48	07/13/11
Arsenic	7440-38-2	LA-505-412	B	2.15		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.38		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619003
SAF# F11-096
Sample ID B2FJ62

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.30		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		2350		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		298		mg/kg	1	0.097	0.97	07/13/11
Nickel	7440-02-0	LA-505-412		6.04		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	52.7 J+		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.176		mg/kg	1	0.097	0.49	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.49		mg/kg	1	0.49	4.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619003
SAF# F11-096
Sample ID B2FJ62

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.50		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		9.08		mg/kg	1	0.097	0.49	07/13/11
Copper	7440-50-8	LA-505-412		16.0		mg/kg	1	0.097	0.97	07/13/11
Vanadium	7440-62-2	LA-505-412		53.7		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		37.3		mg/kg	1	0.78	4.9	07/13/11
Lead	7439-92-1	LA-505-412		2.79		mg/kg	1	0.097	0.97	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.503		mg/kg	1	0.097	0.97	07/13/11
Strontium	7440-24-6	LA-505-412		21.0		mg/kg	1	0.097	0.97	07/13/11
Tin	7440-31-5	LA-505-412	B	0.391		mg/kg	1	0.097	0.49	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.399		mg/kg	1	0.097	0.49	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.30		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.795		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619004
SAF# F11-096
Sample ID B2FJ63

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		164		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		360		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		9.38		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	66.6 J+		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.269		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.976		mg/kg	1	0.49	4.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619004
SAF# F11-096
Sample ID B2FJ63

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Chromium	7440-47-3	LA-505-412		7.27		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		9.84		mg/kg	1	0.098	0.49	07/13/11
Copper	7440-50-8	LA-505-412		17.2		mg/kg	1	0.098	0.98	07/13/11
Vanadium	7440-62-2	LA-505-412		49.0		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		43.8		mg/kg	1	0.78	4.9	07/13/11
Lead	7439-92-1	LA-505-412		4.80		mg/kg	1	0.098	0.98	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.458		mg/kg	1	0.098	0.98	07/13/11
Strontium	7440-24-6	LA-505-412		28.2		mg/kg	1	0.098	0.98	07/13/11
Tin	7440-31-5	LA-505-412	B	0.407		mg/kg	1	0.098	0.49	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.476		mg/kg	1	0.098	0.49	07/13/11
Arsenic	7440-38-2	LA-505-412	B	2.55		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.821		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619005
SAF# F11-096
Sample ID B2FJ64

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		174		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		287		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		6.52		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	42.5	J+	mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.193		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.671		mg/kg	1	0.49	4.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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)

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7-22-2011

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WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619005
SAF# F11-096
Sample ID B2FJ64

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.97		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		9.12		mg/kg	1	0.098	0.49	07/13/11
Copper	7440-50-8	LA-505-412		16.4		mg/kg	1	0.098	0.98	07/13/11
Vanadium	7440-62-2	LA-505-412		47.5		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		37.6		mg/kg	1	0.78	4.9	07/13/11
Lead	7439-92-1	LA-505-412		2.29		mg/kg	1	0.098	0.98	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.398		mg/kg	1	0.098	0.98	07/13/11
Strontium	7440-24-6	LA-505-412		19.7		mg/kg	1	0.098	0.98	07/13/11
Tin	7440-31-5	LA-505-412	B	0.338		mg/kg	1	0.098	0.49	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.378		mg/kg	1	0.098	0.49	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.48		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.08		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619006
SAF# F11-096
Sample ID B2FJ65

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		102		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		308		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		7.56		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	46.7 J+		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.179		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.49		mg/kg	1	0.49	4.9	07/13/11

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

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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619006
SAF# F11-096
Sample ID B2FJ65

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.94		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		10.1		mg/kg	1	0.098	0.49	07/13/11
Copper	7440-50-8	LA-505-412		16.2		mg/kg	1	0.098	0.98	07/13/11
Vanadium	7440-62-2	LA-505-412		59.8		mg/kg	1	0.20	2.0	07/13/11
Zinc	7440-66-6	LA-505-412		42.3		mg/kg	1	0.78	4.9	07/13/11
Lead	7439-92-1	LA-505-412		2.50		mg/kg	1	0.098	0.98	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.20	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.407		mg/kg	1	0.098	0.98	07/13/11
Strontium	7440-24-6	LA-505-412		22.7		mg/kg	1	0.098	0.98	07/13/11
Tin	7440-31-5	LA-505-412	B	0.439		mg/kg	1	0.098	0.49	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.421		mg/kg	1	0.098	0.49	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.43		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.01		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619007
SAF# F11-096
Sample ID B2FJ66

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	2.11		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		500		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		320		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412		9.39		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	51.2	J+	mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.178		mg/kg	1	0.095	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.773		mg/kg	1	0.48	4.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619007
SAF# F11-096
Sample ID B2FJ66

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Chromium	7440-47-3	LA-505-412		5.81		mg/kg	1	0.48	4.8	07/13/11
Cobalt	7440-48-4	LA-505-412		10.6		mg/kg	1	0.095	0.48	07/13/11
Copper	7440-50-8	LA-505-412		19.5		mg/kg	1	0.095	0.95	07/13/11
Vanadium	7440-62-2	LA-505-412		57.2		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		43.7		mg/kg	1	0.76	4.8	07/13/11
Lead	7439-92-1	LA-505-412		4.10		mg/kg	1	0.095	0.95	07/13/11
Mercury	7439-97-6	LA-505-412	B	0.0760		mg/kg	1	0.048	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.463		mg/kg	1	0.095	0.95	07/13/11
Strontium	7440-24-6	LA-505-412		29.2		mg/kg	1	0.095	0.95	07/13/11
Tin	7440-31-5	LA-505-412		0.486		mg/kg	1	0.095	0.48	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.452		mg/kg	1	0.095	0.48	07/13/11
Arsenic	7440-38-2	LA-505-412	B	2.21		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.802		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619008
SAF# F11-096
Sample ID B2FJ67

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.08		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		85.1		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		299		mg/kg	1	0.097	0.97	07/13/11
Nickel	7440-02-0	LA-505-412		6.68		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	44.8 J+		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.186		mg/kg	1	0.097	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.769		mg/kg	1	0.49	4.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619008
SAF# F11-096
Sample ID B2FJ67

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.60		mg/kg	1	0.49	4.9	07/13/11
Cobalt	7440-48-4	LA-505-412		10.2		mg/kg	1	0.097	0.49	07/13/11
Copper	7440-50-8	LA-505-412		17.7		mg/kg	1	0.097	0.97	07/13/11
Vanadium	7440-62-2	LA-505-412		53.1		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		40.5		mg/kg	1	0.78	4.9	07/13/11
Lead	7439-92-1	LA-505-412		2.83		mg/kg	1	0.097	0.97	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.049		mg/kg	1	0.049	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.344		mg/kg	1	0.097	0.97	07/13/11
Strontium	7440-24-6	LA-505-412		20.7		mg/kg	1	0.097	0.97	07/13/11
Tin	7440-31-5	LA-505-412	B	0.384		mg/kg	1	0.097	0.49	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.427		mg/kg	1	0.097	0.49	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.36		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.868		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619009
SAF# F11-096
Sample ID B2FJ68

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	1.64		mg/kg	1	0.95	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	9.50		mg/kg	1	3.6	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		226		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		5.35		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	45.5 J+		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.246		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.48		mg/kg	1	0.48	4.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619009
SAF# F11-096
Sample ID B2FJ68

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.24		mg/kg	1	0.48	4.8	07/13/11
Cobalt	7440-48-4	LA-505-412		8.19		mg/kg	1	0.096	0.48	07/13/11
Copper	7440-50-8	LA-505-412		14.8		mg/kg	1	0.096	0.96	07/13/11
Vanadium	7440-62-2	LA-505-412		46.6		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		35.0		mg/kg	1	0.77	4.8	07/13/11
Lead	7439-92-1	LA-505-412		2.13		mg/kg	1	0.096	0.96	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.342		mg/kg	1	0.096	0.96	07/13/11
Strontium	7440-24-6	LA-505-412		22.5		mg/kg	1	0.096	0.96	07/13/11
Tin	7440-31-5	LA-505-412	B	0.398		mg/kg	1	0.096	0.48	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.382		mg/kg	1	0.096	0.48	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.27		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.10		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619010
SAF# F11-096
Sample ID B2FJ69

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410		117		mg/kg	1	3.6	52	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		367		mg/kg	1	0.097	0.97	07/13/11
Nickel	7440-02-0	LA-505-412		8.83		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	55.7 J+		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.379		mg/kg	1	0.097	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.552		mg/kg	1	0.48	4.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619010
SAF# F11-096
Sample ID B2FJ69

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Chromium	7440-47-3	LA-505-412		6.01		mg/kg	1	0.48	4.8	07/13/11
Cobalt	7440-48-4	LA-505-412		10.1		mg/kg	1	0.097	0.48	07/13/11
Copper	7440-50-8	LA-505-412		18.3		mg/kg	1	0.097	0.97	07/13/11
Vanadium	7440-62-2	LA-505-412		59.6		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		44.5		mg/kg	1	0.77	4.8	07/13/11
Lead	7439-92-1	LA-505-412		4.48		mg/kg	1	0.097	0.97	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.405		mg/kg	1	0.097	0.97	07/13/11
Strontium	7440-24-6	LA-505-412		25.9		mg/kg	1	0.097	0.97	07/13/11
Tin	7440-31-5	LA-505-412	B	0.461		mg/kg	1	0.097	0.48	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.475		mg/kg	1	0.097	0.48	07/13/11
Arsenic	7440-38-2	LA-505-412	B	2.70		mg/kg	1	0.39	3.9	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.917		mg/kg	1	0.29	2.9	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619011
SAF# F11-096
Sample ID B2FJ70

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	1.56		mg/kg	1	0.96	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	4.16		mg/kg	1	3.6	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		256		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412		6.45		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	40.9	J+	mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.307		mg/kg	1	0.095	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	0.606		mg/kg	1	0.47	4.7	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619011
SAF# F11-096
Sample ID B2FJ70

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.40		mg/kg	1	0.47	4.7	07/13/11
Cobalt	7440-48-4	LA-505-412		9.14		mg/kg	1	0.095	0.47	07/13/11
Copper	7440-50-8	LA-505-412		15.2		mg/kg	1	0.095	0.95	07/13/11
Vanadium	7440-62-2	LA-505-412		46.5		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		35.3		mg/kg	1	0.76	4.7	07/13/11
Lead	7439-92-1	LA-505-412		2.25		mg/kg	1	0.095	0.95	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.291		mg/kg	1	0.095	0.95	07/13/11
Strontium	7440-24-6	LA-505-412		18.8		mg/kg	1	0.095	0.95	07/13/11
Tin	7440-31-5	LA-505-412	B	0.334		mg/kg	1	0.095	0.47	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.376		mg/kg	1	0.095	0.47	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.14		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.656		mg/kg	1	0.28	2.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619012
SAF# F11-096
Sample ID B2FJ71

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.7	07/07/11
Chloride	16887-00-6	LA-533-410	B	4.69		mg/kg	1	3.2	21	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	2.96		mg/kg	1	0.97	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	11.3		mg/kg	1	3.7	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		270		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412		6.71		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	45.7 J+		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.161		mg/kg	1	0.095	0.47	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619012
SAF# F11-096
Sample ID B2FJ71

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Chromium	7440-47-3	LA-505-412	B	2.95		mg/kg	1	0.47	4.7	07/13/11
Cobalt	7440-48-4	LA-505-412		9.35		mg/kg	1	0.095	0.47	07/13/11
Copper	7440-50-8	LA-505-412		17.4		mg/kg	1	0.095	0.95	07/13/11
Vanadium	7440-62-2	LA-505-412		53.4		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		39.8		mg/kg	1	0.76	4.7	07/13/11
Lead	7439-92-1	LA-505-412		2.73		mg/kg	1	0.095	0.95	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.340		mg/kg	1	0.095	0.95	07/13/11
Strontium	7440-24-6	LA-505-412		21.1		mg/kg	1	0.095	0.95	07/13/11
Tin	7440-31-5	LA-505-412	B	0.412		mg/kg	1	0.095	0.47	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.420		mg/kg	1	0.095	0.47	07/13/11
Arsenic	7440-38-2	LA-505-412	B	1.60		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.930		mg/kg	1	0.28	2.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619013
SAF# F11-096
Sample ID B2FJ72

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	1.50		mg/kg	1	0.96	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	44.0		mg/kg	1	3.6	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		377		mg/kg	1	0.093	0.93	07/13/11
Nickel	7440-02-0	LA-505-412		11.7		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	69.2 J+		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.418		mg/kg	1	0.093	0.46	07/13/11
Boron	7440-42-8	LA-505-412	B	1.62		mg/kg	1	0.46	4.6	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619013
SAF# F11-096
Sample ID B2FJ72

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	07/13/11
Chromium	7440-47-3	LA-505-412		9.17		mg/kg	1	0.46	4.6	07/13/11
Cobalt	7440-48-4	LA-505-412		10.2		mg/kg	1	0.093	0.46	07/13/11
Copper	7440-50-8	LA-505-412		18.3		mg/kg	1	0.093	0.93	07/13/11
Vanadium	7440-62-2	LA-505-412		50.4		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		45.4		mg/kg	1	0.74	4.6	07/13/11
Lead	7439-92-1	LA-505-412		6.14		mg/kg	1	0.093	0.93	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.046		mg/kg	1	0.046	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.399		mg/kg	1	0.093	0.93	07/13/11
Strontium	7440-24-6	LA-505-412		27.5		mg/kg	1	0.093	0.93	07/13/11
Tin	7440-31-5	LA-505-412	B	0.455		mg/kg	1	0.093	0.46	07/13/11
Uranium	7440-61-1	LA-505-412		0.529		mg/kg	1	0.093	0.46	07/13/11
Arsenic	7440-38-2	LA-505-412	B	3.05		mg/kg	1	0.37	3.7	07/13/11
Selenium	7782-49-2	LA-505-412	B	0.710		mg/kg	1	0.28	2.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619014
SAF# F11-096
Sample ID B2FJ73

Matrix SOIL
Sampled 06/30/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	4.9	07/07/11
Sulfate	14808-79-8	LA-533-410	U	<3.6		mg/kg	1	3.6	52	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		297		mg/kg	1	0.094	0.94	07/13/11
Nickel	7440-02-0	LA-505-412		7.33		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	55.1	J+	mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.349		mg/kg	1	0.094	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	0.519		mg/kg	1	0.47	4.7	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
7-22-2011

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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619014
SAF# F11-096
Sample ID B2FJ73

Matrix SOIL
Sampled 06/30/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cadmium	7440-43-9	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Chromium	7440-47-3	LA-505-412		5.43		mg/kg	1	0.47	4.7	07/13/11
Cobalt	7440-48-4	LA-505-412		10.1		mg/kg	1	0.094	0.47	07/13/11
Copper	7440-50-8	LA-505-412		17.9		mg/kg	1	0.094	0.94	07/13/11
Vanadium	7440-62-2	LA-505-412		60.6		mg/kg	1	0.19	1.9	07/13/11
Zinc	7440-66-6	LA-505-412		45.5		mg/kg	1	0.75	4.7	07/13/11
Lead	7439-92-1	LA-505-412		3.41		mg/kg	1	0.094	0.94	07/13/11
Mercury	7439-97-6	LA-505-412	U	<0.047		mg/kg	1	0.047	0.19	07/13/11
Molybdenum	7439-98-7	LA-505-412	B	0.611		mg/kg	1	0.094	0.94	07/13/11
Strontium	7440-24-6	LA-505-412		25.2		mg/kg	1	0.094	0.94	07/13/11
Tin	7440-31-5	LA-505-412		0.474		mg/kg	1	0.094	0.47	07/13/11
Uranium	7440-61-1	LA-505-412	B	0.468		mg/kg	1	0.094	0.47	07/13/11
Arsenic	7440-38-2	LA-505-412	B	2.80		mg/kg	1	0.38	3.8	07/13/11
Selenium	7782-49-2	LA-505-412	B	1.23		mg/kg	1	0.28	2.8	07/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112789

Sample # 112789001
SAF# F11-096
Sample ID B2FJ73

Matrix SOIL
Sampled 06/30/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**07/27/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412	B	0.443		mg/kg	1	0.096	0.96	07/29/11
Nickel	7440-02-0	LA-505-412	U	<0.19		mg/kg	1	0.19	1.9	07/29/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/29/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/29/11
Barium	7440-39-3	LA-505-412	B	0.308 J		mg/kg	1	0.19	1.9	07/29/11
Beryllium	7440-41-7	LA-505-412	U	<0.096		mg/kg	1	0.096	0.48	07/29/11
Boron	7440-42-8	LA-505-412	U	<0.48		mg/kg	1	0.48	4.8	07/29/11
Cadmium	7440-43-9	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/29/11
Chromium	7440-47-3	LA-505-412	U	<0.48		mg/kg	1	0.48	4.8	07/29/11
Cobalt	7440-48-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.48	07/29/11
Copper	7440-50-8	LA-505-412	B	0.234		mg/kg	1	0.096	0.96	07/29/11
Vanadium	7440-62-2	LA-505-412	U	<0.19		mg/kg	1	0.19	1.9	07/29/11
Zinc	7440-66-6	LA-505-412	U	<0.77		mg/kg	1	0.77	4.8	07/29/11
Lead	7439-92-1	LA-505-412	B	0.101		mg/kg	1	0.096	0.96	07/29/11
Mercury	7439-97-6	LA-505-412	U	<0.048		mg/kg	1	0.048	0.19	07/29/11
Molybdenum	7439-98-7	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/29/11
Strontium	7440-24-6	LA-505-412	B	0.153		mg/kg	1	0.096	0.96	07/29/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

LS
8-22-2011

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)

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112789

Sample # 112789001
SAF# F11-096
Sample ID B2FJ73

Matrix SOIL
Sampled 06/30/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Tin	7440-31-5	LA-505-412	U	<0.096		mg/kg	1	0.096	0.48	07/29/11
Uranium	7440-61-1	LA-505-412	U	<0.096		mg/kg	1	0.096	0.48	07/29/11
Arsenic	7440-38-2	LA-505-412	U	<0.38		mg/kg	1	0.38	3.8	07/29/11
Selenium	7782-49-2	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/29/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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)

DRAFT

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 2
Narrative
WSCF112619

Revision: This report has been revised to include Boron QC results that were missing from the original report.

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):

- Batch 185391

- Fluoride - Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.

- Batch 185387
  - Sulfate - exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
  - All applicable QC controls are within the established limits.

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):

- Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- 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):

- Barium – Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" 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** — F11-096-061 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY: [ ]	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: Area AA Zone 4 Sample 1	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil	SAF NO.: F11-096	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

112619

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ60	SOIL	JUL 06 2011	0742	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	JUL 06 2011 1240	M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

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Wednesday, July 13, 2011 8:41:20 AM
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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-062 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: Area AA Zone 4 Sample 2	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
AIR QUALITY: ☐			
ICE CHEST NO.: GW9-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ61	2	SOIL	JUL 06 2011	0812	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-096-063

PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: Area AA Zone 4 Sample 3

PROJECT DESIGNATION: Area AA In-Process Sampling - Soil

SAF NO.: F11-096

AIR QUALITY: ☐

ICE CHEST NO.: GWS-007

FIELD LOGBOOK NO.: HNF-N-507-72

ACTUAL SAMPLE DEPTH: SURFACE

COA: 302682ES10

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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ62	3	SOIL	JUL 06 2011	0824	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 0810	M.Nelson	JUL 06 2011 1340

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-064 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1657	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 4	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N 507.22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ63	4	SOIL	JUL 06 2011	0848	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M. Nelson M. Nelson	JUL 06 2011 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

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-065 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 5	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: Geo 5-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SFE ITEM (1) IN SPECIAL INSTRUCTIONS	SLE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ64	5 SOIL	JUL 06 2011	0856	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011	ap M. Nelson M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-066 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 6	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: G-WS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ65	SOIL	JUL 06 2011	0910	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1340	M Nelson M Nelson	JUL 06 2011 1340

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-067 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: Area AA Zone 4 Sample 7	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil	SAF NO.: F11-096	AIR QUALITY:
ICE CHEST NO.: GW8-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ66	7	SOIL	JUL 06 2011	0922	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1210	M Noisom M Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — **F11-096-068** — **PAGE 1 OF 1**

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** LUKE, SN	**TELEPHONE NO.** 372-1667	**PROJECT COORDINATOR** LUKE, SN
PRICE CODE C01	**DATA TURNAROUND** 12 Days / 12 Days		
SAMPLING LOCATION Area AA Zone 4 Sample 8	**PROJECT DESIGNATION** Area AA In-Process Sampling - Soil	**SAF NO.** F11-096	**AIR QUALITY** ☐
ICE CHEST NO. GWS-007	**FIELD LOGBOOK NO.** HNF-N-587 22	**ACTUAL SAMPLE DEPTH** SURFACE	**COA** 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/F
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ67	8	SOIL	JUL 0 6 2011	0932	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 0 6 2011 1340	M. Nelson	JUL 0 6 2011 1340

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-069 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: Area AA Zone 4 Sample 9	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
AIR QUALITY: ☐			
ICE CHEST NO.: GW4007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ68	9	SOIL	JUL 06 2011	1000	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M. Nelson M.L.N.	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-070 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: Area AA Zone 4 Sample 10	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil	SAF NO.: F11-096	
ICE CHEST NO.: GW9-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ69 10	SOIL	JUL 06 2011	1010	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	JUL 06 2011 1240	M Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-518 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-071 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 11	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: GW3-007	FIELD LOGBOOK NO.: HNF.N.507.22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ70	SOIL	JUL 06 2011	1018	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003 618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-072 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY:	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: Area AA Zone 4 Sample 12	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil	SAF NO.: F11-096	
ICE CHEST NO.: GEOS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ71 12	SOIL	JUL 06 2011	1629	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 06 2011 1240	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: JUL 06 2011 1340
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

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-073 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	SAMPLING LOCATION: Area AA Zone 4 Sample 13	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil
SAF NO.: F11-096	AIR QUALITY: ☐	ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-507-22
ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ72	13	SOIL	JUL 06 2011	0742	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	JUL 06 2011 1240	M. Nelson / M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-074 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: Area AA Zone 4 Sample 14	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
AIR QUALITY:	ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: 0-1'
COA: 302682ES10	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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ73	14	SOIL	6/30/11	1135	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC [signature] 6/30/11	1200	MO1109 SSU #1 6/30/11	1200
MO 1109 SSU #1	7-6-11 1210	FM Hall [signature]	7-6-11 1210
FM Hall [signature]	7-6-11 1210	M. Nelson Hinerks	1210 7-6-11
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

SPECIAL INSTRUCTIONS

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** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Attachment 2
Narrative
WSCF112789

Introduction RDR R7274

A sample was selected for reanalysis at the WSCF Laboratory. The sample was selected from 110727WSCF-R7274. The sample was analyzed for the analytes indicated on the attached copy of the RDR 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

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):

- The results from the rerun did not match the original results. Most likely the original analysis was performed on the wrong sample.
- Barium – MS / MSD Relative Percent Difference (RPD) is outside established laboratory limits. The quality control report was flagged for RPD failure.

- Manganese – Exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
- 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.

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 100K Area AA Zone 4			DATA PACKAGE: VSR11-050		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 8-30-2011	
			SDG: WSCF112619, WSCF112789		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg		EPA 200.8 X	

SAMPLES/MATRIX Soil samples

WSCF112619: B2FJ60, B2FJ61, B2FJ62, B2FJ63, B2FJ64, B2FJ65, B2FJ66, B2FJ67, B2FJ68, B2FJ69, B2FJ70, B2FJ71, B2FJ72, B2FJ73

WSCF112789: B2FJ73 (re-analysis)

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: None

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:

WSCF112619: EB B2FJ73 (original analysis) had many hits. See the annotated laboratory report in Appendix 3 of the DV report for a listing of the detections.

WSCF112789: EB B2FJ73 (re-analysis) hits: Mn 0.44 mg/kg, Ba 0.31 mg/kg, Cu 0.23 mg/kg, Pb 0.10 mg/kg, Sr 0.15 mg/kg,

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

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD 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

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

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

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments:

WSCF112619: Ba MSD %R = 138%

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:

B2FJ60 & its field duplicate B2FJ72: Ni diff (4.23 mg/kg) > 2X the PQL (PQL = 2.0 mg/kg)
Pb diff (4.27 mg/kg) > 2X the PQL (PQL = 0.98 mg/kg)

WSCF112789: Ba MS/MSD RPD = 36%

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:

WSCF112789: B2FJ73 re-analyzed for Hg one day past the 28-day HT. Hg result not qualified for this minor infraction.

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

Appendix 6

Additional Documentation Requested By Client

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

QC Batch 185462 **Test** ICP-2008 MS All possible metal
Associated Samples 112619001, 112619002, 112619003, 112619004, 112619005, 112619006, 112619007, 112619008, 112619009, 112619010, 112619011, 112619012, 112619013, 112619014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #60135**							
Manganese	7439-96-5		268	mg/kg	93.8	75 - 121				07/13/11
Nickel	7440-02-0		56.5	mg/kg	95.6	74 - 122				07/13/11
Silver	7440-22-4		34.6	mg/kg	100.5	83 - 127				07/13/11
Antimony	7440-36-0		144	mg/kg	118.3	62 - 205				07/13/11
Barium	7440-39-3		159	mg/kg	94.2	78 - 118				07/13/11
Beryllium	7440-41-7		58.2	mg/kg	93.2	77 - 120				07/13/11
Cadmium	7440-43-9		59.8	mg/kg	96.8	76 - 129				07/13/11
Chromium	7440-47-3		67.1	mg/kg	94	68 - 119				07/13/11
Cobalt	7440-48-4		101	mg/kg	97.8	77 - 122				07/13/11
Copper	7440-50-8		77.0	mg/kg	94.9	67 - 120				07/13/11
Vanadium	7440-62-2		55.4	mg/kg	93.7	67 - 122				07/13/11
Zinc	7440-66-6		133	mg/kg	94.5	73 - 131				07/13/11
Lead	7439-92-1		89.4	mg/kg	96.8	79 - 124				07/13/11
Mercury	7439-97-6		3.51	mg/kg	93	69 - 124				07/13/11
Molybdenum	7439-98-7		43.0	mg/kg	100.9	80 - 125				07/13/11
Strontium	7440-24-6		64.3	mg/kg	88.9	78 - 119				07/13/11
Tin	7440-31-5		110	mg/kg	102.9	84 - 130				07/13/11
Uranium	7440-61-1		363	mg/kg	90.8	86 - 113				07/13/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		91.5	mg/kg	98.8	79 - 125				07/13/11
Selenium	7782-49-2		89.4	mg/kg	99.9	82 - 133				07/13/11
MS			**QC Sample #60136**							
			Original 112619001							
Manganese	7439-96-5	300	104	mg/kg	106.7	70 - 130				07/13/11
Nickel	7440-02-0	7.47	96.7	mg/kg	99	70 - 130				07/13/11
Silver	7440-22-4	<0.098	98.5	mg/kg	100.9	70 - 130				07/13/11
Antimony	7440-36-0	<0.29	95.4	mg/kg	97.7	70 - 130				07/13/11
Barium	7440-39-3	72.8	98.6	mg/kg	101	70 - 130				07/13/11
Beryllium	7440-41-7	0.310	94.4	mg/kg	96.7	70 - 130				07/13/11
Cadmium	7440-43-9	<0.098	98.2	mg/kg	100.6	70 - 130				07/13/11
Chromium	7440-47-3	4.11	97.8	mg/kg	100.2	70 - 130				07/13/11
Cobalt	7440-48-4	9.25	98.3	mg/kg	100.7	70 - 130				07/13/11
Copper	7440-50-8	14.8	98.0	mg/kg	100.4	70 - 130				07/13/11
Vanadium	7440-62-2	56.7	110	mg/kg	112.9	70 - 130				07/13/11
Zinc	7440-66-6	41.6	99.2	mg/kg	101.6	70 - 130				07/13/11
Lead	7439-92-1	1.87	99.4	mg/kg	101.8	70 - 130				07/13/11
Mercury	7439-97-6	<0.049	1.89	mg/kg	97	70 - 130				07/13/11
Molybdenum	7439-98-7	0.534	99.1	mg/kg	101.6	70 - 130				07/13/11
Strontium	7440-24-6	25.8	98.7	mg/kg	101.2	70 - 130				07/13/11
Tin	7440-31-5	0.459	99.7	mg/kg	102.1	70 - 130				07/13/11
Uranium	7440-61-1	0.440	97.6	mg/kg	100	70 - 130				07/13/11
Arsenic	7440-38-2	1.17	97.1	mg/kg	99.5	70 - 130				07/13/11
Selenium	7782-49-2	0.766	96.7	mg/kg	99.1	70 - 130				07/13/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MSD			**QC Sample #60137**								
			Original 112619001						**Paired**	**60136**	
Manganese	7439-96-5	300	102	mg/kg	112.3	70 - 130	5.10	30			07/13/11
Nickel	7440-02-0	7.47	95.0	mg/kg	104.3	70 - 130	5.20	30			07/13/11
Silver	7440-22-4	<0.098	95.7	mg/kg	105	70 - 130	4.00	30			07/13/11
Antimony	7440-36-0	<0.29	92.8	mg/kg	101.9	70 - 130	4.20	30			07/13/11
Barium	7440-39-3	72.8	126	mg/kg	138.4	70 - 130	31.20	30	*	NX	07/13/11
Beryllium	7440-41-7	0.310	94.5	mg/kg	103.8	70 - 130	7.10	30			07/13/11
Cadmium	7440-43-9	<0.098	95.9	mg/kg	105.3	70 - 130	4.60	30			07/13/11
Chromium	7440-47-3	4.11	94.1	mg/kg	103.3	70 - 130	3.00	30			07/13/11
Cobalt	7440-48-4	9.25	92.8	mg/kg	101.8	70 - 130	1.10	30			07/13/11
Copper	7440-50-8	14.8	92.2	mg/kg	101.2	70 - 130	0.80	30			07/13/11
Vanadium	7440-62-2	56.7	102	mg/kg	111.6	70 - 130	1.20	30			07/13/11
Zinc	7440-66-6	41.6	91.4	mg/kg	100.3	70 - 130	1.30	30			07/13/11
Lead	7439-92-1	1.87	96.8	mg/kg	106.3	70 - 130	4.30	30			07/13/11
Mercury	7439-97-6	<0.049	1.84	mg/kg	101	70 - 130	4.00	30			07/13/11
Molybdenum	7439-98-7	0.534	96.9	mg/kg	106.3	70 - 130	4.50	30			07/13/11
Strontium	7440-24-6	25.8	96.2	mg/kg	105.6	70 - 130	4.30	30			07/13/11
Tin	7440-31-5	0.459	96.5	mg/kg	105.9	70 - 130	3.70	30			07/13/11
Uranium	7440-61-1	0.440	96.1	mg/kg	105.5	70 - 130	5.40	30			07/13/11
Arsenic	7440-38-2	1.17	94.8	mg/kg	104	70 - 130	4.40	30			07/13/11
Selenium	7782-49-2	0.766	93.3	mg/kg	102.4	70 - 130	3.30	30			07/13/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

QC Batch 185462 **Test** ICP-2008 MS All possible metal
Associated Samples 112619001, 112619002, 112619003, 112619004, 112619005, 112619006, 112619007, 112619008, 112619009, 112619010, 112619011, 112619012, 112619013, 112619014

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60134**						
Manganese	7439-96-5		<0.10	ug/L				U	07/13/11
Nickel	7440-02-0		<0.20	ug/L				U	07/13/11
Silver	7440-22-4		<0.050	ug/L				U	07/13/11
Antimony	7440-36-0		<0.050	ug/L				U	07/13/11
Barium	7440-39-3		<0.20	ug/L				U	07/13/11
Beryllium	7440-41-7		<0.050	ug/L				U	07/13/11
Boron	7440-42-8		<0.50	ug/L				U	07/13/11
Cadmium	7440-43-9		<0.050	ug/L				U	07/13/11
Chromium	7440-47-3		<0.10	ug/L				U	07/13/11
Cobalt	7440-48-4		<0.10	ug/L				U	07/13/11
Copper	7440-50-8		<0.10	ug/L				U	07/13/11
Vanadium	7440-62-2		<0.20	ug/L				U	07/13/11
Zinc	7440-66-6		<0.80	ug/L				U	07/13/11
Lead	7439-92-1		<0.10	ug/L				U	07/13/11
Mercury	7439-97-6		<0.030	ug/L				U	07/13/11
Molybdenum	7439-98-7		<0.10	ug/L				U	07/13/11
Strontium	7440-24-6		<0.10	ug/L				U	07/13/11
Tin	7440-31-5		<0.10	ug/L				U	07/13/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Uranium	7440-61-1		<0.10	ug/L					U	07/13/11
Arsenic	7440-38-2		<0.40	ug/L					U	07/13/11
Selenium	7782-49-2		<0.30	ug/L					U	07/13/11
LCS			**QC Sample #60135**							
Boron	7440-42-8		106	mg/kg	99.6	64 - 136				07/13/11
MS			**QC Sample #60136**							
			Original 112619001							
Boron	7440-42-8	1.22	88.4	mg/kg	90.5	70 - 130				07/13/11
MSD			**QC Sample #60137**							
			Original 112619001					**Paired**	**60136**	
Boron	7440-42-8	1.22	99.4	mg/kg	109.1	70 - 130	18.60	30		07/13/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112789

QC Batch 186895
Associated Samples 112789001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #61548**							
Manganese	7439-96-5		283	mg/kg	98.9	75 - 121				07/29/11
Nickel	7440-02-0		58.9	mg/kg	99.7	74 - 122				07/29/11
Silver	7440-22-4		35.3	mg/kg	102.5	83 - 127				07/29/11
Antimony	7440-36-0		163	mg/kg	133.8	62 - 205				07/29/11
Beryllium	7440-41-7		59.0	mg/kg	94.5	77 - 120				07/29/11
Cadmium	7440-43-9		65.0	mg/kg	105.1	76 - 129				07/29/11
Chromium	7440-47-3		69.0	mg/kg	96.8	68 - 119				07/29/11
Cobalt	7440-48-4		102	mg/kg	99.3	77 - 122				07/29/11
Copper	7440-50-8		77.8	mg/kg	95.8	67 - 120				07/29/11
Vanadium	7440-62-2		58.6	mg/kg	99	67 - 122				07/29/11
Zinc	7440-66-6		136	mg/kg	96.6	73 - 131				07/29/11
Lead	7439-92-1		93.7	mg/kg	101.4	79 - 124				07/29/11
Mercury	7439-97-6		3.71	mg/kg	98.5	69 - 124				07/29/11
Molybdenum	7439-98-7		48.0	mg/kg	112.8	80 - 125				07/29/11
Strontium	7440-24-6		71.9	mg/kg	99.3	78 - 119				07/29/11
Tin	7440-31-5		110	mg/kg	103.1	84 - 130				07/29/11
Uranium	7440-61-1		373	mg/kg	93.4	86 - 113				07/29/11
Arsenic	7440-38-2		96.4	mg/kg	104.1	79 - 125				07/29/11
Selenium	7782-49-2		96.7	mg/kg	108.1	82 - 133				07/29/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112789

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MS			**QC Sample #61549**								
			Original	**112720001**							
Manganese	7439-96-5		493	mg/kg	509.8	70 - 130				X	07/29/11
Nickel	7440-02-0		93.8	mg/kg	97	70 - 130					07/29/11
Silver	7440-22-4		100	mg/kg	103.9	70 - 130					07/29/11
Antimony	7440-36-0		80.8	mg/kg	83.6	70 - 130					07/29/11
Beryllium	7440-41-7		97.3	mg/kg	100.7	70 - 130					07/29/11
Cadmium	7440-43-9		100	mg/kg	103.9	70 - 130					07/29/11
Chromium	7440-47-3		95.6	mg/kg	99	70 - 130					07/29/11
Cobalt	7440-48-4		94.0	mg/kg	97.3	70 - 130					07/29/11
Copper	7440-50-8		89.6	mg/kg	92.7	70 - 130					07/29/11
Vanadium	7440-62-2		95.5	mg/kg	98.9	70 - 130					07/29/11
Zinc	7440-66-6		89.2	mg/kg	92.3	70 - 130					07/29/11
Lead	7439-92-1		99.8	mg/kg	103.3	70 - 130					07/29/11
Mercury	7439-97-6		2.00	mg/kg	103.5	70 - 130					07/29/11
Molybdenum	7439-98-7		100	mg/kg	103.6	70 - 130					07/29/11
Strontium	7440-24-6		104	mg/kg	108.1	70 - 130					07/29/11
Tin	7440-31-5		100	mg/kg	103.5	70 - 130					07/29/11
Uranium	7440-61-1		98.6	mg/kg	102.1	70 - 130					07/29/11
Arsenic	7440-38-2		98.2	mg/kg	101.7	70 - 130					07/29/11
Selenium	7782-49-2		97.5	mg/kg	100.8	70 - 130					07/29/11
MSD			**QC Sample #61550**								
			Original	**112720001**					**Paired**	**61549**	
Manganese	7439-96-5		132	mg/kg	142.4	70 - 130	112.70	30	*	X	07/29/11
Nickel	7440-02-0		76.8	mg/kg	82.7	70 - 130	15.90	30			07/29/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112789

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Silver	7440-22-4		90.0	mg/kg	97	70 - 130	6.90	30		07/29/11
Antimony	7440-36-0		66.7	mg/kg	71.9	70 - 130	15.00	30		07/29/11
Beryllium	7440-41-7		85.8	mg/kg	92.4	70 - 130	8.60	30		07/29/11
Cadmium	7440-43-9		87.0	mg/kg	93.7	70 - 130	10.30	30		07/29/11
Chromium	7440-47-3		80.2	mg/kg	86.3	70 - 130	13.70	30		07/29/11
Cobalt	7440-48-4		79.4	mg/kg	85.5	70 - 130	12.90	30		07/29/11
Copper	7440-50-8		75.0	mg/kg	80.8	70 - 130	13.70	30		07/29/11
Vanadium	7440-62-2		74.4	mg/kg	80.1	70 - 130	21.00	30		07/29/11
Zinc	7440-66-6		70.6	mg/kg	76	70 - 130	19.40	30		07/29/11
Lead	7439-92-1		87.7	mg/kg	94.5	70 - 130	8.90	30		07/29/11
Mercury	7439-97-6		1.89	mg/kg	102	70 - 130	1.50	30		07/29/11
Molybdenum	7439-98-7		84.6	mg/kg	91.1	70 - 130	12.80	30		07/29/11
Strontium	7440-24-6		74.7	mg/kg	80.5	70 - 130	29.30	30		07/29/11
Tin	7440-31-5		88.4	mg/kg	95.2	70 - 130	8.40	30		07/29/11
Uranium	7440-61-1		87.4	mg/kg	94.1	70 - 130	8.20	30		07/29/11
Arsenic	7440-38-2		86.0	mg/kg	92.7	70 - 130	9.30	30		07/29/11
Selenium	7782-49-2		89.2	mg/kg	96.1	70 - 130	4.80	30		07/29/11
BLANK				**QC Sample #61547**						
Manganese	7439-96-5		<0.10	ug/L					U	07/29/11
Nickel	7440-02-0		<0.20	ug/L					U	07/29/11
Silver	7440-22-4		<0.050	ug/L					U	07/29/11
Antimony	7440-36-0		<0.050	ug/L					U	07/29/11
Barium	7440-39-3		<0.20	ug/L					U	07/29/11
Boron	7440-42-8		<0.50	ug/L					U	07/29/11

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112789

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Beryllium	7440-41-7		<0.050	ug/L					U	07/29/11
Cadmium	7440-43-9		<0.050	ug/L					U	07/29/11
Chromium	7440-47-3		<0.10	ug/L					U	07/29/11
Cobalt	7440-48-4		<0.10	ug/L					U	07/29/11
Copper	7440-50-8		<0.10	ug/L					U	07/29/11
Vanadium	7440-62-2		<0.20	ug/L					U	07/29/11
Zinc	7440-66-6		<0.80	ug/L					U	07/29/11
Lead	7439-92-1		<0.10	ug/L					U	07/29/11
Mercury	7439-97-6		<0.030	ug/L					U	07/29/11
Molybdenum	7439-98-7		<0.10	ug/L					U	07/29/11
Strontium	7440-24-6		<0.10	ug/L					U	07/29/11
Tin	7440-31-5		<0.10	ug/L					U	07/29/11
Uranium	7440-61-1		<0.10	ug/L					U	07/29/11
Arsenic	7440-38-2		<0.40	ug/L					U	07/29/11
Selenium	7782-49-2		<0.30	ug/L					U	07/29/11
LCS			**QC Sample #61548**							
Barium	7440-39-3		165	mg/kg	97.4	78 - 118				07/29/11
Boron	7440-42-8		109	mg/kg	102.9	64 - 136				07/29/11
MS			**QC Sample #61549**							
			Original 112720001							
Barium	7440-39-3		123	mg/kg	127.3	70 - 130				07/29/11
Boron	7440-42-8		92.6	mg/kg	95.8	70 - 130				07/29/11
MSD			**QC Sample #61550**							
			Original 112720001					**Paired**	**61549**	

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112789

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Barium	7440-39-3		82.3	mg/kg	88.6	70 - 130	35.80	30	*	X	07/29/11
Boron	7440-42-8		75.3	mg/kg	81	70 - 130	16.70	30			07/29/11

Date: 22 July 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 100K Area AA Zone 4
Subject: General Chemistry - Sample Data Group (SDG) WSCF112619

INTRODUCTION

This memorandum presents the results of data validation for SDG WSCF112619 prepared by WSCF Analytical Laboratories. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B2FJ60	7/06/2011	Soil	C	300.0 & 7196A
B2FJ61	7/06/2011	Soil	C	300.0 & 7196A
B2FJ62	7/06/2011	Soil	C	300.0 & 7196A
B2FJ63	7/06/2011	Soil	C	300.0 & 7196A
B2FJ64	7/06/2011	Soil	C	300.0 & 7196A
B2FJ65	7/06/2011	Soil	C	300.0 & 7196A
B2FJ66	7/06/2011	Soil	C	300.0 & 7196A
B2FJ67	7/06/2011	Soil	C	300.0 & 7196A
B2FJ68	7/06/2011	Soil	C	300.0 & 7196A
B2FJ69	7/06/2011	Soil	C	300.0 & 7196A
B2FJ70	7/06/2011	Soil	C	300.0 & 7196A
B2FJ71	7/06/2011	Soil	C	300.0 & 7196A
B2FJ72	7/06/2011	Soil	C	300.0 & 7196A
B2FJ73	6/30/2011	Soil	C	300.0 & 7196A

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 except nitrate, nitrite, and phosphate – analysis within 28 days of sample collection
- Nitrate, nitrite, and phosphate – extraction within 28 days of sample collection and analysis within 48 hours of extraction
- Hexavalent chromium – analysis within 30 days of sample collection

Sample preservation for anions requires chilling to 4 degrees Celsius.

The samples were extracted and 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 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 relative percent difference (RPD) limits are ±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 have associated results <5X the reporting limits with differences <2X the reporting limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD RPD values were acceptable.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable.

Field Duplicate Samples

All field duplicate results were acceptable.

Field Split Samples

No field splits were submitted for validation.

- **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 were below the CRDLs.

- **Completeness**

SDG WSCF112619 was 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

General Chemistry Data Qualification Summary			
SDG: WSCF112619	Reviewer: AQA	Project: 100K Area AA Zone 4	Page 1 of 1
Analyte(s)	**DV Flag**	**Samples Affected**	**Reason**
Anions & Cr(VI)	None	N/A	N/A

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619001
SAF# F11-096
Sample ID B2FJ60

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.79		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		65.6		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		300		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		7.47		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	72.8		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.310		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	1.22		mg/kg	1	0.49	4.9	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619002
SAF# F11-096
Sample ID B2FJ61

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	4.9	07/06/11
Sulfate	14808-79-8	LA-533-410		59.7		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		323		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		8.31		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	55.1		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.150		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.834		mg/kg	1	0.48	4.8	07/13/11

LS
7-22-2011

MDL = Minimum Detection
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TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619003
SAF# F11-096
Sample ID B2FJ62

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.30		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		2350		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		298		mg/kg	1	0.097	0.97	07/13/11
Nickel	7440-02-0	LA-505-412		6.04		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	52.7		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.176		mg/kg	1	0.097	0.49	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.49		mg/kg	1	0.49	4.9	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619004
SAF# F11-096
Sample ID B2FJ63

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		164		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		360		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		9.38		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	66.6		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.269		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.976		mg/kg	1	0.49	4.9	07/13/11

LS
7-22-2011

MDL = Minimum Detection
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TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619005
SAF# F11-096
Sample ID B2FJ64

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	U	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		174		mg/kg	1	3.6	52	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		287		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		6.52		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	42.5		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.193		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.671		mg/kg	1	0.49	4.9	07/13/11

LS
7-22-2011

MDL = Minimum Detection
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TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619006
SAF# F11-096
Sample ID B2FJ65

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/06/11
Nitrate-N	NO3-N	LA-533-410	U	<0.96		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		102		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		308		mg/kg	1	0.098	0.98	07/13/11
Nickel	7440-02-0	LA-505-412		7.56		mg/kg	1	0.20	2.0	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.098		mg/kg	1	0.098	0.98	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	46.7		mg/kg	1	0.20	2.0	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.179		mg/kg	1	0.098	0.49	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.49		mg/kg	1	0.49	4.9	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619007
SAF# F11-096
Sample ID B2FJ66

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	2.11		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		500		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		320		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412		9.39		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	51.2		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.178		mg/kg	1	0.095	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.773		mg/kg	1	0.48	4.8	07/13/11

LS
7-22-2011

MDL = Minimum Detection
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TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619008
SAF# F11-096
Sample ID B2FJ67

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/06/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/06/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/06/11
Nitrate-N	NO3-N	LA-533-410	B	1.08		mg/kg	1	0.96	5.0	07/06/11
Sulfate	14808-79-8	LA-533-410		85.1		mg/kg	1	3.6	53	07/06/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		299		mg/kg	1	0.097	0.97	07/13/11
Nickel	7440-02-0	LA-505-412		6.68		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	44.8		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.186		mg/kg	1	0.097	0.49	07/13/11
Boron	7440-42-8	LA-505-412	B	0.769		mg/kg	1	0.49	4.9	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619009
SAF# F11-096
Sample ID B2FJ68

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	1.64		mg/kg	1	0.95	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	9.50		mg/kg	1	3.6	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		226		mg/kg	1	0.096	0.96	07/13/11
Nickel	7440-02-0	LA-505-412		5.35		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.096		mg/kg	1	0.096	0.96	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	45.5		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.246		mg/kg	1	0.096	0.48	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.48		mg/kg	1	0.48	4.8	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619010
SAF# F11-096
Sample ID B2FJ69

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410		117		mg/kg	1	3.6	52	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		367		mg/kg	1	0.097	0.97	07/13/11
Nickel	7440-02-0	LA-505-412		8.83		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.097		mg/kg	1	0.097	0.97	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.29		mg/kg	1	0.29	2.9	07/13/11
Barium	7440-39-3	LA-505-412	N	55.7		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.379		mg/kg	1	0.097	0.48	07/13/11
Boron	7440-42-8	LA-505-412	B	0.552		mg/kg	1	0.48	4.8	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619011
SAF# F11-096
Sample ID B2FJ70

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	1.56		mg/kg	1	0.96	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	4.16		mg/kg	1	3.6	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		256		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412		6.45		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	40.9		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.307		mg/kg	1	0.095	0.47	07/13/11
~~Boron~~	~~7440-42-8~~	~~LA-505-412~~	~~B~~	~~0.606~~		~~mg/kg~~	~~1~~	~~0.47~~	~~4.7~~	~~07/13/11~~

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619012
SAF# F11-096
Sample ID B2FJ71

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.7	07/07/11
Chloride	16887-00-6	LA-533-410	B	4.69		mg/kg	1	3.2	21	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	5.0	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	2.96		mg/kg	1	0.97	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	11.3		mg/kg	1	3.7	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		270		mg/kg	1	0.095	0.95	07/13/11
Nickel	7440-02-0	LA-505-412		6.71		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.095		mg/kg	1	0.095	0.95	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	45.7		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.161		mg/kg	1	0.095	0.47	07/13/11
Boron	7440-42-8	LA-505-412	U	<0.47		mg/kg	1	0.47	4.7	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619013
SAF# F11-096
Sample ID B2FJ72

Matrix SOIL
Sampled 07/06/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	21	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	B	1.50		mg/kg	1	0.96	5.0	07/07/11
Sulfate	14808-79-8	LA-533-410	B	44.0		mg/kg	1	3.6	53	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
~~**ICPMS Prep**~~										~~**07/12/11**~~
ICP-MS										
Manganese	7439-96-5	LA-505-412		377		mg/kg	1	0.093	0.93	07/13/11
Nickel	7440-02-0	LA-505-412		11.7		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.093		mg/kg	1	0.093	0.93	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	69.2		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.418		mg/kg	1	0.093	0.46	07/13/11
~~Boron~~	~~7440-42-8~~	~~LA-505-412~~	~~B~~	~~1.62~~		~~mg/kg~~	~~1~~	~~0.46~~	~~4.6~~	~~07/13/11~~

LS 7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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 Michael Neely
Department Inorganic

Group # WSCF112619

Sample # 112619014
SAF# F11-096
Sample ID B2FJ73

Matrix SOIL
Sampled 06/30/11
Received 07/06/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**07/06/11**
Anions by IC										
Fluoride	16984-48-8	LA-533-410	UN	<1.8		mg/kg	1	1.8	3.6	07/07/11
Chloride	16887-00-6	LA-533-410	U	<3.1		mg/kg	1	3.1	20	07/07/11
Nitrite-N	NO2-N	LA-533-410	U	<1.0		mg/kg	1	1.0	4.9	07/07/11
Nitrate-N	NO3-N	LA-533-410	U	<0.95		mg/kg	1	0.95	4.9	07/07/11
Sulfate	14808-79-8	LA-533-410	U	<3.6		mg/kg	1	3.6	52	07/07/11
Cr(VI) Prep										**07/11/11**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.50	07/11/11
ICPMS Prep										**07/12/11**
ICP-MS										
Manganese	7439-96-5	LA-505-412		297		mg/kg	1	0.094	0.94	07/13/11
Nickel	7440-02-0	LA-505-412		7.33		mg/kg	1	0.19	1.9	07/13/11
Silver	7440-22-4	LA-505-412	U	<0.094		mg/kg	1	0.094	0.94	07/13/11
Antimony	7440-36-0	LA-505-412	U	<0.28		mg/kg	1	0.28	2.8	07/13/11
Barium	7440-39-3	LA-505-412	N	55.1		mg/kg	1	0.19	1.9	07/13/11
Beryllium	7440-41-7	LA-505-412	B	0.349		mg/kg	1	0.094	0.47	07/13/11
Boron	7440-42-8	LA-505-412	B	0.519		mg/kg	1	0.47	4.7	07/13/11

LS
7-22-2011

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
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 diltution 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

Attachment 2
Narrative
WSCF112619

Revision: This report has been revised to include Boron QC results that were missing from the original report.

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):

- Batch 185391

Attachment 2
Narrative
WSCF112619

- Fluoride - Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.

- Batch 185387
  - Sulfate - exceeded spiking levels by a factor of 4. Spike recoveries and associated RPDs are not valid.
  - All applicable QC controls are within the established limits.

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):

- Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- 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):

- Barium – Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" 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** — F11-096-061 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY: [ ]	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: Area AA Zone 4 Sample 1	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil	SAF NO.: F11-096	
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

112619

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ60	SOIL	JUL 06 2011	0742	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	JUL 06 2011 1240	M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-062 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 2	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: GW9-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ61	2	SOIL	JUL 06 2011	0812	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-096-063

PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: LUKE, SN

TELEPHONE NO.: 372-1667

PROJECT COORDINATOR: LUKE, SN

PRICE CODE: C01

DATA TURNAROUND: 12 Days / 12 Days

SAMPLING LOCATION: Area AA Zone 4 Sample 3

PROJECT DESIGNATION: Area AA In-Process Sampling - Soil

SAF NO.: F11-096

AIR QUALITY: ☐

ICE CHEST NO.: GWS-007

FIELD LOGBOOK NO.: HNF-N-507-72

ACTUAL SAMPLE DEPTH: SURFACE

COA: 302682ES10

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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ62	3	SOIL	JUL 06 2011	0824	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 0910	M.Nelson	JUL 06 2011 1340

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-096-064 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1657	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 4	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N 507.22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01

AIR QUALITY: ☐

DATA TURNAROUND: 12 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ63	4	SOIL	JUL 06 2011	0848	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1210	M. Nelson M. Nelson	JUL 06 2011 1210
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

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-065 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 5	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: Geo 5-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SFE ITEM (1) IN SPECIAL INSTRUCTIONS	SLE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ64	5 SOIL	JUL 06 2011	0856	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011	ap M. Nelson M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-066 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 6	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: G-WS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: ☐ — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ65	SOIL	JUL 06 2011	0910	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M Nelson Mines	JUL 06 2011 1340

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-067 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
SAMPLING LOCATION: Area AA Zone 4 Sample 7	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
ICE CHEST NO.: GW8-007	FIELD LOGBOOK NO.: HNF-N-507 22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C01 — AIR QUALITY: [ ] — DATA TURNAROUND: 12 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE — **ORIGINAL**

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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ66	7	SOIL	JUL 06 2011	0922	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1210	M Noisom M Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-068 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: Area AA Zone 4 Sample 8	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
AIR QUALITY: ☐			
ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-587 22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	Cool~4C
HOLDING TIME	6 Months	28 Days/48 Hours
TYPE OF CONTAINER	G/P	G/F
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ67	8	SOIL	JUL 0 6 2011	0932	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: JUL 0 6 2011 1340	RECEIVED BY/STORED IN: M. Nelson	DATE/TIME: JUL 0 6 2011 1340
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

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-069 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: Area AA Zone 4 Sample 9	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
AIR QUALITY: ☐			
ICE CHEST NO.: GW4007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ68	9	SOIL	JUL 06 2011	1000	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M. Nelson M.L.N.	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-070 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY: ☐	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: Area AA Zone 4 Sample 10	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil	SAF NO.: F11-096	
ICE CHEST NO.: GW9-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ69 10	SOIL	JUL 06 2011	1010	✓	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	JUL 06 2011 1240	M Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-518 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-071 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	SAMPLING LOCATION: Area AA Zone 4 Sample 11	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil
SAF NO.: F11-096	AIR QUALITY: ☐	ICE CHEST NO.: GW3-007	FIELD LOGBOOK NO.: HNF.N.507.22
ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ70	SOIL	JUL 06 2011	1018	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	JUL 06 2011 1240	M. Nelson	JUL 06 2011 1240

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003 618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-072 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	AIR QUALITY:	DATA TURNAROUND: 12 Days / 12 Days	
SAMPLING LOCATION: Area AA Zone 4 Sample 12	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil	SAF NO.: F11-096	
ICE CHEST NO.: GEOS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10
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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ71	12	SOIL	JUL 06 2011	1629	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	JUL 06 2011 1240	M. Nelson M. Nelson	JUL 06 2011 1340

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-073 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	SAMPLING LOCATION: Area AA Zone 4 Sample 13	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil
SAF NO.: F11-096	AIR QUALITY: ☐	ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-507-22
ACTUAL SAMPLE DEPTH: SURFACE	COA: 302682ES10	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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ72	13	SOIL	JUL 06 2011	0742	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall, CHPRC	DATE/TIME: JUL 06 2011 1240	RECEIVED BY/STORED IN: M. Nelson / M. Nelson	DATE/TIME: JUL 06 2011 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

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-096-074 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: LUKE, SN	TELEPHONE NO.: 372-1667	PROJECT COORDINATOR: LUKE, SN
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days		
SAMPLING LOCATION: Area AA Zone 4 Sample 14	PROJECT DESIGNATION: Area AA In-Process Sampling - Soil		SAF NO.: F11-096
AIR QUALITY:	ICE CHEST NO.: GWS-007	FIELD LOGBOOK NO.: HNF-N-507-22	ACTUAL SAMPLE DEPTH: 0-1'
COA: 302682ES10	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 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)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	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
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FJ73	14	SOIL	6/30/11	1135	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC [signature] 6/30/11	1200	MO1109 SSU #1 6/30/11	1200
MO 1109 SSU #1	7-6-11 1210	FM Hall [signature]	7-6-11 1210
FM Hall [signature]	7-6-11 1210	M. Nelson Hinerks	1210 7-6-11
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

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 402581ES20.
** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(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}; Chromium Hex - 7196;
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};

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

PRINTED ON 6/29/2011 — A-6003-618 (REV 2)

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: 100K Area AA Zone 4			DATA PACKAGE: VSR11-050		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 7-22-2011	
			SDG: WSCF112619		
ANALYSES PERFORMED					
Anions/IC X	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI X	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate	Cyanide	

SAMPLES/MATRIX Soil samples

B2FJ60, B2FJ61, B2FJ62, B2FJ63, B2FJ64, B2FJ65, B2FJ66, B2FJ67, B2FJ68, B2FJ69, B2FJ70, B2FJ71, B2FJ72, B2FJ73

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: None

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

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

Spike samples analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

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

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

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

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

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: None

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: None

6. HOLDING TIMES (all levels)

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

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

Comments: None

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

Appendix 6

Additional Documentation Requested By Client

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

QC Batch 185387
Associated Samples 112619001, 112619002, 112619003, 112619004, 112619005

Test Anions by Ion Chromatography (Solid)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #59985**							
Fluoride	16984-48-8		<0.036	ug/mL					U	07/06/11
Chloride	16887-00-6		<0.062	ug/mL					U	07/06/11
Nitrite-N	NO2-N		<0.020	ug/mL					U	07/06/11
Nitrate-N	NO3-N		<0.019	ug/mL					U	07/06/11
Sulfate	14808-79-8		<0.072	ug/mL					U	07/06/11
LCS			**QC Sample #59986**							
Fluoride	16984-48-8		0.909	ug/mL	91.8	90 - 110				07/06/11
Chloride	16887-00-6		1.84	ug/mL	93.2	90 - 110				07/06/11
Nitrite-N	NO2-N		0.938	ug/mL	95.8	90 - 110				07/06/11
Nitrate-N	NO3-N		0.880	ug/mL	99.4	90 - 110				07/06/11
Sulfate	14808-79-8		3.63	ug/mL	92.7	90 - 110				07/06/11
MS			**QC Sample #59987**							
			Original 112608001							
Fluoride	16984-48-8		22.2	mg/kg	87.8	80 - 120				07/06/11
Chloride	16887-00-6		49.2	mg/kg	97.4	80 - 120				07/06/11
Nitrite-N	NO2-N		23.5	mg/kg	94.2	80 - 120				07/06/11
Nitrate-N	NO3-N		22.0	mg/kg	97.4	80 - 120				07/06/11
Sulfate	14808-79-8		300	mg/kg	300.3	80 - 120			X	07/06/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MSD			**QC Sample #59988**							
			Original	**112608001**				**Paired**	**59987**	
Fluoride	16984-48-8		21.9	mg/kg	87.1	80 - 120	0.80	30		07/06/11
Chloride	16887-00-6		48.5	mg/kg	96.4	80 - 120	1.00	30		07/06/11
Nitrite-N	NO2-N		23.0	mg/kg	92.7	80 - 120	1.60	30		07/06/11
Nitrate-N	NO3-N		21.9	mg/kg	97.4	80 - 120	0.00	30		07/06/11
Sulfate	14808-79-8		265	mg/kg	266.1	80 - 120	12.10	30	X	07/06/11
DUP			**QC Sample #59989**							
			Original	**112608001**						
Fluoride	16984-48-8		<1.8	mg/kg			9.70	30	U	07/06/11
Chloride	16887-00-6		<3.1	mg/kg			4.20	30	U	07/06/11
Nitrite-N	NO2-N		<1.0	mg/kg			0.00	30	U	07/06/11
Nitrate-N	NO3-N		1.05	mg/kg			1.90	30	B	07/06/11
Sulfate	14808-79-8		409	mg/kg			9.40	30		07/06/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

QC Batch 185391 **Test** Anions by Ion Chromatography (Solid)
Associated Samples 112619006, 112619007, 112619008, 112619009, 112619010, 112619011, 112619012, 112619013, 112619014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60002**							
Fluoride	16984-48-8		<0.036	ug/mL					U	07/06/11
Chloride	16887-00-6		<0.062	ug/mL					U	07/06/11
Nitrite-N	NO2-N		<0.020	ug/mL					U	07/06/11
Nitrate-N	NO3-N		<0.019	ug/mL					U	07/06/11
Sulfate	14808-79-8		<0.072	ug/mL					U	07/06/11
LCS			**QC Sample #60003**							
Fluoride	16984-48-8		0.896	ug/mL	90.4	90 - 110				07/06/11
Chloride	16887-00-6		1.83	ug/mL	92.4	90 - 110				07/06/11
Nitrite-N	NO2-N		0.938	ug/mL	95.8	90 - 110				07/06/11
Nitrate-N	NO3-N		0.866	ug/mL	97.8	90 - 110				07/06/11
Sulfate	14808-79-8		3.73	ug/mL	95.2	90 - 110				07/06/11
MS			**QC Sample #60004**							
			Original 112619008							
Fluoride	16984-48-8	<1.8	19.5	mg/kg	77.7	80 - 120			N	07/06/11
Chloride	16887-00-6	<3.1	45.6	mg/kg	90.7	80 - 120				07/06/11
Nitrite-N	NO2-N	<1.0	23.0	mg/kg	92.5	80 - 120				07/06/11
Nitrate-N	NO3-N	1.08	21.2	mg/kg	94.5	80 - 120				07/06/11
Sulfate	14808-79-8	85.1	81.7	mg/kg	82	80 - 120				07/06/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MSD			**QC Sample #60005**							
			Original	**112619008**				**Paired**	**60004**	
Fluoride	16984-48-8	<1.8	19.5	mg/kg	77.8	80 - 120	0.10	30	N	07/06/11
Chloride	16887-00-6	<3.1	44.9	mg/kg	89.2	80 - 120	1.70	30		07/06/11
Nitrite-N	NO2-N	<1.0	22.5	mg/kg	90.6	80 - 120	2.10	30		07/06/11
Nitrate-N	NO3-N	1.08	21.0	mg/kg	93.6	80 - 120	1.00	30		07/06/11
Sulfate	14808-79-8	85.1	83.2	mg/kg	83.6	80 - 120	1.90	30		07/06/11
DUP			**QC Sample #60006**							
			Original	**112619008**						
Fluoride	16984-48-8	<1.8	<1.8	mg/kg			22.30	30	U	07/06/11
Chloride	16887-00-6	<3.1	<3.1	mg/kg			9.40	30	U	07/06/11
Nitrite-N	NO2-N	<1.0	<1.0	mg/kg			0.00	30	U	07/06/11
Nitrate-N	NO3-N	1.08	1.03	mg/kg			4.80	30	B	07/06/11
Sulfate	14808-79-8	85.1	75.1	mg/kg			12.60	30		07/06/11

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF112619

QC Batch 185471 **Test** Hexavalent chromium
Associated Samples 112619001, 112619002, 112619003, 112619004, 112619005, 112619006, 112619007, 112619008, 112619009, 112619010, 112619011, 112619012, 112619013, 112619014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #60181**							
Hexavalent chromium	18540-29-9		<0.10	ug/g					U	07/11/11
LCS			**QC Sample #60182**							
Hexavalent chromium	18540-29-9		4.17	ug/g	104.4	80 - 120				07/11/11
DUP			**QC Sample #60183**							
			Original 112619001							
Hexavalent chromium	18540-29-9	<0.10	<0.10	ug/g			0.00	30	U	07/11/11
MS			**QC Sample #60184**							
			Original 112619001							
Hexavalent chromium	18540-29-9	<0.10	2.96	ug/g	74	75 - 125			N	07/11/11
PSTSPK			**QC Sample #60185**							
Hexavalent chromium	18540-29-9		0.0463	ug/g	87	85 - 115				07/11/11
IMS			**QC Sample #60186**							
			Original 112619001							
Hexavalent chromium	18540-29-9	<0.10	315	ug/g	97.1	75 - 125				07/11/11