REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
04/05/2011	
3. Project No.	Page 1 of 3

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
VSR11-031, Data Validation Report for CHPRC - Project 183 KW, Chemical Validation - Level C	S&GRP Sample Data Groups (SDGs); WSCF103010, WSCF103013, WSCF103039, WSCF103070, WSCF103084 and WSCF103268	DL Klages	100-K Remediation Project	1107-K/100-K 942-3947

17. Comment Submittal Approval	10. Agreement With Indicated Comment Disposition(s)	11. CLOSED
Date: ____ Organization Manager (optional) (print and sign): ____	Reviewer/Point of Contact (print and sign): D.L. KLAGES/D.L. Klages Date: 4/21/11 Author/Originator (print and sign): ____	Reviewer/Point of Contact (print and sign): D.L. KLAGES/D.L. Klages Date: 4/21/11 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	Page 4, in addition to the SAP, add DD-48021, *Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas*	For our SAP, an EPA approved sampling instruction is required and directs our field work.	Add SI into references and after first SAP call out.	Y	The references typically cited in the DV report are ones actually used for the DV process. SI added per your request.	CLOSED
2	Page 5, B29D74, is an equipment blank, not a trip blank	No trip blanks are required for metals, only volatiles. The equipment blank requirement was called out in the sampling instruction	Switch trip blank language into equipment blank section	Y	Sample B29D74 is identified as a trip blank in SSR F11-026 that was used for field QC identification. Language changed to equipment blank.	CLOSED
3	Page 6, a field duplicate was collected.	B29T97 is the field duplicate to B29D66	Update to address field duplicate	Y	These were not identified as field duplicates in SSR F11-024. DVR updated (an Hg infraction occurred).	CLOSED
4	Page 7, a field split was collected.	The split for B29D45 is B29RL5 in SDG SL1018, VSR11-032.	Reference other validation report in this report for that split.	Y	These were not identified as field splits in SSR F11-024. Reference added.	CLOSED
5	Page 192, in addition to the SAP, add DD-48021, *Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-*	For our SAP, an EPA approved sampling instruction is required and	Add SI into references and after first SAP call out.	Y	The references typically cited in the DV report are ones actually used for the DV process. SI added per your request.	CLOSED

REVIEW COMMENT RECORD (RCR)	1. Date 04/05/2011	2. Review No.
	3. Project No.	Page 2 of 3

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
	KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas	directs our field work.				
6	Page 192-193, B29DM9, is an equipment blank, not a trip blank	No trip blanks are required for CrVI, only volatiles. The equipment blank requirement was called out in the sampling instruction	Switch trip blank language into equipment blank section	Y	Sample B29DM9 is identified as a trip blank in SSR F11-026 that was used for field QC identification. Language changed to equipment blank.	CLOSED
7	Page 194, a field duplicate was collected.	B29T97 is the field duplicate to B29D66	Update to address field duplicate	Y	These were not identified as field duplicates in SSR F11-024. DVR updated.	CLOSED
8	Page 194, a field split was collected.	The split for B29D45 is B29RL4 in SDG W06073, VSR11-032.	Reference other validation report in this report for that split.	Y	These were not identified as field splits in SSR F11-024. Reference added.	CLOSED
9	Page 319, in addition to the SAP, add DD-48021, *Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas*	For our SAP, an EPA approved sampling instruction is required and directs our field work.	Add SI into references and after first SAP call out.	Y	The references typically cited in the DV report are ones actually used for the DV process. SI added per your request.	CLOSED
10	Page 320, B29D74 and B29DM8, are an equipment blanks, not trip blanks	No trip blanks are required for rad analyses, only volatiles. The equipment blank requirement was called out in the sampling instruction	Switch trip blank language into equipment blank section	Y	Samples B29D74 & B29DM8 are identified as trip blanks in SSR F11-026 that was used for field QC identification. Language changed to equipment blank.	CLOSED
11	Page 320, Delete language about Ra-226 from trip/equipment blank.	Already rejected data in laboratory blank section.	Delete Ra-226.	Y	Language deleted	CLOSED
12	Page 321, a field duplicate was collected.	B29T97 is the field duplicate to B29D66	Update to address field duplicate	Y	These were not identified as field duplicates in SSR F11-024. DVR updated.	CLOSED

REVIEW COMMENT RECORD (RCR)	1. Date 04/05/2011	2. Review No.
	3. Project No.	Page 3 of 3

12. Item	13a. Comments	13b. Basis	13c. Recommendation	14. Reviewer Concurrence Required (Y or N)	15. Disposition (provide justification if **NOT** accepted)	16. Status
13	Page 321, a field split was collected.	The split for B29D45 is B29RL3 in SDG W06065, W06073, H4436, H4443, H4444 and H4456, VSR11-032.	Reference other validation report in this report for that split.	Y	These were not identified as field splits in SSR F11-024. Reference added.	CLOSED

REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
03/15/2011	
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
VSR11-031, Data Validation Report for CHPRC - Project 183 KW, Chemical Validation - Level C	S&GRP Sample Data Groups (SDGs); WSCF103010, WSCF103013, WSCF103014, WSCF103016, WSCF103039, WSCF103070, WSCF103084 and WSCF103268	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 / JAEdwards Reviewer/Point of Contact (print and sign); 03/15/2010 Date; Author/Originator (print and sign)	JA Edwards / JAEdwards Reviewer/Point of Contact (print and sign); 03/15/2010 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
	TPA-CN-264, DOE/RL-96-22, Rev. 4, *100 Area Remedial Action Sampling and Analysis Plan* Add to References and citations of SAP.	TPA-CN-264 updates not included in DOE/RL-96-22, Rev. 4,	Include in References and with SAP citation. Completes DOE/RL-96-22 for updates that have not been included in Rev. 4, or Rev. 5 of the SAP.	Y	AQA never received TPA-CN-264 and it was not referenced on the VSR form like it normally would be. The reference has been added to the DVR.	CLOSED
	(page 318 of 469) INTRODUCTION Sample B29DM8 has a Sample Date of 11/1**9**6/10 which is incorrect. COC indicates sample date of 11/16/10	Incorrect Sample Date	CHANGE: 11/1**9**6/10 TO: 11/**16**/10	Y	Change made.	CLOSED

Documents:

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
DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, September 2009
LA-505-412: Inductively Coupled Plasma-Mass Spectrometry (ICP/MS) for Trace Elements in Water and Solids
LA-265-403: Hexavalent Chromium Anaysis By Spectrophotometer or Discrete Analyzer
LA-505-412: Inductively Coupled Plasma-Mass Spectrometry (ICP/MS) for Trace Elements in Water and Solids

CHPRC - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
03/15/2011	
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
VSR11-031		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)	Scot Fitzgerald — Reviewer/Point of Contact (print and sign)
	3/15/2011 — Date	3/15/2011 — Date
	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
	No issues noted.					

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Data Validation Report for CH2M Hill
Plateau Remediation Company

VSR11-031
Project 183 KW

Chemical & Radiochemical Validation - Level C

Validation Performed By: Eyda Hergenreder **Date:** 3-11-2011

Validation Reviewed By: Carl Schlosser **Date:** 3-11-2011

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Date: 11 March 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 183 KW
Subject: Inorganics - Sample Data Groups (SDGs) WSCF103010, WSCF103013, WSCF103039, WSCF103070, WSCF103084 and WSCF103268

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF103010, WSCF103013, WSCF103039, WSCF103070, WSCF103084 and WSCF103268 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
B29D64	11/16/10	Soil	C	200.8
B29D38	11/16/10	Soil	C	200.8
B29D39	11/16/10	Soil	C	200.8
B29D42	11/16/10	Soil	C	200.8
B29D43	11/16/10	Soil	C	200.8
B29D52	11/16/10	Soil	C	200.8
B29D53	11/16/10	Soil	C	200.8
B29D54	11/16/10	Soil	C	200.8
B29D55	11/16/10	Soil	C	200.8
B29D61	11/16/10	Soil	C	200.8
B29D74	11/16/10	Water	C	200.8
B29D60	11/17/10	Soil	C	200.8
B29D62	11/17/10	Soil	C	200.8
B29D63	11/17/10	Soil	C	200.8
B29D65	11/17/10	Soil	C	200.8
B29D66	11/17/10	Soil	C	200.8
B29D67	11/17/10	Soil	C	200.8
B29D68	11/17/10	Soil	C	200.8
B29D69	11/17/10	Soil	C	200.8
B29D70	11/17/10	Soil	C	200.8
B29D71	11/17/10	Soil	C	200.8
B29D72	11/17/10	Soil	C	200.8
B29D36	11/18/10	Soil	C	200.8
B29D37	11/18/10	Soil	C	200.8
B29D40	11/18/10	Soil	C	200.8
B29D41	11/18/10	Soil	C	200.8
B29D44	11/18/10	Soil	C	200.8
B29D45	11/18/10	Soil	C	200.8
B29D46	11/18/10	Soil	C	200.8
B29D56	11/18/10	Soil	C	200.8

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B29D57	11/18/10	Soil	C	200.8
B29D58	11/18/10	Soil	C	200.8
B29D59	11/18/10	Soil	C	200.8
B29D47	11/19/10	Soil	C	200.8
B29D48	11/19/10	Soil	C	200.8
B29D49	11/19/10	Soil	C	200.8
B29D50	11/19/10	Soil	C	200.8
B29D51	11/19/10	Soil	C	200.8
B29T97	12/07/10	Soil	C	200.8

Data validation was conducted in accordance with the CHPRC validation statement of work, the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5/TPA-CN-264 (SAP), and the Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas, DD-48021. 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. Sample preservation for soil samples requires chilling to 4 degrees Celsius. Sample preservation for the water sample requires acid preservation with nitric acid to pH <2.

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

- **Blanks**

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

Laboratory Blanks

All laboratory blank results were acceptable with the following exceptions.

For SDG WSCF103010, the Se laboratory blank result was > the method detection limit (MDL) but < the reporting limit (RL). All associated Se sample results were detects < the RL and should be qualified as non-detects at the RL (3.2 mg/kg or 3.3 mg/kg) and flagged "U." See the table in Appendix 2 for a listing of all affected sample results.

For SDG WSCF103039, the Ni and Se laboratory blank results were > the MDLs but < the RLs. All associated Se sample results were detects < the RL and should be qualified as non-detects at the RL (3.2 mg/kg) and flagged "U." All associated Ni sample results were detects > the RL and >10X the blank value and should not be qualified. See the table in Appendix 2 for a listing of all affected sample results.

For SDGs WSCF103070 and WSCF103084, the Ni laboratory blank results were > the MDL but < the RL. All associated Ni sample results were detects > the RL but <10X the blank value and should be qualified as estimates and flagged "J+" based on professional judgment. See the table in Appendix 2 for a listing of all affected sample results.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

All equipment blank results were acceptable with the following exceptions. Al, Mn, Ba, Co, Cu, V, Zn, Pb and Sr were detected in equipment blank B29D74.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results, laboratory control sample results, and ICP-AES interference check 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. The interference check sample limits are ones specified by the DV procedure.

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

All MS/MSD recoveries were acceptable with the following exceptions.

For SDG WSCF103010, the MS recovery for Al was above the upper acceptance limit. All associated Al 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.

For SDGs WSCF103070 and WSCF103084, the MSD recoveries for Mn were above the upper acceptance limit. All associated Mn 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.

For SDG WSCF103268, the MS recoveries for Ba and Sr were below the lower acceptance limits. The Ba and Sr results for sample B29T97 were detects and should be qualified as estimates and flagged "J-."

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exceptions.

For SDGs WSCF103010, WSCF103070 and WSCF103084, the LSC recoveries for Sb were above the upper acceptance limit but <170%. All associated Sb sample results that were detects should be qualified as estimates and flagged "J+." All associated Sb sample results that were non-detects should not be qualified. See the table in Appendix 2 for a listing of all affected sample results.

For SDGs WSCF103039 and WSCF103268 the LCS recoveries for Sb were >170%. All associated sample results should be qualified as unusable and flagged "R" for detects and flagged "UR" for non-detects. See the table in Appendix 2 for a listing of all affected sample results.

ICP-AES Interference Check Samples (ICSs)

ICS data was not included in the data package. Sample results should not be qualified based on this.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results, field split sample results, and ICP serial dilution 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.

MS/MSD Samples

All MS/MSD RPD values were acceptable with the following exceptions.

For SDG WSCF103268, the RPD values for Ba and Sr were above the acceptance limit. The Ba and Sr results for sample B29T97 were detects and should be qualified as estimates and would be flagged J, but were further flagged "J-" due to a MS/MSD infraction.

Field Duplicate Samples

All field duplicate results were acceptable with the following exceptions. Samples B29D66 and B29T97 had an Hg RPD = 78%.

Field Split Samples

Sample B29D45 is a field split to sample B29RL5 assigned to SDG SL1018 in VSR11-032.

ICP Serial Dilution Samples

ICS serial dilution data was not included in the data package. Sample results should not be qualified based on this.

- **ICP-MS Internal Standards**

The analysis of ICP-MS internal standards is used to determine the existences and magnitude of instrument drift and physical interferences. The criteria for evaluation of internal standard results apply to all samples (including QC) analyzed during the analytical run, beginning with the calibration.

ICP-MS internal standards data was not included in the data package. Sample results should not be qualified based on this.

- **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**

SDGs WSCF103010, WSCF103013, WSCF103039, WSCF103070, WSCF103084 and WSCF103268 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 for Sb was 31%. The completion for remaining analytes was 100%.

MAJOR DEFICIENCIES

Major deficiencies leading to qualification of Sb results as unusable were due to a very high LCS recoveries. See the table in Appendix 2 for a listing of all affected sample results.

MINOR DEFICIENCIES

Multiple minor deficiencies leading to qualification of sample results as estimates occurred. 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.

TPA-CN-264, TPA Change Notice Form for DOE/RL-96-22, Rev. 5

DD-48021, *Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas*

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: WSCF103010, WSCF103013, WSCF103039, WSCF103070, WSCF103084, WSCF103268	Reviewer: AQA	Project: 183 KW	
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
Se	3.2U	B29D64, B29D39, B29D42, B29D43, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72	Laboratory blank contamination
Se	3.3U	B29D38, B29D52, B29D53, B29D54	Laboratory blank contamination
Ni	J+	B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51	Laboratory blank contamination
Al	J+	B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61	High MS recovery
Mn	J+	B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51	High MSD recovery
Ba, Sr	J-	B29T97	Low MS recoveries and poor MS/MSD precision

Sb	J+	B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D37, B29D40, B29D44, B29D45, B29D46, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51	High LCS recoveries
Sb	**R**	B29D60, B29D63, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29T97	Very high LCS recoveries
Sb	**UR**	B29D62, B29D65, B29D72	Very high LCS recoveries

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103010

Sample # 103010001
SAF# F11-024
Sample ID B29D64

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.099~~		~~ug/g~~	~~1~~	~~0.099~~	~~0.50~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		5930		mg/kg	1	5.3	110	11/19/10
Manganese		7439-96-5	LA-505-412		433		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		13.0		mg/kg	1	0.21	2.1	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony		7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		61.6		mg/kg	1	0.21	2.1	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.394		mg/kg	1	0.11	0.53	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		5.53		mg/kg	1	0.53	5.3	11/19/10
Cobalt		7440-48-4	LA-505-412		13.1		mg/kg	1	0.11	0.53	11/19/10
Copper		7440-50-8	LA-505-412		20.3		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		98.2		mg/kg	1	0.21	2.1	11/19/10
Zinc		7440-66-6	LA-505-412		65.1		mg/kg	1	0.85	5.3	11/19/10
Lead		7439-92-1	LA-505-412		3.25		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010001
SAF# F11-024
Sample ID B29D64

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.549		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		30.6		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/19/10
Tin		7440-31-5	LA-505-412		0.558		mg/kg	1	0.11	0.53	11/19/10
Arsenic		7440-38-2	LA-505-412	B	1.83		mg/kg	1	0.42	4.2	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.84		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103010

Sample # 103010002
SAF# F11-024
Sample ID B29D38

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		6170		mg/kg	1	5.5	110	11/19/10
Manganese		7439-96-5	LA-505-412		402		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		14.5		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	0.422		mg/kg	1	0.33	3.3	11/19/10
Barium		7440-39-3	LA-505-412		58.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.270		mg/kg	1	0.11	0.55	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		5.72		mg/kg	1	0.55	5.5	11/19/10
Cobalt		7440-48-4	LA-505-412		11.7		mg/kg	1	0.11	0.55	11/19/10
Copper		7440-50-8	LA-505-412		17.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		85.0		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		55.0		mg/kg	1	0.88	5.5	11/19/10
Lead		7439-92-1	LA-505-412		3.45		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010002
SAF# F11-024
Sample ID B29D38

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.055		mg/kg	1	0.055	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.496		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		25.7		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.55	11/19/10
Tin		7440-31-5	LA-505-412		0.552		mg/kg	1	0.11	0.55	11/19/10
Arsenic		7440-38-2	LA-505-412	B	2.70		mg/kg	1	0.44	4.4	11/19/10
Selenium	3.3U	7782-49-2	LA-505-412	BC	1.55		mg/kg	1	0.33	3.3	11/19/10

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 # WSCF103010

Sample # 103010003
SAF# F11-024
Sample ID B29D39

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.148~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.52~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		7280		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		402		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		12.8		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	0.846		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		64.4		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.250		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		6.27		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		12.4		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		19.5		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		96.3		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		78.5		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		4.89		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010003
SAF# F11-024
Sample ID B29D39

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.484		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		31.5		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.735		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.73		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	2.29		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103010

Sample # 103010004
SAF# F11-024
Sample ID B29D42

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		6470		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		410		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		12.9		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	0.639		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		61.3		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.298		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		6.66		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		12.7		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		19.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		92.6		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		60.6		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		7.85		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010004
SAF# F11-024
Sample ID B29D42

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.577		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		27.8		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.604		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.34		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.50		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103010

Sample # 103010005
SAF# F11-024
Sample ID B29D43

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.161~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.52~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		5820		mg/kg	1	5.3	110	11/19/10
Manganese		7439-96-5	LA-505-412		606		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		15.2		mg/kg	1	0.21	2.1	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	2.05		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		76.8		mg/kg	1	0.21	2.1	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.287		mg/kg	1	0.11	0.53	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		7.02		mg/kg	1	0.53	5.3	11/19/10
Cobalt		7440-48-4	LA-505-412		12.6		mg/kg	1	0.11	0.53	11/19/10
Copper		7440-50-8	LA-505-412		23.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		92.2		mg/kg	1	0.21	2.1	11/19/10
Zinc		7440-66-6	LA-505-412		71.8		mg/kg	1	0.85	5.3	11/19/10
Lead		7439-92-1	LA-505-412		4.63		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010005
SAF# F11-024
Sample ID B29D43

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.663		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		33.5		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/19/10
Tin		7440-31-5	LA-505-412		0.953		mg/kg	1	0.11	0.53	11/19/10
Arsenic		7440-38-2	LA-505-412		5.31		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.94		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103010

Sample # 103010006
SAF# F11-024
Sample ID B29D52

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		6680		mg/kg	1	5.5	110	11/19/10
Manganese		7439-96-5	LA-505-412		385		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		14.0		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	1.19		mg/kg	1	0.33	3.3	11/19/10
Barium		7440-39-3	LA-505-412		64.1		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.338		mg/kg	1	0.11	0.55	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		6.04		mg/kg	1	0.55	5.5	11/19/10
Cobalt		7440-48-4	LA-505-412		11.5		mg/kg	1	0.11	0.55	11/19/10
Copper		7440-50-8	LA-505-412		17.6		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		83.1		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		59.1		mg/kg	1	0.87	5.5	11/19/10
Lead		7439-92-1	LA-505-412		3.80		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010006
SAF# F11-024
Sample ID B29D52

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.055		mg/kg	1	0.055	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.476		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		30.9		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.55	11/19/10
Tin		7440-31-5	LA-505-412		0.651		mg/kg	1	0.11	0.55	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.81		mg/kg	1	0.44	4.4	11/19/10
Selenium	3.3U	7782-49-2	LA-505-412	BC	2.33		mg/kg	1	0.33	3.3	11/19/10

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 # WSCF103010

Sample # 103010007
SAF# F11-024
Sample ID B29D53

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		7800		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		437		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		14.8		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	0.678		mg/kg	1	0.33	3.3	11/19/10
Barium		7440-39-3	LA-505-412		65.0		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412		0.554		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		10.8		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		12.5		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		21.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		88.9		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		67.1		mg/kg	1	0.87	5.4	11/19/10
Lead		7439-92-1	LA-505-412		12.0		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010007
SAF# F11-024
Sample ID B29D53

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.496		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		31.6		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.665		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.30		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.3U	7782-49-2	LA-505-412	BC	2.41		mg/kg	1	0.33	3.3	11/19/10

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 # WSCF103010

Sample # 103010008
SAF# F11-024
Sample ID B29D54

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		6860		mg/kg	1	5.5	110	11/19/10
Manganese		7439-96-5	LA-505-412		434		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		13.8		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	0.601		mg/kg	1	0.33	3.3	11/19/10
Barium		7440-39-3	LA-505-412		58.7		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.299		mg/kg	1	0.11	0.55	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		7.85		mg/kg	1	0.55	5.5	11/19/10
Cobalt		7440-48-4	LA-505-412		12.4		mg/kg	1	0.11	0.55	11/19/10
Copper		7440-50-8	LA-505-412		19.0		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		93.2		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		61.2		mg/kg	1	0.87	5.5	11/19/10
Lead		7439-92-1	LA-505-412		3.62		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010008
SAF# F11-024
Sample ID B29D54

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.055		mg/kg	1	0.055	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.487		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		31.9		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.55	11/19/10
Tin		7440-31-5	LA-505-412		0.602		mg/kg	1	0.11	0.55	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.40		mg/kg	1	0.44	4.4	11/19/10
Selenium	3.3U	7782-49-2	LA-505-412	BC	1.70		mg/kg	1	0.33	3.3	11/19/10

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 # WSCF103010

Sample # 103010009
SAF# F11-024
Sample ID B29D55

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.51~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		6860		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		384		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		11.2		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	J+	7440-36-0	LA-505-412	B	1.40		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		60.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.386		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		6.47		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		11.6		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		18.9		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		87.6		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		63.5		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		5.56		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010009
SAF# F11-024
Sample ID B29D55

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412		0.279		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.582		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		31.8		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.724		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412		4.48		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.90		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103010

Sample # 103010010
SAF# F11-024
Sample ID B29D61

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/18/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~11/18/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum	J+	7429-90-5	LA-505-412		6140		mg/kg	1	5.3	110	11/19/10
Manganese		7439-96-5	LA-505-412		438		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		11.4		mg/kg	1	0.21	2.1	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony		7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		61.4		mg/kg	1	0.21	2.1	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.286		mg/kg	1	0.11	0.53	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		5.59		mg/kg	1	0.53	5.3	11/19/10
Cobalt		7440-48-4	LA-505-412		13.5		mg/kg	1	0.11	0.53	11/19/10
Copper		7440-50-8	LA-505-412		19.0		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		109		mg/kg	1	0.21	2.1	11/19/10
Zinc		7440-66-6	LA-505-412		64.2		mg/kg	1	0.85	5.3	11/19/10
Lead		7439-92-1	LA-505-412		2.86		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010010
SAF# F11-024
Sample ID B29D61

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.519		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		29.9		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/19/10
Tin		7440-31-5	LA-505-412	B	0.527		mg/kg	1	0.11	0.53	11/19/10
Arsenic		7440-38-2	LA-505-412	B	1.60		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.80		mg/kg	1	0.32	3.2	11/19/10

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

REVISION 1

Attention Michael Neely
Department Inorganic

Group # WSCF103013

Sample # 103013001
SAF# F11-026
Sample ID B29D74

Matrix WATER
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**11/19/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	B	193		ug/L	2	10	200	11/19/10
Manganese	7439-96-5	LA-505-412		24.3		ug/L	2	0.20	2.0	11/19/10
Nickel	7440-02-0	LA-505-412	U	<0.40		ug/L	2	0.40	4.0	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.20		ug/L	2	0.20	2.0	11/19/10
Antimony	7440-36-0	LA-505-412	U	<0.60		ug/L	2	0.60	6.0	11/19/10
Barium	7440-39-3	LA-505-412	B	3.89		ug/L	2	0.40	4.0	11/19/10
Beryllium	7440-41-7	LA-505-412	U	<0.10		ug/L	2	0.10	1.0	11/19/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	11/19/10
Chromium	7440-47-3	LA-505-412	UD	<1.0		ug/L	2	1.0	10	11/19/10
Cobalt	7440-48-4	LA-505-412	B	0.440		ug/L	2	0.10	0.50	11/19/10
Copper	7440-50-8	LA-505-412		6.51		ug/L	2	0.20	2.0	11/19/10
Vanadium	7440-62-2	LA-505-412	BD	0.417		ug/L	2	0.40	4.0	11/19/10
Zinc	7440-66-6	LA-505-412	B	7.84		ug/L	2	1.6	10	11/19/10
Lead	7439-92-1	LA-505-412	BD	1.48		ug/L	2	0.20	2.0	11/19/10
Mercury	7439-97-6	LA-505-412	UD	<0.10		ug/L	2	0.10	0.40	11/19/10
Molybdenum	7439-98-7	LA-505-412	U	<0.10		ug/L	2	0.10	1.0	11/19/10
Strontium	7440-24-6	LA-505-412		2.75		ug/L	2	0.20	2.0	11/19/10

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)

REVISED103013 -

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Inorganic

Group # WSCF103013

Sample # 103013001
SAF# F11-026
Sample ID B29D74

Matrix WATER
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Thallium	7440-28-0	LA-505-412	U	<0.10		ug/L	2	0.10	1.0	11/19/10
Tin	7440-31-5	LA-505-412	U	<0.10		ug/L	2	0.10	1.0	11/19/10
Arsenic	7440-38-2	LA-505-412	U	<0.80		ug/L	2	0.80	8.0	11/19/10
Selenium	7782-49-2	LA-505-412	UD	<0.60		ug/L	2	0.60	6.0	11/19/10

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)

REVISED103013 -

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103039

Sample # 103039001
SAF# F11-024
Sample ID B29D60

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		5750		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		360		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412	C	8.59		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	0.399		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		51.8		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.278		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		5.49		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		10.8		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		16.6		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		85.2		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		55.6		mg/kg	1	0.87	5.4	11/19/10
Lead		7439-92-1	LA-505-412		3.57		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039001
SAF# F11-024
Sample ID B29D60

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.445		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		27.1		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412	B	0.539		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	2.66		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.60		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039002
SAF# F11-024
Sample ID B29D62

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		6020		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		389		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		9.22		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	UR	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		57.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.270		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412	B	5.22		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		11.6		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		18.5		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		80.4		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		56.6		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		2.94		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039002
SAF# F11-024
Sample ID B29D62

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.482		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		28.5		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.547		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	2.12		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.87		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039003
SAF# F11-024
Sample ID B29D63

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		7380		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		550		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		11.3		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	1.75		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		77.7		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.245		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	B	0.124		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		7.08		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		13.8		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		22.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		113		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		76.2		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		4.91		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039003
SAF# F11-024
Sample ID B29D63

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.737		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		40.8		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.880		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412		5.00		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.94		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039004
SAF# F11-024
Sample ID B29D65

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		6120		mg/kg	1	5.3	110	11/19/10
Manganese		7439-96-5	LA-505-412		408		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		10.6		mg/kg	1	0.21	2.1	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	UR	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		59.5		mg/kg	1	0.21	2.1	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.417		mg/kg	1	0.11	0.53	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		5.52		mg/kg	1	0.53	5.3	11/19/10
Cobalt		7440-48-4	LA-505-412		12.5		mg/kg	1	0.11	0.53	11/19/10
Copper		7440-50-8	LA-505-412		19.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		92.5		mg/kg	1	0.21	2.1	11/19/10
Zinc		7440-66-6	LA-505-412		61.9		mg/kg	1	0.85	5.3	11/19/10
Lead		7439-92-1	LA-505-412		3.78		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039004
SAF# F11-024
Sample ID B29D65

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.518		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		28.2		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/19/10
Tin		7440-31-5	LA-505-412		0.599		mg/kg	1	0.11	0.53	11/19/10
Arsenic		7440-38-2	LA-505-412	B	2.27		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	2.22		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039005
SAF# F11-024
Sample ID B29D66

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.52~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		5610		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		354		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		8.94		mg/kg	1	0.21	2.1	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	0.906		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		54.0		mg/kg	1	0.21	2.1	11/19/10
Beryllium		7440-41-7	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		6.82		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		11.0		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		16.8		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		87.8		mg/kg	1	0.21	2.1	11/19/10
Zinc		7440-66-6	LA-505-412		58.1		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		4.00		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039005
SAF# F11-024
Sample ID B29D66

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412		2.54		mg/kg	1	0.054	0.21	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.655		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		30.4		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.676		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.37		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	2.32		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039006
SAF# F11-024
Sample ID B29D67

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		6560		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		385		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		12.7		mg/kg	1	0.21	2.1	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	1.19		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		58.7		mg/kg	1	0.21	2.1	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.208		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		5.96		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		12.4		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		21.0		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		87.5		mg/kg	1	0.21	2.1	11/19/10
Zinc		7440-66-6	LA-505-412		61.2		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		3.40		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039006
SAF# F11-024
Sample ID B29D67

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.21	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.524		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		40.1		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.726		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.69		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	2.24		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039007
SAF# F11-024
Sample ID B29D68

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		6590		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		399		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		11.4		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	0.664		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		66.1		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.251		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		7.41		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		12.1		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		20.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		80.0		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		59.5		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		13.2		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039007
SAF# F11-024
Sample ID B29D68

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412		0.350		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.495		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		34.5		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.703		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.27		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	2.83		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039008
SAF# F11-024
Sample ID B29D69

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		6060		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		341		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		9.33		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	1.19		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		58.9		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.182		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		6.63		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		11.6		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		18.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		77.9		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		56.3		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		4.01		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039008
SAF# F11-024
Sample ID B29D69

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.532		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		31.2		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.659		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.61		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.41		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039009
SAF# F11-024
Sample ID B29D70

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		6050		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		319		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		8.42		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	1.13		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		55.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.155		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412		6.47		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		9.71		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		18.2		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		71.9		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		57.7		mg/kg	1	0.87	5.4	11/19/10
Lead		7439-92-1	LA-505-412		5.67		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039009
SAF# F11-024
Sample ID B29D70

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	B	0.0729		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.498		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		29.8		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.827		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.87		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	2.02		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039010
SAF# F11-024
Sample ID B29D71

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		5980		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		360		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		8.61		mg/kg	1	0.22	2.2	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	R	7440-36-0	LA-505-412	B	1.03		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		65.0		mg/kg	1	0.22	2.2	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.245		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412	B	4.90		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		11.0		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		17.6		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		74.0		mg/kg	1	0.22	2.2	11/19/10
Zinc		7440-66-6	LA-505-412		55.0		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		3.60		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039010
SAF# F11-024
Sample ID B29D71

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.22	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.442		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		34.8		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412		0.575		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	3.58		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.64		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103039

Sample # 103039011
SAF# F11-024
Sample ID B29D72

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/23/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~11/23/10~~
ICPMS Prep											**11/18/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		5670		mg/kg	1	5.4	110	11/19/10
Manganese		7439-96-5	LA-505-412		368		mg/kg	1	0.11	1.1	11/19/10
Nickel		7440-02-0	LA-505-412		10.2		mg/kg	1	0.21	2.1	11/19/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	UR	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium		7440-39-3	LA-505-412		53.2		mg/kg	1	0.21	2.1	11/19/10
Beryllium		7440-41-7	LA-505-412	B	0.189		mg/kg	1	0.11	0.54	11/19/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium		7440-47-3	LA-505-412	B	5.06		mg/kg	1	0.54	5.4	11/19/10
Cobalt		7440-48-4	LA-505-412		11.3		mg/kg	1	0.11	0.54	11/19/10
Copper		7440-50-8	LA-505-412		18.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium		7440-62-2	LA-505-412		76.0		mg/kg	1	0.21	2.1	11/19/10
Zinc		7440-66-6	LA-505-412		51.2		mg/kg	1	0.86	5.4	11/19/10
Lead		7439-92-1	LA-505-412		2.54		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039011
SAF# F11-024
Sample ID B29D72

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.21	11/19/10
Molybdenum		7439-98-7	LA-505-412	B	0.428		mg/kg	1	0.11	1.1	11/19/10
Strontium		7440-24-6	LA-505-412		26.9		mg/kg	1	0.11	1.1	11/19/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Tin		7440-31-5	LA-505-412	B	0.432		mg/kg	1	0.11	0.54	11/19/10
Arsenic		7440-38-2	LA-505-412	B	2.29		mg/kg	1	0.43	4.3	11/19/10
Selenium	3.2U	7782-49-2	LA-505-412	BC	1.98		mg/kg	1	0.32	3.2	11/19/10

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 # WSCF103070

Sample # 103070001
SAF# F11-024
Sample ID B29D36

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		5790		mg/kg	1	5.5	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	359		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		6.04		mg/kg	1	0.22	2.2	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony		7440-36-0	LA-505-412	U	<0.33		mg/kg	1	0.33	3.3	11/22/10
Barium		7440-39-3	LA-505-412		59.9		mg/kg	1	0.22	2.2	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.357		mg/kg	1	0.11	0.55	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		6.44		mg/kg	1	0.55	5.5	11/22/10
Cobalt		7440-48-4	LA-505-412		11.5		mg/kg	1	0.11	0.55	11/22/10
Copper		7440-50-8	LA-505-412		17.4		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		65.0		mg/kg	1	0.22	2.2	11/22/10
Zinc		7440-66-6	LA-505-412		49.1		mg/kg	1	0.88	5.5	11/22/10
Lead		7439-92-1	LA-505-412		3.42		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070001
SAF# F11-024
Sample ID B29D36

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.055		mg/kg	1	0.055	0.22	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.451		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		25.5		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.55	11/22/10
Tin	7440-31-5	LA-505-412	B	0.539		mg/kg	1	0.11	0.55	11/22/10
Arsenic	7440-38-2	LA-505-412	B	2.47		mg/kg	1	0.44	4.4	11/22/10
Selenium	7782-49-2	LA-505-412	B	2.24		mg/kg	1	0.33	3.3	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070002
SAF# F11-024
Sample ID B29D37

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.218~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		8240		mg/kg	1	5.5	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	632		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		8.66		mg/kg	1	0.22	2.2	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412	B	1.35		mg/kg	1	0.33	3.3	11/22/10
Barium		7440-39-3	LA-505-412		108		mg/kg	1	0.22	2.2	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.359		mg/kg	1	0.11	0.55	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		7.43		mg/kg	1	0.55	5.5	11/22/10
Cobalt		7440-48-4	LA-505-412		15.1		mg/kg	1	0.11	0.55	11/22/10
Copper		7440-50-8	LA-505-412		24.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		90.7		mg/kg	1	0.22	2.2	11/22/10
Zinc		7440-66-6	LA-505-412		73.8		mg/kg	1	0.87	5.5	11/22/10
Lead		7439-92-1	LA-505-412		6.85		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070002
SAF# F11-024
Sample ID B29D37

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.055		mg/kg	1	0.055	0.22	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.635		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		39.6		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.55	11/22/10
Tin	7440-31-5	LA-505-412		0.967		mg/kg	1	0.11	0.55	11/22/10
Arsenic	7440-38-2	LA-505-412		5.34		mg/kg	1	0.44	4.4	11/22/10
Selenium	7782-49-2	LA-505-412	B	2.31		mg/kg	1	0.33	3.3	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070003
SAF# F11-024
Sample ID B29D40

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		5600		mg/kg	1	5.4	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	342		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		4.90		mg/kg	1	0.21	2.1	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412	B	0.369		mg/kg	1	0.32	3.2	11/22/10
Barium		7440-39-3	LA-505-412		57.6		mg/kg	1	0.21	2.1	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.332		mg/kg	1	0.11	0.54	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412	B	4.43		mg/kg	1	0.54	5.4	11/22/10
Cobalt		7440-48-4	LA-505-412		10.7		mg/kg	1	0.11	0.54	11/22/10
Copper		7440-50-8	LA-505-412		18.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		66.2		mg/kg	1	0.21	2.1	11/22/10
Zinc		7440-66-6	LA-505-412		49.6		mg/kg	1	0.86	5.4	11/22/10
Lead		7439-92-1	LA-505-412		3.95		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070003
SAF# F11-024
Sample ID B29D40

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.054		mg/kg	1	0.054	0.21	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.368		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		25.9		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/22/10
Tin	7440-31-5	LA-505-412		0.541		mg/kg	1	0.11	0.54	11/22/10
Arsenic	7440-38-2	LA-505-412	B	3.07		mg/kg	1	0.43	4.3	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.89		mg/kg	1	0.32	3.2	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070004
SAF# F11-024
Sample ID B29D41

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		4640		mg/kg	1	5.3	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	429		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		5.85		mg/kg	1	0.21	2.1	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony		7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/22/10
Barium		7440-39-3	LA-505-412		66.1		mg/kg	1	0.21	2.1	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.323		mg/kg	1	0.11	0.53	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412	B	4.24		mg/kg	1	0.53	5.3	11/22/10
Cobalt		7440-48-4	LA-505-412		10.2		mg/kg	1	0.11	0.53	11/22/10
Copper		7440-50-8	LA-505-412		16.7		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		73.2		mg/kg	1	0.21	2.1	11/22/10
Zinc		7440-66-6	LA-505-412		48.3		mg/kg	1	0.85	5.3	11/22/10
Lead		7439-92-1	LA-505-412		2.41		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070004
SAF# F11-024
Sample ID B29D41

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.428		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		21.5		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/22/10
Tin	7440-31-5	LA-505-412	B	0.475		mg/kg	1	0.11	0.53	11/22/10
Arsenic	7440-38-2	LA-505-412	B	2.15		mg/kg	1	0.43	4.3	11/22/10
Selenium	7782-49-2	LA-505-412	B	0.616		mg/kg	1	0.32	3.2	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070005
SAF# F11-024
Sample ID B29D44

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.422~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		7940		mg/kg	1	5.7	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	295		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		5.70		mg/kg	1	0.23	2.3	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412		5.10		mg/kg	1	0.34	3.4	11/22/10
Barium		7440-39-3	LA-505-412		81.7		mg/kg	1	0.23	2.3	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.287		mg/kg	1	0.11	0.57	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.165		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		7.86		mg/kg	1	0.57	5.7	11/22/10
Cobalt		7440-48-4	LA-505-412		8.18		mg/kg	1	0.11	0.57	11/22/10
Copper		7440-50-8	LA-505-412		22.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		55.5		mg/kg	1	0.23	2.3	11/22/10
Zinc		7440-66-6	LA-505-412		212		mg/kg	1	0.90	5.7	11/22/10
Lead		7439-92-1	LA-505-412		7.06		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070005
SAF# F11-024
Sample ID B29D44

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.181		mg/kg	1	0.057	0.23	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.645		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		59.5		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.57	11/22/10
Tin	7440-31-5	LA-505-412		1.58		mg/kg	1	0.11	0.57	11/22/10
Arsenic	7440-38-2	LA-505-412		14.0		mg/kg	1	0.45	4.5	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.43		mg/kg	1	0.34	3.4	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070006
SAF# F11-024
Sample ID B29D45

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.191~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		8510		mg/kg	1	5.5	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	356		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		8.11		mg/kg	1	0.22	2.2	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412	B	2.99		mg/kg	1	0.33	3.3	11/22/10
Barium		7440-39-3	LA-505-412		97.2		mg/kg	1	0.22	2.2	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.350		mg/kg	1	0.11	0.55	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.167		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		8.46		mg/kg	1	0.55	5.5	11/22/10
Cobalt		7440-48-4	LA-505-412		10.0		mg/kg	1	0.11	0.55	11/22/10
Copper		7440-50-8	LA-505-412		23.9		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		65.8		mg/kg	1	0.22	2.2	11/22/10
Zinc		7440-66-6	LA-505-412		78.2		mg/kg	1	0.89	5.5	11/22/10
Lead		7439-92-1	LA-505-412		7.24		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070006
SAF# F11-024
Sample ID B29D45

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.158		mg/kg	1	0.055	0.22	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.700		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		61.1		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	B	0.139		mg/kg	1	0.11	0.55	11/22/10
Tin	7440-31-5	LA-505-412		1.36		mg/kg	1	0.11	0.55	11/22/10
Arsenic	7440-38-2	LA-505-412		9.94		mg/kg	1	0.44	4.4	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.42		mg/kg	1	0.33	3.3	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070007
SAF# F11-024
Sample ID B29D46

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.445~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.54~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		8100		mg/kg	1	5.6	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	337		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		11.1		mg/kg	1	0.23	2.3	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412		4.46		mg/kg	1	0.34	3.4	11/22/10
Barium		7440-39-3	LA-505-412		77.9		mg/kg	1	0.23	2.3	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.207		mg/kg	1	0.11	0.56	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.128		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		9.09		mg/kg	1	0.56	5.6	11/22/10
Cobalt		7440-48-4	LA-505-412		8.74		mg/kg	1	0.11	0.56	11/22/10
Copper		7440-50-8	LA-505-412		21.4		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		55.4		mg/kg	1	0.23	2.3	11/22/10
Zinc		7440-66-6	LA-505-412		72.2		mg/kg	1	0.90	5.6	11/22/10
Lead		7439-92-1	LA-505-412		7.51		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070007
SAF# F11-024
Sample ID B29D46

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412		0.376		mg/kg	1	0.056	0.23	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.703		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		50.4		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.56	11/22/10
Tin	7440-31-5	LA-505-412		1.28		mg/kg	1	0.11	0.56	11/22/10
Arsenic	7440-38-2	LA-505-412		12.7		mg/kg	1	0.45	4.5	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.05		mg/kg	1	0.34	3.4	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070008
SAF# F11-024
Sample ID B29D56

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.10~~		~~ug/g~~	~~1~~	~~0.10~~	~~0.52~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		4880		mg/kg	1	5.3	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	300		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		5.59		mg/kg	1	0.21	2.1	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony		7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/22/10
Barium		7440-39-3	LA-505-412		49.3		mg/kg	1	0.21	2.1	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.170		mg/kg	1	0.11	0.53	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412	B	4.30		mg/kg	1	0.53	5.3	11/22/10
Cobalt		7440-48-4	LA-505-412		9.54		mg/kg	1	0.11	0.53	11/22/10
Copper		7440-50-8	LA-505-412		15.5		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		63.6		mg/kg	1	0.21	2.1	11/22/10
Zinc		7440-66-6	LA-505-412		45.0		mg/kg	1	0.85	5.3	11/22/10
Lead		7439-92-1	LA-505-412		2.99		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070008
SAF# F11-024
Sample ID B29D56

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.369		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		22.7		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/22/10
Tin	7440-31-5	LA-505-412	B	0.469		mg/kg	1	0.11	0.53	11/22/10
Arsenic	7440-38-2	LA-505-412	B	2.20		mg/kg	1	0.42	4.2	11/22/10
Selenium	7782-49-2	LA-505-412	B	2.25		mg/kg	1	0.32	3.2	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070009
SAF# F11-024
Sample ID B29D57

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
Hexavalent chromium		18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.52	12/01/10
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		4200		mg/kg	1	5.3	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	267		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		5.06		mg/kg	1	0.21	2.1	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412	B	0.702		mg/kg	1	0.32	3.2	11/22/10
Barium		7440-39-3	LA-505-412		41.1		mg/kg	1	0.21	2.1	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.319		mg/kg	1	0.11	0.53	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412	B	3.91		mg/kg	1	0.53	5.3	11/22/10
Cobalt		7440-48-4	LA-505-412		8.63		mg/kg	1	0.11	0.53	11/22/10
Copper		7440-50-8	LA-505-412		14.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		65.1		mg/kg	1	0.21	2.1	11/22/10
Zinc		7440-66-6	LA-505-412		45.7		mg/kg	1	0.85	5.3	11/22/10
Lead		7439-92-1	LA-505-412		2.80		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070009
SAF# F11-024
Sample ID B29D57

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.376		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		23.6		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/22/10
Tin	7440-31-5	LA-505-412		0.575		mg/kg	1	0.11	0.53	11/22/10
Arsenic	7440-38-2	LA-505-412	B	3.94		mg/kg	1	0.43	4.3	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.84		mg/kg	1	0.32	3.2	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070010
SAF# F11-024
Sample ID B29D58

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.232~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		7150		mg/kg	1	5.4	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	371		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		7.70		mg/kg	1	0.22	2.2	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412	B	0.680		mg/kg	1	0.33	3.3	11/22/10
Barium		7440-39-3	LA-505-412		72.2		mg/kg	1	0.22	2.2	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.378		mg/kg	1	0.11	0.54	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.231		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		9.20		mg/kg	1	0.54	5.4	11/22/10
Cobalt		7440-48-4	LA-505-412		10.3		mg/kg	1	0.11	0.54	11/22/10
Copper		7440-50-8	LA-505-412		19.6		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		65.8		mg/kg	1	0.22	2.2	11/22/10
Zinc		7440-66-6	LA-505-412		82.3		mg/kg	1	0.87	5.4	11/22/10
Lead		7439-92-1	LA-505-412		18.5		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070010
SAF# F11-024
Sample ID B29D58

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412		0.725		mg/kg	1	0.054	0.22	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.498		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		27.3		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/22/10
Tin	7440-31-5	LA-505-412		0.795		mg/kg	1	0.11	0.54	11/22/10
Arsenic	7440-38-2	LA-505-412	B	4.16		mg/kg	1	0.43	4.3	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.01		mg/kg	1	0.33	3.3	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070011
SAF# F11-024
Sample ID B29D59

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~UN~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		5090		mg/kg	1	5.3	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	322		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412		6.84		mg/kg	1	0.21	2.1	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412	B	0.376		mg/kg	1	0.32	3.2	11/22/10
Barium		7440-39-3	LA-505-412		47.3		mg/kg	1	0.21	2.1	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.175		mg/kg	1	0.11	0.53	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412	B	4.40		mg/kg	1	0.53	5.3	11/22/10
Cobalt		7440-48-4	LA-505-412		9.93		mg/kg	1	0.11	0.53	11/22/10
Copper		7440-50-8	LA-505-412		15.5		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		67.7		mg/kg	1	0.21	2.1	11/22/10
Zinc		7440-66-6	LA-505-412		69.4		mg/kg	1	0.85	5.3	11/22/10
Lead		7439-92-1	LA-505-412		3.36		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070011
SAF# F11-024
Sample ID B29D59

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	U	<0.053		mg/kg	1	0.053	0.21	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.402		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		22.2		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.53	11/22/10
Tin	7440-31-5	LA-505-412	B	0.487		mg/kg	1	0.11	0.53	11/22/10
Arsenic	7440-38-2	LA-505-412	B	2.36		mg/kg	1	0.43	4.3	11/22/10
Selenium	7782-49-2	LA-505-412	B	2.30		mg/kg	1	0.32	3.2	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103084

Sample # 103084001
SAF# F11-024
Sample ID B29D47

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.433~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.56~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		8260		mg/kg	1	5.6	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	314		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412	C	6.78		mg/kg	1	0.23	2.3	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412		5.39		mg/kg	1	0.34	3.4	11/22/10
Barium		7440-39-3	LA-505-412		97.4		mg/kg	1	0.23	2.3	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.391		mg/kg	1	0.11	0.56	11/22/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		9.69		mg/kg	1	0.56	5.6	11/22/10
Cobalt		7440-48-4	LA-505-412		7.73		mg/kg	1	0.11	0.56	11/22/10
Copper		7440-50-8	LA-505-412		22.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		57.9		mg/kg	1	0.23	2.3	11/22/10
Zinc		7440-66-6	LA-505-412		72.5		mg/kg	1	0.90	5.6	11/22/10
Lead		7439-92-1	LA-505-412		5.75		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084001
SAF# F11-024
Sample ID B29D47

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.0977		mg/kg	1	0.056	0.23	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.760		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		63.7		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.56	11/22/10
Tin	7440-31-5	LA-505-412		1.71		mg/kg	1	0.11	0.56	11/22/10
Arsenic	7440-38-2	LA-505-412		13.3		mg/kg	1	0.45	4.5	11/22/10
Selenium	7782-49-2	LA-505-412	B	0.971		mg/kg	1	0.34	3.4	11/22/10

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 # WSCF103084

Sample # 103084002
SAF# F11-024
Sample ID B29D48

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.339~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.56~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		7920		mg/kg	1	5.6	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	374		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412	C	9.15		mg/kg	1	0.22	2.2	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412		5.25		mg/kg	1	0.33	3.3	11/22/10
Barium		7440-39-3	LA-505-412		83.5		mg/kg	1	0.22	2.2	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.383		mg/kg	1	0.11	0.56	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.206		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		8.84		mg/kg	1	0.56	5.6	11/22/10
Cobalt		7440-48-4	LA-505-412		9.08		mg/kg	1	0.11	0.56	11/22/10
Copper		7440-50-8	LA-505-412		27.0		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		57.8		mg/kg	1	0.22	2.2	11/22/10
Zinc		7440-66-6	LA-505-412		81.3		mg/kg	1	0.89	5.6	11/22/10
Lead		7439-92-1	LA-505-412		5.53		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084002
SAF# F11-024
Sample ID B29D48

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.0903		mg/kg	1	0.056	0.22	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.703		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		57.8		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.56	11/22/10
Tin	7440-31-5	LA-505-412		1.91		mg/kg	1	0.11	0.56	11/22/10
Arsenic	7440-38-2	LA-505-412		13.6		mg/kg	1	0.44	4.4	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.46		mg/kg	1	0.33	3.3	11/22/10

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 # WSCF103084

Sample # 103084003
SAF# F11-024
Sample ID B29D49

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.162~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.55~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		7010		mg/kg	1	5.5	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	278		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412	C	5.62		mg/kg	1	0.22	2.2	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412	B	2.75		mg/kg	1	0.33	3.3	11/22/10
Barium		7440-39-3	LA-505-412		69.8		mg/kg	1	0.22	2.2	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.249		mg/kg	1	0.11	0.55	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.196		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		7.30		mg/kg	1	0.55	5.5	11/22/10
Cobalt		7440-48-4	LA-505-412		5.95		mg/kg	1	0.11	0.55	11/22/10
Copper		7440-50-8	LA-505-412		15.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		42.5		mg/kg	1	0.22	2.2	11/22/10
Zinc		7440-66-6	LA-505-412		63.6		mg/kg	1	0.88	5.5	11/22/10
Lead		7439-92-1	LA-505-412		9.28		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084003
SAF# F11-024
Sample ID B29D49

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412		0.954		mg/kg	1	0.055	0.22	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.650		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		40.5		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	B	0.396		mg/kg	1	0.11	0.55	11/22/10
Tin	7440-31-5	LA-505-412		0.931		mg/kg	1	0.11	0.55	11/22/10
Arsenic	7440-38-2	LA-505-412		8.77		mg/kg	1	0.44	4.4	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.85		mg/kg	1	0.33	3.3	11/22/10

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 # WSCF103084

Sample # 103084004
SAF# F11-024
Sample ID B29D50

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
Hexavalent chromium		18540-29-9	LA-265-403	BN	0.382		ug/g	1	0.11	0.56	12/01/10
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		7920		mg/kg	1	5.6	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	312		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412	C	8.21		mg/kg	1	0.22	2.2	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412		6.73		mg/kg	1	0.33	3.3	11/22/10
Barium		7440-39-3	LA-505-412		83.0		mg/kg	1	0.22	2.2	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.383		mg/kg	1	0.11	0.56	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.175		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		8.81		mg/kg	1	0.56	5.6	11/22/10
Cobalt		7440-48-4	LA-505-412		9.12		mg/kg	1	0.11	0.56	11/22/10
Copper		7440-50-8	LA-505-412		22.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		59.1		mg/kg	1	0.22	2.2	11/22/10
Zinc		7440-66-6	LA-505-412		76.8		mg/kg	1	0.89	5.6	11/22/10
Lead		7439-92-1	LA-505-412		6.28		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084004
SAF# F11-024
Sample ID B29D50

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412	B	0.0999		mg/kg	1	0.056	0.22	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.624		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		55.8		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.56	11/22/10
Tin	7440-31-5	LA-505-412		1.83		mg/kg	1	0.11	0.56	11/22/10
Arsenic	7440-38-2	LA-505-412		15.4		mg/kg	1	0.44	4.4	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.18		mg/kg	1	0.33	3.3	11/22/10

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 # WSCF103084

Sample # 103084005
SAF# F11-024
Sample ID B29D51

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**11/30/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~BN~~	~~0.431~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.56~~	~~12/01/10~~
ICPMS Prep											**11/21/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		10200		mg/kg	1	5.6	110	11/22/10
Manganese	J+	7439-96-5	LA-505-412	N	476		mg/kg	1	0.11	1.1	11/22/10
Nickel	J+	7440-02-0	LA-505-412	C	9.00		mg/kg	1	0.23	2.3	11/22/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	J+	7440-36-0	LA-505-412		7.12		mg/kg	1	0.34	3.4	11/22/10
Barium		7440-39-3	LA-505-412		130		mg/kg	1	0.23	2.3	11/22/10
Beryllium		7440-41-7	LA-505-412	B	0.371		mg/kg	1	0.11	0.56	11/22/10
Cadmium		7440-43-9	LA-505-412	B	0.318		mg/kg	1	0.11	1.1	11/22/10
Chromium		7440-47-3	LA-505-412		10.5		mg/kg	1	0.56	5.6	11/22/10
Cobalt		7440-48-4	LA-505-412		15.2		mg/kg	1	0.11	0.56	11/22/10
Copper		7440-50-8	LA-505-412		26.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium		7440-62-2	LA-505-412		73.7		mg/kg	1	0.23	2.3	11/22/10
Zinc		7440-66-6	LA-505-412		89.5		mg/kg	1	0.90	5.6	11/22/10
Lead		7439-92-1	LA-505-412		9.71		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084005
SAF# F11-024
Sample ID B29D51

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury	7439-97-6	LA-505-412		0.252		mg/kg	1	0.056	0.23	11/22/10
Molybdenum	7439-98-7	LA-505-412	B	0.850		mg/kg	1	0.11	1.1	11/22/10
Strontium	7440-24-6	LA-505-412		77.6		mg/kg	1	0.11	1.1	11/22/10
Thallium	7440-28-0	LA-505-412	B	0.277		mg/kg	1	0.11	0.56	11/22/10
Tin	7440-31-5	LA-505-412		2.25		mg/kg	1	0.11	0.56	11/22/10
Arsenic	7440-38-2	LA-505-412		17.3		mg/kg	1	0.45	4.5	11/22/10
Selenium	7782-49-2	LA-505-412	B	1.57		mg/kg	1	0.34	3.4	11/22/10

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 # WSCF103268

Sample # 103268001
SAF# F11-024
Sample ID B29T97

Matrix SOIL
Sampled 12/07/10
Received 12/07/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep											**12/08/10**
Cr(VI)											
~~Hexavalent chromium~~		~~18540-29-9~~	~~LA-265-403~~	~~U~~	~~<0.11~~		~~ug/g~~	~~1~~	~~0.11~~	~~0.53~~	~~12/08/10~~
ICPMS Prep											**12/07/10**
ICP-MS											
Aluminum		7429-90-5	LA-505-412		4720		mg/kg	1	5.4	110	12/08/10
Manganese		7439-96-5	LA-505-412		340		mg/kg	1	0.11	1.1	12/08/10
Nickel		7440-02-0	LA-505-412		7.45		mg/kg	1	0.22	2.2	12/08/10
Silver		7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	12/08/10
Antimony	R	7440-36-0	LA-505-412	B	0.714		mg/kg	1	0.32	3.2	12/08/10
Barium	J-	7440-39-3	LA-505-412	N	49.7		mg/kg	1	0.22	2.2	12/08/10
Beryllium		7440-41-7	LA-505-412	B	0.245		mg/kg	1	0.11	0.54	12/08/10
Cadmium		7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	12/08/10
Chromium		7440-47-3	LA-505-412	B	5.32		mg/kg	1	0.54	5.4	12/08/10
Cobalt		7440-48-4	LA-505-412		10.3		mg/kg	1	0.11	0.54	12/08/10
Copper		7440-50-8	LA-505-412		16.2		mg/kg	1	0.11	1.1	12/08/10
Vanadium		7440-62-2	LA-505-412		83.3		mg/kg	1	0.22	2.2	12/08/10
Zinc		7440-66-6	LA-505-412		53.0		mg/kg	1	0.86	5.4	12/08/10
Lead		7439-92-1	LA-505-412		5.31		mg/kg	1	0.11	1.1	12/08/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103268

Sample # 103268001
SAF# F11-024
Sample ID B29T97

Matrix SOIL
Sampled 12/07/10
Received 12/07/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Mercury		7439-97-6	LA-505-412		1.12		mg/kg	1	0.054	0.22	12/08/10
Molybdenum		7439-98-7	LA-505-412	B	0.545		mg/kg	1	0.11	1.1	12/08/10
Strontium	J-	7440-24-6	LA-505-412	N	24.2		mg/kg	1	0.11	1.1	12/08/10
Thallium		7440-28-0	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	12/08/10
Tin		7440-31-5	LA-505-412		0.650		mg/kg	1	0.11	0.54	12/08/10
Arsenic		7440-38-2	LA-505-412	B	2.85		mg/kg	1	0.43	4.3	12/08/10
Selenium		7782-49-2	LA-505-412	B	2.17		mg/kg	1	0.32	3.2	12/08/10

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
WSCF103010

Introduction

Ten (10) S&GRP samples were received at the WSCF Laboratory on November 16, 2010. The sample was 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. Also attached is IRF 10-273 dealing with additional elements requested in the ICP/MS 200.8 analysis. 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

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):

- Batch QC 170333 analyzed on sample# B29D53 (103010007)

- Matrix Spike recovery is 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):

- Batch QC 170023 analyzed on sample# B28301 (102920003)
  - Selenium was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.

All other applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 169948 analyzed on sample# B29D64 (103010001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
  - Batch QC 169949 analyzed on sample# B29D61 (103010010)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
    - Cobalt-60 RPD and RPD limit not printed due to a LIMS problem where the original and Duplicate equal zero. No flags assigned.

All other applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF103010

- Gross Alpha / Gross Beta:
  - Batch QC 170097 analyzed on sample# B29D38 (103010002)
    - Gross Alpha - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103010

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103010

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-085 — PAGE 1 OF 1

COLLECTOR: T.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 29	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY:			
ICE CHEST NO.: NOT	FIELD LOGBOOK NO.: HNF-N-[illegible]	ACTUAL SAMPLE DEPTH: 3	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103010

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 2008	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS GEA	SEE ITEM (3) IN SPECIAL INSTRUCTIONS AIE

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
829064	1	SOIL	11-16-10	1321	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
T.M. Hall	11-16-10 1500	M Nelson M. Nelson	11-16-10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20,for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 7)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-089 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	AIR QUALITY: ☐	DATA TURNAROUND: 3 Days / 12 Days	
SAMPLING LOCATION: KW Sed. Basin Sample 3	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 30196ZES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Se=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D38 2	SOIL	11/16/10	0925	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F.M. Hall	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-130	PAGE 1 OF 1
COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 4	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF N-55-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60mL	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Composite Hrs: 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D39	3	SOIL	11/16/10	0941	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F M Hill	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

ChemWare

Friday, November 19, 2010 7:12:02 PM
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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-142 — PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 7	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF N 5621-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, Wi=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D42	4	SOIL	11/16/10	1612	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(7) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

ChemWare

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-146 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 8	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-302-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D43	5	SOIL	11/16/10	1030	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11/16/10	Kevin Nelson	11/16/10 0500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6005-618 (REV 2)

ChemWare

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-033 — PAGE 1 OF 1

COLLECTOR: Fm Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 17	PROJECT DESIGNATION: 183 KW Ventilation Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-307-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301952ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DI=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	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B29D52 6	SOIL	11/16/10	1216	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Fm Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-818 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-037 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 18	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-327-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DI=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	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium (ppx - 2.9%)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29053	7 SOIL	11/16/10	1100	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

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ChemWare

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-041 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DI	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DI
SAMPLING LOCATION: KW Sed. Basin Sample 19	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-SED-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquid, 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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (TAL)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D54	8	SOIL	11-16-10	1739	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11-16-10 1530	M. Nelson M. Nelson	11-16-10 1530

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-049 — PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 20	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: MKF-N-501-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	10 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium New - 1996	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D55	9	SOIL	11-16-10	1300	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
T.M. Hall	11-16-10 1500	M. Nelson	11-16-10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6063-618 (REV. 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-073 — PAGE 1 OF 1

COLLECTOR: FM Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 26	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-501-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SD=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (3196)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D61 10	SOIL	11-16-10	1341	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	11-16-10 500	M. Nelson	11-16-10 500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

ChemWare

Friday, November 19, 2010 7:12:02 PM
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Attachment 2
Narrative Rev 01
WSCF103013

Revision 1: Case Narrative Replaces the Prior Submittal in its Entirety. The project requested to add additional ICP/MS metals after the final report was issued. This revision includes the additional analytes.

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on November 16, 2010. The sample was 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. Also is attached an Issue Resolution Form (10-274) pertaining to the addition of metals by 200.8 requested by the client.

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):

Attachment 2
Narrative Rev 01
WSCF103013

- Batch QC 170063 analyzed on sample# B28MN8 (102912004)

All applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170031 analyzed on sample# B29D74 (103013001)
    - Radium-226 was present in the Blank due to Naturally Occurring Radioactive Material.
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 169946 analyzed on sample# B29D74 (103013001)

All 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.

Attachment 2
Narrative Rev 01
WSCF103013

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-274

Date: 12/3/10 SAF No. F11-026

SDG: 103013 TEST: ICPMS_Metals_200.8 **DUE DATE: NA**

LOGIN No.: 103013001

Sample No.(s): B29D74

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals.	Report the following additional 200.8 metals for the sample noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Work orders 103016 and 103014 did not have 200.8 metals requested; therefore data will not be added to these work orders. The revised work order for 103013 will be submitted by 12/8.

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

3

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-026-001 — PAGE 1 OF 1

COLLECTOR FM Hall	**COMPANY CONTACT** WIDRIG, DL	**TELEPHONE NO.** 376-2958	**PROJECT COORDINATOR** WIDRIG, DL
SAMPLING LOCATION KW Sed. Basin Sample 37	**PROJECT DESIGNATION** 183 KW Verification Sampling and Analysis - QC Sampling		**SAF NO.** F11-026
ICE CHEST NO. NA	**FIELD LOGBOOK NO.** HNF-N-527-10	**ACTUAL SAMPLE DEPTH** NA	**COA** 301962ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C04 — **AIR QUALITY** ☐ — **DATA TURNAROUND** 3 Days / 12 Days — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE

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)

103013

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	500mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	**MATRIX***	**SAMPLE DATE**	**SAMPLE TIME**			
B29D74	WATER	11/16/10	0835	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A 6003.618 (REV 2)

Tuesday, November 16, 2010 6:01:18 PM
Page 2 of 2

ChemWare

REVISED103013 -

Attachment 2
Narrative
WSCF103039

Introduction

Eleven (11) S&GRP samples were received at the WSCF Laboratory on November 17, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170335 analyzed on sample# B29D60 (103039001)

- Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

- Batch QC 170344 analyzed on sample# B29D66 (103039005)
  - Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All other 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):

- Batch QC 170026 analyzed on sample# B28JR7 (102960001)
  - Manganese – Matrix Spike/Matrix Spike Duplicate Relative Percent Difference (RPD) was above established laboratory control limits. No flags issued.
  - Nickel and Selenium were detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.

All other applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170015 analyzed on sample# B29D60 (103039001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.

- The Ra-226 duplicate RPDs (relative percent difference) were above established laboratory control limits. No flags assigned.

- Batch QC 170016 analyzed on sample# B29D71 (103039010)
  - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
  - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
  - Ra-228 was detected in the blank. There were no affected sample results; therefore no flags were assigned.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170098 analyzed on sample# B29D62 (103039002)
    - Gross Beta - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103039

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103039

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-069 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 25	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-507-162	ACTUAL SAMPLE DEPTH: 3'	COA: 301952ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103039

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 200S	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS GEA	SEE ITEM (3) IN SPECIAL INSTRUCTIONS A/B

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D60	1 SOIL	NOV 17 2010	0903	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010		NOV 17 2010
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-077 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 376-2858

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: C04

DATA TURNAROUND: 3 Days / 12 Days

SAMPLING LOCATION: KW Sed. Basin Sample 27

PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil

SAF NO.: F11-024

AIR QUALITY: ☐

ICE CHEST NO.: NA

FIELD LOGBOOK NO.: HNF-N-507-16

ACTUAL SAMPLE DEPTH: 3'

COA: 3019962E510

METHOD OF SHIPMENT: GOVERNMEN VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D62	2 SOIL	NOV 17 2010	0830	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500		NOV 17 2010 1503
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

1503* The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-5005-618 (REV 2)

ChemWare

Wednesday, November 17, 2010 8:06:28 PM

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Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-081 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 28	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-28	ACTUAL SAMPLE DEPTH: 3'	COA: 301962E510
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wine, 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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D63	3 SOIL	NOV 17 2010	0910	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1300		NOV 17 2010 1300
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-093 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 30	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soi		SAF NO.: F11-024
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-102	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 | AIR QUALITY: | DATA TURNAROUND: 3 Days / 12 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	750ml	60ml	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D65	4 SOIL	NOV 17 2010	1331	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1600	Victor Sing	NOV 17 2010 1600

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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ChemWare

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — **F11-024-097** — **PAGE 1 OF 1**

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** WIDRIG, DL	**TELEPHONE NO.** 376-2858	**PROJECT COORDINATOR** WIDRIG, DL
SAMPLING LOCATION KW Sed. Basin Sample 31	**PROJECT DESIGNATION** 183 KW Verification Sampling and Analysis - Soil		**SAF NO.** F11-024
ICE CHEST NO. NA	**FIELD LOGBOOK NO.** HNF-N-507-16	**ACTUAL SAMPLE DEPTH** 3'	**COA** 301962ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C04 — **AIR QUALITY** ☐ — **DATA TURNAROUND** 3 Days / 12 Days — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SC=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	Cool<4C	Cool<4C	None	None	
HOLDING TIME	6 Months	30 Days	6 Months	6 Months	
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P	
NO. OF CONTAINER(S)	1	1	1	1	
VOLUME	250mL	60mL	500mL	250mL	
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium (Hex - 7196)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	
SAMPLE NO. B29D66	**MATRIX*** 5 SOIL	**SAMPLE DATE** NOV 17 2010	**SAMPLE TIME** 0935	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	[illegible]	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-101 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 376-2858

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: C04

DATA TURNAROUND: 3 Days / 12 Days

SAMPLING LOCATION: KW Sed. Basin Sample 32

PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil

SAF NO.: F11-024

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-507-10

ACTUAL SAMPLE DEPTH: 3'

COA: 301962ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (7196)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D67	6	SOIL	NOV 17 2010	1011	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	Victor Bing	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-918 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-105 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 33	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chlorides MW - 2195	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D68	SOIL	NOV 17 2010	1305	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 /500	[illegible]	NOV 17 2010 /505

SPECIAL INSTRUCTIONS

3* The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-918 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-109 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 34	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF -N-507-12	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 | AIR QUALITY: ☐ | DATA TURNAROUND: 3 Days / 12 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250 mL	60mL	300mL	250mL
SAMPLE ANALYSIS	SPECIFIED IN SPECIAL INSTRUCTIONS	Chromium Hex (TPH)	SPECIFIED IN SPECIAL INSTRUCTIONS	SPECIFIED IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D69	8	SOIL	NOV 17 2010	1237	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	VIGIL	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114E520.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

4-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-113 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 35	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: INF -N 507-	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D70	9 SOIL	~~OCT - 1 2010~~ NOV 17 2010	1040	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010		NOV 17 2010 1503

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 4)

Wednesday, November 17, 2010 8:06:28 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-117 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 36	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-18	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D71	10	SOIL	NOV 17 2010	0911	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	Vistar	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-121

PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 38	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-16	ACTUAL SAMPLE DEPTH: 3	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex (7199)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D72	SOIL	NOV 17 2010	0530	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	[illegible]	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
Page 13 of 13

Attachment 2
Narrative
WSCF103070

Introduction

Eleven (11) S&GRP samples were received at the WSCF Laboratory on November 18, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170488 analyzed on sample# B29D36 (103070001)

- Insoluble Matrix Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All other 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):

- Batch QC 170116 analyzed on sample# B27779 (103001001)
  - Manganese – The Matrix spike/matrix spike duplicate RPD (Relative Percent Difference) was also above the established laboratory control limit. No flags issued.
  - Manganese – Matrix Spike Duplicate recovery was outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Aluminum – 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.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170073 analyzed on sample# B29D36 (103070001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
    -
  - Batch QC 170075 analyzed on sample# B29D58 (103070010)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is

not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170074 analyzed on sample# B29D37 (103070002)
- Gross Alpha and Gross Beta - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103070

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103070

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-001 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 1	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐	ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N 507-16	ACTUAL SAMPLE DEPTH: 3'
COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DI=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

103070

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D36	SOIL	NOV 18 2010	1015	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010 1430		NOV 18 2010 1450

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

OK

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-045 | PAGE 1 OF 1

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	KW Sed. Basin Sample 2
ICE CHEST NO.	
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	WIDRIG, DL
TELEPHONE NO.	376-2858
PROJECT COORDINATOR	WIDRIG, DL
PRICE CODE	C04
DATA TURNAROUND	3 Days / 12 Days
PROJECT DESIGNATION	183 KW Verification Sampling and Analysis - Soil
SAF NO.	F11-024
AIR QUALITY	☐
FIELD LOGBOOK NO.	~~HNF-N-607-~~ 16
ACTUAL SAMPLE DEPTH	3'
COA	301962E510
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
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, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - /196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D37 002	SOIL	NOV 18 2010	1643	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1430 NOV 18 2010	1430	NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-134 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 5	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D40 603	SOIL	NOV 18 2010	1269	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010 1430		NOV 18 2010 1430

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-138 — PAGE 1 OF 1

COLLECTOR: FM Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 6	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-607-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D41	CC-1	SOIL	NOV 18 2010	1231	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	NOV 18 2010 1430	NSC	NOV 18 2010 1430

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-150	PAGE 1 OF 1
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 9	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.:	FIELD LOGBOOK NO.: ~~HNF-N-607-~~ 162	ACTUAL SAMPLE DEPTH: Surface	COA: 301962CS10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solics, 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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196:	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D44	005	SOIL	NOV 18 2010	1301	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1432		NOV 18 2010 1432

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-005 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 376-2858

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: C04

DATA TURNAROUND: 3 Days / 12 Days

SAMPLING LOCATION: KW Sed. Basin Sample 10

PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil

SAF NO.: F11-024

AIR QUALITY: L

ICE CHEST NO.:

FIELD LOGBOOK NO.: ~~HNF-N-501~~ 42

ACTUAL SAMPLE DEPTH: Surface

COA: 301962ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D45	C06	SOIL	NOV 18 2010	1314	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1330		NOV 18 2010 1330

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-009 — PAGE 1 OF 1

COLLECTOR: PM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY:	SAMPLING LOCATION: KW Sed. Basin Sample 11
PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-42
ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization
OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D46 007	SOIL	NOV 18 2010	1751	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PM Hall, CHPRC	NOV 18 2010		NOV 19 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Thursday, November 18, 2010 7:57:20 PM
Page 9 of 13

ChemWare

DRAFT

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-053

PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 376-2858

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: C04

DATA TURNAROUND: 3 Days / 12 Days

SAMPLING LOCATION: KW Sed. Basin Sample 21

PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil

SAF NO.: F11-024

AIR QUALITY: ☐

ICE CHEST NO.: NA

FIELD LOGBOOK NO.: HNF-N-507-10

ACTUAL SAMPLE DEPTH: 3'

COA: 301962ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION		Cool~4C	Cool~4C	None	None
HOLDING TIME		6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER		G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)		1	1	1	1
VOLUME		250mL	60mL	500mL	250mL
SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B29D56 008	SOIL	NOV 18 2010	0935	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1130		NOV 18 2010 1130

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-057 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 22	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: NF-N-507-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS
SAMPLE NO. / MATRIX* / SAMPLE DATE / SAMPLE TIME				
B29D57 009 SOIL NOV 18 2010 0905	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1836		NOV 18 2010 1836

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-518 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-024-061 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 23	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D58 010	SOIL	NOV 18 2010	0809	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010		NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6001-513 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-065 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2658	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	AIR QUALITY: ☐	DATA TURNAROUND: 3 Days / 12 Days	
SAMPLING LOCATION: KW Sed. Basin Sample 24	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soi	SAF NO.: F11-024	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D59	011	SOIL	NOV 18 2010	0837	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010 1436		NOV 18 2010 1436

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Attachment 2
Narrative
WSCF103084

Introduction

Five (5) S&GRP samples were received at the WSCF Laboratory on November 19, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170488 analyzed on sample# B29D36 (103070001)

- A Matrix Spike recovery (IMS) was outside the established laboratory limits. Affected sample results in this batch were "N" flagged.
- Duplicate Relative Percent Difference (RPD) does not apply to results near the minimum detectable level. No flags issued on sample results; quality control report was "X" flagged for RPD failure.
- All other 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):

- Batch QC 170116 analyzed on sample# B27779 (103010001)
  - Manganese – Duplicate Relative Percent Difference (RPD) did not meet the laboratory's acceptance criteria. No flags issued on sample results; quality control report was "X" flagged for RPD failure.
  - Manganese – Matrix Spike Duplicate recovery was outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Nickel was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.
  - Aluminum – 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.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170153 analyzed on sample# B29D48 (103084002)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - All other applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:

Narrative

Attachment 2
Narrative
WSCF103084

- Batch QC 170174 analyzed on sample# B29D49 (103084003)
- All 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.

Narrative

Attachment 2
Narrative
WSCF103084

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-013 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 12	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=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: 103084

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D47	001	SOIL	11-19-10	0735	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	M. Nelson M. Nelson	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory. ☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-017 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 13	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-074	AIR QUALITY:
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-160	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D48	002	SOIL	11-19-10	0159	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 155	M. Nelson	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GK1 applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-021 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY:	
SAMPLING LOCATION: KW Sed. Basin Sample 14	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-507- 22	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, Z=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	Cool--4C	Cool--4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196.	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D49	C03	SOIL	11-19-10	0826	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: NOV 19 2010 1055	RECEIVED BY/STORED IN: M Nelson	DATE/TIME: NOV 19 2010 1055
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A 6003-518 (REV 7)

Friday, November 19, 2010 7:29:48 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-025 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 15	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-72	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D60 DC-1	SOIL	11-19-10	0746	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 19 2010 1055	M Nelson	NOV 19 2010 1055

LABORATORY SECTION — RECEIVED BY

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

DRAFT

TITLE — DATE/TIME

DISPOSED BY — DATE/TIME

A-6003-918 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-029 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 16	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: NA HNF-N-507-10	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D51 005	SOIL	11-18-10	0912	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	N. Nelson Manda	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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ChemWare

Attachment 2
Narrative
WSCF103268

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on December 7, 2010. The sample was 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. Also is attached an Issue Resolution Form (IRF) pertaining to additional metals analysis and gross alpha/beta discrete analysis was not performed.

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

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):

- Batch QC 170875 analyzed on sample# B29T97 (103268001)

All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF103268

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

- Batch QC 170755 analyzed on sample# B273B5 (103106001)
  - An Issue Resolution Form (CHPRC Tracking Number: 10-280) was issued for sample B29T97 (103268001). Additional metals were added to analysis to be in-line with previous work order requests.
  - Barium and Strontium – Matrix Spike Relative Percent Difference (RPD) outside established laboratory limits. No flags issued.
  - Barium and Strontium – Matrix Spike and Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Aluminum and 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.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met (Refer to analytical note below). A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gamma Energy Analysis:
  - Batch QC 170844 analyzed on sample# B29T97 (103268001)
    - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170845 analyzed on sample# B29T97 (103268001)
    - An Issue Resolution Form (CHPRC Tracking Number: 10-280) was issued for sample B29T97 (103268001). In order to meet the TAT for this work order, discrete analysis of gross alpha/beta was not performed.
    - Gross Alpha and Gross Beta – Duplicate Relative Percent Difference (RPD) outside established laboratory limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

Narrative

Attachment 2
Narrative
WSCF103268

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.

Attachment 2
Narrative
WSCF103268

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-280

Date: 12/7/10 SAF No. F11-024

SDG: 103268 TEST: ICPMS_Metals_200.8, Hex Cr, GEA, Gross AB
DUE DATE: 11/29, 12/1

LOGIN No.: 103268001

Sample No.(s): B29T97

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE

WSCF received one sample on 12/7/10 for a 3 day/12 day TAT for 200.8, Hex Cr, GEA, and Gross AB. WSCF is unable to support this request.

The metals noted on the COC are not in-line with metals added on previous work orders.

Gross AB – is discrete analysis needed or will a gross alpha/beta be sufficient? Discrete analysis takes a minimum of 4 working days.

PROPOSED RESOLUTION

1. S&GRP shall note what specific metals are needed since previous work orders had metals added after analysis.
2. WSCF will report preliminary results for 200.8, Hex Cr, and GEA analyses by COB Thursday 12/9/10.
3. WSCF to analyze and report gross alpha/beta.

CHPRC/BHI/WMH/PNNL COMMENTS

Report the following additional 200.8 metals for all samples noted above.

Aluminum cobalt Manganese copper Nickel zinc
Silver molybdenum Antimony strontium Barium
thallium Beryllium tin arsenic

Please report the preliminary data package with 200.85, GEA, and Hex Cr data.

Perform the discrete alpha/beta analysis and report that data in the final data package.

Sara Champoux 12/7/2010
Signature and Date

4

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-157	PAGE 1 OF 1
COLLECTOR: F. Hall	COMPANY CONTACT: WIDRIG, DI	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DI	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 31 DUP	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: N/A	COA: 302652 ~~301562910~~ 12/6/10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterzation	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, D=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)

ID32468

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1		1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 200.8	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS Gamma	SEE ITEM (3) IN SPECIAL INSTRUCTIONS G P/K

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29T97	SOIL	12/7/10	0730	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F. Hall	DATE/TIME: 0910 12-7-10	RECEIVED BY/STORED IN: TA Frazier	DATE/TIME: 0910 12-7-10
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

OK

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

A-6003-618 (REV 2)

Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 183 KW			DATA PACKAGE: VSR11-031		
VALIDATOR: Eyda Hergenreder		LAB: WSCF		DATE: 03-11-2011	
			SDG: WSCF103010, WSCF103013, WSCF103039, WSCF103070, WSCF103084, WSCF103268		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg		EPA 200.8 X	

SAMPLES/MATRIX Water (1) and soil samples

SDG WSCF103010: B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61
SDG WSCF103013: B29D74 (water)
SDG WSCF103039: B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72
SDG WSCF103070: B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59
SDG WSCF103084: B29D47, B29D48, B29D49, B29D50, B29D51
SDG WSCF103268: B29T97

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:
SDG WSCF103010: Se 0.568 mg/kg
SDG WSCF103039: Ni 0.438 mg/kg; Se 0.493 mg/kg
SDG WSCF103070: Ni 1.18 mg/kg
SDG WSCF103084: Ni 1.18 mg/kg

Equipment blank B29D74: Al 193 ug/L; Mn 24.3 ug/L; Ba 3.89 ug/L; Co 0.440 ug/L; Cu 6.51 ug/L; V 0.417 ug/L; Zn 7.84 ug/L; Pb 1.48 ug/L; Sr 2.75 ug/L;

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:

SDG WSCF103010: Al MS % R = 130%: Sb LCS %R = 167%
SDG WSCF103039: Sb LCS %R = 179%
SDG WSCF103070: Mn MSD %R = 138%; Sb LCS %R = 165%
SDG WSCF103084: Mn MSD %R = 138%; Sb LCS %R = 165%
SDG WSCF103268: Ba MS %R = 32%; Sr MS %R = 40%; Sb LCS %R = 172%

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:

SDG WSCF103268: Ba MS/MSD RPD = 92%; Sr MS/MSD RPD = 64%

Field duplicates B29D66 & B29T97 Hg RPD = 78%

The field split to sample B29D45 is sample B29RL5 that is located in VSR11-032, SDG SL1018. Precision not assessed since samples are in separate VSRs.

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? ..... Yes No N/A

ICP serial dilution %D values acceptable? ..... Yes No N/A

ICP post digestion spike required? ..... Yes No N/A

ICP post digestion spike values acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments:

7. HOLDING TIMES (all levels)

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

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

Comments: None

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 # WSCF103010

QC Batch 170023 **Test** ICP-2008 MS All possible metal
Associated Samples 103010001, 103010002, 103010003, 103010004, 103010005, 103010006, 103010007, 103010008, 103010009, 103010010

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42189**						
Aluminum	7429-90-5		<5.0	ug/L				U	11/19/10
Manganese	7439-96-5		<0.10	ug/L				U	11/19/10
Nickel	7440-02-0		<0.20	ug/L				U	11/19/10
Silver	7440-22-4		<0.10	ug/L				U	11/19/10
Antimony	7440-36-0		<0.30	ug/L				U	11/19/10
Barium	7440-39-3		<0.20	ug/L				U	11/19/10
Beryllium	7440-41-7		<0.10	ug/L				U	11/19/10
Cadmium	7440-43-9		<0.10	ug/L				U	11/19/10
Chromium	7440-47-3		<0.50	ug/L				U	11/19/10
Cobalt	7440-48-4		<0.050	ug/L				U	11/19/10
Copper	7440-50-8		<0.10	ug/L				U	11/19/10
Vanadium	7440-62-2		<0.20	ug/L				U	11/19/10
Zinc	7440-66-6		<0.80	ug/L				U	11/19/10
Lead	7439-92-1		<0.10	ug/L				U	11/19/10
Mercury	7439-97-6		<0.050	ug/L				U	11/19/10
Molybdenum	7439-98-7		<0.050	ug/L				U	11/19/10
Strontium	7440-24-6		<0.10	ug/L				U	11/19/10
Thallium	7440-28-0		<0.050	ug/L				U	11/19/10
Tin	7440-31-5		<0.050	ug/L				U	11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	11/19/10
Selenium	7782-49-2		0.568	ug/L					B	11/19/10
LCS			**QC Sample #42190**							
Aluminum	7429-90-5		7850	mg/kg	95	49 - 124				11/19/10
Manganese	7439-96-5		479	mg/kg	105.8	75 - 121				11/19/10
Nickel	7440-02-0		57.3	mg/kg	103	74 - 122				11/19/10
Silver	7440-22-4		110	mg/kg	108.4	83 - 127				11/19/10
Antimony	7440-36-0		151	mg/kg	167.1	62 - 205				11/19/10
Barium	7440-39-3		328	mg/kg	102.9	78 - 118				11/19/10
Beryllium	7440-41-7		91.1	mg/kg	101.8	77 - 120				11/19/10
Cadmium	7440-43-9		74.7	mg/kg	112.3	76 - 129				11/19/10
Chromium	7440-47-3		75.6	mg/kg	103.7	68 - 119				11/19/10
Cobalt	7440-48-4		77.7	mg/kg	106.3	77 - 122				11/19/10
Copper	7440-50-8		65.9	mg/kg	96.2	67 - 120				11/19/10
Vanadium	7440-62-2		86.5	mg/kg	104.2	67 - 122				11/19/10
Zinc	7440-66-6		180	mg/kg	101.5	73 - 131				11/19/10
Lead	7439-92-1		134	mg/kg	103.2	79 - 124				11/19/10
Mercury	7439-97-6		8.09	mg/kg	97.5	69 - 124				11/19/10
Molybdenum	7439-98-7		53.1	mg/kg	109	80 - 125				11/19/10
Strontium	7440-24-6		58.4	mg/kg	107.3	78 - 119				11/19/10
Thallium	7440-28-0		141	mg/kg	106.2	52 - 137				11/19/10
Tin	7440-31-5		186	mg/kg	107.6	84 - 130				11/19/10
Arsenic	7440-38-2		138	mg/kg	104.2	79 - 125				11/19/10
Selenium	7782-49-2		176	mg/kg	109.2	82 - 133				11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #42191**							
			Original	**102920003**						
Aluminum	7429-90-5		1300	mg/kg	129.8	70 - 130				11/19/10
Manganese	7439-96-5		109	mg/kg	109.2	70 - 130				11/19/10
Nickel	7440-02-0		98.9	mg/kg	98.9	70 - 130				11/19/10
Silver	7440-22-4		97.2	mg/kg	97.2	70 - 130				11/19/10
Antimony	7440-36-0		98.2	mg/kg	98.2	70 - 130				11/19/10
Barium	7440-39-3		100	mg/kg	100.1	70 - 130				11/19/10
Beryllium	7440-41-7		101	mg/kg	101.2	70 - 130				11/19/10
Cadmium	7440-43-9		98.3	mg/kg	98.3	70 - 130				11/19/10
Chromium	7440-47-3		104	mg/kg	103.9	70 - 130				11/19/10
Cobalt	7440-48-4		102	mg/kg	102.2	70 - 130				11/19/10
Copper	7440-50-8		100	mg/kg	100.3	70 - 130				11/19/10
Vanadium	7440-62-2		104	mg/kg	104.3	70 - 130				11/19/10
Zinc	7440-66-6		105	mg/kg	105	70 - 130				11/19/10
Lead	7439-92-1		97.9	mg/kg	97.9	70 - 130				11/19/10
Mercury	7439-97-6		1.98	mg/kg	99	70 - 130				11/19/10
Molybdenum	7439-98-7		97.7	mg/kg	97.7	70 - 130				11/19/10
Strontium	7440-24-6		103	mg/kg	102.6	70 - 130				11/19/10
Thallium	7440-28-0		96.6	mg/kg	96.6	70 - 130				11/19/10
Tin	7440-31-5		98.9	mg/kg	98.9	70 - 130				11/19/10
Arsenic	7440-38-2		100	mg/kg	100.4	70 - 130				11/19/10
Selenium	7782-49-2		99.1	mg/kg	99.1	70 - 130				11/19/10
MSD			**QC Sample #42192**							
			Original	**102920003**				**Paired**	**42191**	

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Aluminum	7429-90-5		1110	mg/kg	110.9	70 - 130	15.70	30		11/19/10
Manganese	7439-96-5		101	mg/kg	101.1	70 - 130	7.70	30		11/19/10
Nickel	7440-02-0		102	mg/kg	101.5	70 - 130	2.60	30		11/19/10
Silver	7440-22-4		96.2	mg/kg	96.2	70 - 130	1.00	30		11/19/10
Antimony	7440-36-0		97.5	mg/kg	97.5	70 - 130	0.70	30		11/19/10
Barium	7440-39-3		98.8	mg/kg	98.8	70 - 130	1.30	30		11/19/10
Beryllium	7440-41-7		101	mg/kg	100.8	70 - 130	0.40	30		11/19/10
Cadmium	7440-43-9		97.6	mg/kg	97.6	70 - 130	0.70	30		11/19/10
Chromium	7440-47-3		103	mg/kg	102.8	70 - 130	1.10	30		11/19/10
Cobalt	7440-48-4		101	mg/kg	101	70 - 130	1.20	30		11/19/10
Copper	7440-50-8		99.2	mg/kg	99.2	70 - 130	1.10	30		11/19/10
Vanadium	7440-62-2		101	mg/kg	100.9	70 - 130	3.30	30		11/19/10
Zinc	7440-66-6		99.6	mg/kg	99.6	70 - 130	5.30	30		11/19/10
Lead	7439-92-1		96.8	mg/kg	96.8	70 - 130	1.10	30		11/19/10
Mercury	7439-97-6		1.86	mg/kg	93	70 - 130	6.20	30		11/19/10
Molybdenum	7439-98-7		96.3	mg/kg	96.3	70 - 130	1.40	30		11/19/10
Strontium	7440-24-6		102	mg/kg	102	70 - 130	0.60	30		11/19/10
Thallium	7440-28-0		95.9	mg/kg	95.9	70 - 130	0.70	30		11/19/10
Tin	7440-31-5		97.7	mg/kg	97.7	70 - 130	1.20	30		11/19/10
Arsenic	7440-38-2		99.5	mg/kg	99.5	70 - 130	0.90	30		11/19/10
Selenium	7782-49-2		97.8	mg/kg	97.8	70 - 130	1.30	30		11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103013

QC Batch 170063
Associated Samples 103013001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42317**						
Aluminum	7429-90-5		<5.0	ug/L				U	11/19/10
Manganese	7439-96-5		<0.10	ug/L				U	11/19/10
Nickel	7440-02-0		<0.20	ug/L				U	11/19/10
Silver	7440-22-4		<0.10	ug/L				U	11/19/10
Antimony	7440-36-0		<0.30	ug/L				U	11/19/10
Barium	7440-39-3		<0.20	ug/L				U	11/19/10
Beryllium	7440-41-7		<0.10	ug/L				U	11/19/10
Cadmium	7440-43-9		<0.10	ug/L				U	11/19/10
Chromium	7440-47-3		<0.50	ug/L				U	11/19/10
Cobalt	7440-48-4		<0.050	ug/L				U	11/19/10
Copper	7440-50-8		<0.10	ug/L				U	11/19/10
Vanadium	7440-62-2		<0.20	ug/L				U	11/19/10
Zinc	7440-66-6		<0.80	ug/L				U	11/19/10
Lead	7439-92-1		<0.10	ug/L				U	11/19/10
Mercury	7439-97-6		<0.050	ug/L				U	11/19/10
Molybdenum	7439-98-7		<0.050	ug/L				U	11/19/10
Strontium	7440-24-6		<0.10	ug/L				U	11/19/10
Thallium	7440-28-0		<0.050	ug/L				U	11/19/10
Tin	7440-31-5		<0.050	ug/L				U	11/19/10

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103013

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	11/19/10
Selenium	7782-49-2		<0.30	ug/L					U	11/19/10
LCS			**QC Sample #42318**							
Aluminum	7429-90-5		409	ug/L	102.2	85 - 115				11/19/10
Manganese	7439-96-5		41.1	ug/L	102.8	85 - 115				11/19/10
Nickel	7440-02-0		41.0	ug/L	102.4	85 - 115				11/19/10
Silver	7440-22-4		40.8	ug/L	101.9	85 - 115				11/19/10
Antimony	7440-36-0		40.4	ug/L	100.9	85 - 115				11/19/10
Barium	7440-39-3		40.4	ug/L	101.1	85 - 115				11/19/10
Beryllium	7440-41-7		40.9	ug/L	102.3	85 - 115				11/19/10
Cadmium	7440-43-9		39.9	ug/L	99.7	85 - 115				11/19/10
Chromium	7440-47-3		41.8	ug/L	104.4	85 - 115				11/19/10
Cobalt	7440-48-4		41.4	ug/L	103.4	85 - 115				11/19/10
Copper	7440-50-8		41.4	ug/L	103.5	85 - 115				11/19/10
Vanadium	7440-62-2		41.2	ug/L	103	85 - 115				11/19/10
Zinc	7440-66-6		40.0	ug/L	100	85 - 115				11/19/10
Lead	7439-92-1		41.7	ug/L	104.2	85 - 115				11/19/10
Mercury	7439-97-6		2.02	ug/L	100.8	85 - 115				11/19/10
Molybdenum	7439-98-7		40.9	ug/L	102.2	85 - 115				11/19/10
Strontium	7440-24-6		40.8	ug/L	101.9	85 - 115				11/19/10
Thallium	7440-28-0		41.4	ug/L	103.6	85 - 115				11/19/10
Tin	7440-31-5		40.7	ug/L	101.8	85 - 115				11/19/10
Arsenic	7440-38-2		40.4	ug/L	100.9	85 - 115				11/19/10
Selenium	7782-49-2		39.0	ug/L	97.6	85 - 115				11/19/10

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REVISION 1

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103013

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #42319**							
			Original 102912004							
Aluminum	7429-90-5		408	ug/L	101.9	70 - 130				11/19/10
Manganese	7439-96-5		41.1	ug/L	102.7	70 - 130				11/19/10
Nickel	7440-02-0		41.3	ug/L	103.4	70 - 130				11/19/10
Silver	7440-22-4		40.8	ug/L	102.1	70 - 130				11/19/10
Antimony	7440-36-0		40.5	ug/L	101.2	70 - 130				11/19/10
Barium	7440-39-3		40.6	ug/L	101.6	70 - 130				11/19/10
Beryllium	7440-41-7		40.3	ug/L	100.8	70 - 130				11/19/10
Cadmium	7440-43-9		39.7	ug/L	99.2	70 - 130				11/19/10
Chromium	7440-47-3		41.8	ug/L	104.6	70 - 130				11/19/10
Cobalt	7440-48-4		41.2	ug/L	103	70 - 130				11/19/10
Copper	7440-50-8		40.7	ug/L	101.6	70 - 130				11/19/10
Vanadium	7440-62-2		41.0	ug/L	102.4	70 - 130				11/19/10
Zinc	7440-66-6		40.0	ug/L	99.9	70 - 130				11/19/10
Lead	7439-92-1		41.8	ug/L	104.6	70 - 130				11/19/10
Mercury	7439-97-6		2.03	ug/L	101.6	70 - 130				11/19/10
Molybdenum	7439-98-7		40.6	ug/L	101.6	70 - 130				11/19/10
Strontium	7440-24-6		40.5	ug/L	101.2	70 - 130				11/19/10
Thallium	7440-28-0		41.4	ug/L	103.4	70 - 130				11/19/10
Tin	7440-31-5		40.9	ug/L	102.3	70 - 130				11/19/10
Arsenic	7440-38-2		40.8	ug/L	102	70 - 130				11/19/10
Selenium	7782-49-2		40.1	ug/L	100.3	70 - 130				11/19/10
MSD			**QC Sample #42320**							
			Original 102912004					**Paired**	**42319**	

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103013

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Aluminum	7429-90-5		411	ug/L	102.7	70 - 130	0.80	20		11/19/10
Manganese	7439-96-5		41.3	ug/L	103.4	70 - 130	0.70	20		11/19/10
Nickel	7440-02-0		41.2	ug/L	103	70 - 130	0.40	20		11/19/10
Silver	7440-22-4		40.8	ug/L	102.1	70 - 130	0.00	20		11/19/10
Antimony	7440-36-0		40.6	ug/L	101.5	70 - 130	0.30	20		11/19/10
Barium	7440-39-3		41.0	ug/L	102.6	70 - 130	1.00	20		11/19/10
Beryllium	7440-41-7		41.1	ug/L	102.8	70 - 130	2.00	20		11/19/10
Cadmium	7440-43-9		40.3	ug/L	100.8	70 - 130	1.60	20		11/19/10
Chromium	7440-47-3		42.1	ug/L	105.2	70 - 130	0.60	20		11/19/10
Cobalt	7440-48-4		41.3	ug/L	103.2	70 - 130	0.20	20		11/19/10
Copper	7440-50-8		41.1	ug/L	102.8	70 - 130	1.20	20		11/19/10
Vanadium	7440-62-2		41.6	ug/L	103.9	70 - 130	1.50	20		11/19/10
Zinc	7440-66-6		39.5	ug/L	98.8	70 - 130	1.10	20		11/19/10
Lead	7439-92-1		42.1	ug/L	105.2	70 - 130	0.60	20		11/19/10
Mercury	7439-97-6		2.02	ug/L	100.8	70 - 130	0.80	20		11/19/10
Molybdenum	7439-98-7		41.0	ug/L	102.5	70 - 130	0.90	20		11/19/10
Strontium	7440-24-6		41.1	ug/L	102.7	70 - 130	1.50	20		11/19/10
Thallium	7440-28-0		41.5	ug/L	103.7	70 - 130	0.30	20		11/19/10
Tin	7440-31-5		40.7	ug/L	101.8	70 - 130	0.50	20		11/19/10
Arsenic	7440-38-2		41.1	ug/L	102.8	70 - 130	0.80	20		11/19/10
Selenium	7782-49-2		39.2	ug/L	97.9	70 - 130	2.40	20		11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103039

QC Batch 170026 **Test** ICP-2008 MS All possible metal
Associated Samples 103039001, 103039002, 103039003, 103039004, 103039005, 103039006, 103039007, 103039008, 103039009, 103039010, 103039011

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42206**						
Aluminum	7429-90-5		<5.0	ug/L				U	11/19/10
Manganese	7439-96-5		<0.10	ug/L				U	11/19/10
Nickel	7440-02-0		0.438	ug/L				B	11/19/10
Silver	7440-22-4		<0.10	ug/L				U	11/19/10
Antimony	7440-36-0		<0.30	ug/L				U	11/19/10
Barium	7440-39-3		<0.20	ug/L				U	11/19/10
Beryllium	7440-41-7		<0.10	ug/L				U	11/19/10
Cadmium	7440-43-9		<0.10	ug/L				U	11/19/10
Chromium	7440-47-3		<0.50	ug/L				U	11/19/10
Cobalt	7440-48-4		<0.050	ug/L				U	11/19/10
Copper	7440-50-8		<0.10	ug/L				U	11/19/10
Vanadium	7440-62-2		<0.20	ug/L				U	11/19/10
Zinc	7440-66-6		<0.80	ug/L				U	11/19/10
Lead	7439-92-1		<0.10	ug/L				U	11/19/10
Mercury	7439-97-6		<0.050	ug/L				U	11/19/10
Molybdenum	7439-98-7		<0.050	ug/L				U	11/19/10
Strontium	7440-24-6		<0.10	ug/L				U	11/19/10
Thallium	7440-28-0		<0.050	ug/L				U	11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103039

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Tin	7440-31-5		<0.050	ug/L					U	11/19/10
Arsenic	7440-38-2		<0.40	ug/L					U	11/19/10
Selenium	7782-49-2		0.493	ug/L					B	11/19/10
LCS			**QC Sample #42207**							
Aluminum	7429-90-5		8010	mg/kg	97	49 - 124				11/19/10
Manganese	7439-96-5		469	mg/kg	103.4	75 - 121				11/19/10
Nickel	7440-02-0		57.1	mg/kg	102.7	74 - 122				11/19/10
Silver	7440-22-4		99.8	mg/kg	98.8	83 - 127				11/19/10
Antimony	7440-36-0		161	mg/kg	178.9	62 - 205				11/19/10
Barium	7440-39-3		321	mg/kg	100.6	78 - 118				11/19/10
Beryllium	7440-41-7		87.3	mg/kg	97.6	77 - 120				11/19/10
Cadmium	7440-43-9		64.7	mg/kg	97.2	76 - 129				11/19/10
Chromium	7440-47-3		72.1	mg/kg	99	68 - 119				11/19/10
Cobalt	7440-48-4		73.5	mg/kg	100.5	77 - 122				11/19/10
Copper	7440-50-8		62.5	mg/kg	91.2	67 - 120				11/19/10
Vanadium	7440-62-2		84.8	mg/kg	102.1	67 - 122				11/19/10
Zinc	7440-66-6		171	mg/kg	96.5	73 - 131				11/19/10
Lead	7439-92-1		120	mg/kg	92.2	79 - 124				11/19/10
Mercury	7439-97-6		7.40	mg/kg	89.2	69 - 124				11/19/10
Molybdenum	7439-98-7		50.5	mg/kg	103.7	80 - 125				11/19/10
Strontium	7440-24-6		57.1	mg/kg	105	78 - 119				11/19/10
Thallium	7440-28-0		122	mg/kg	91.7	52 - 137				11/19/10
Tin	7440-31-5		180	mg/kg	104.2	84 - 130				11/19/10
Arsenic	7440-38-2		132	mg/kg	100.1	79 - 125				11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103039

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Selenium	7782-49-2		172	mg/kg	107	82 - 133				11/19/10
MS			**QC Sample #42208**							
			Original 102960001							
Aluminum	7429-90-5		994	mg/kg	99.4	70 - 130				11/19/10
Manganese	7439-96-5		106	mg/kg	106.4	70 - 130				11/19/10
Nickel	7440-02-0		96.3	mg/kg	96.3	70 - 130				11/19/10
Silver	7440-22-4		92.0	mg/kg	92	70 - 130				11/19/10
Antimony	7440-36-0		93.9	mg/kg	93.9	70 - 130				11/19/10
Barium	7440-39-3		107	mg/kg	107	70 - 130				11/19/10
Beryllium	7440-41-7		94.3	mg/kg	94.3	70 - 130				11/19/10
Cadmium	7440-43-9		94.9	mg/kg	94.9	70 - 130				11/19/10
Chromium	7440-47-3		98.8	mg/kg	98.8	70 - 130				11/19/10
Cobalt	7440-48-4		94.9	mg/kg	94.9	70 - 130				11/19/10
Copper	7440-50-8		89.9	mg/kg	89.9	70 - 130				11/19/10
Vanadium	7440-62-2		103	mg/kg	102.5	70 - 130				11/19/10
Zinc	7440-66-6		94.6	mg/kg	94.6	70 - 130				11/19/10
Lead	7439-92-1		92.4	mg/kg	92.4	70 - 130				11/19/10
Mercury	7439-97-6		1.81	mg/kg	90.5	70 - 130				11/19/10
Molybdenum	7439-98-7		94.5	mg/kg	94.5	70 - 130				11/19/10
Strontium	7440-24-6		109	mg/kg	108.9	70 - 130				11/19/10
Thallium	7440-28-0		90.5	mg/kg	90.5	70 - 130				11/19/10
Tin	7440-31-5		96.7	mg/kg	96.7	70 - 130				11/19/10
Arsenic	7440-38-2		98.3	mg/kg	98.3	70 - 130				11/19/10
Selenium	7782-49-2		102	mg/kg	102.1	70 - 130				11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103039

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MSD			**QC Sample #42209**								
			Original	**102960001**					**Paired**	**42208**	
Aluminum	7429-90-5		1200	mg/kg	119.6	70 - 130	18.40	30			11/19/10
Manganese	7439-96-5		75.6	mg/kg	75.6	70 - 130	33.80	30	*	X	11/19/10
Nickel	7440-02-0		95.4	mg/kg	95.4	70 - 130	0.90	30			11/19/10
Silver	7440-22-4		91.0	mg/kg	91	70 - 130	1.10	30			11/19/10
Antimony	7440-36-0		92.4	mg/kg	92.4	70 - 130	1.60	30			11/19/10
Barium	7440-39-3		106	mg/kg	105.6	70 - 130	1.30	30			11/19/10
Beryllium	7440-41-7		90.0	mg/kg	90	70 - 130	4.70	30			11/19/10
Cadmium	7440-43-9		94.4	mg/kg	94.4	70 - 130	0.50	30			11/19/10
Chromium	7440-47-3		94.7	mg/kg	94.7	70 - 130	4.20	30			11/19/10
Cobalt	7440-48-4		91.4	mg/kg	91.4	70 - 130	3.80	30			11/19/10
Copper	7440-50-8		86.9	mg/kg	86.9	70 - 130	3.40	30			11/19/10
Vanadium	7440-62-2		92.7	mg/kg	92.7	70 - 130	10.00	30			11/19/10
Zinc	7440-66-6		89.7	mg/kg	89.7	70 - 130	5.30	30			11/19/10
Lead	7439-92-1		91.0	mg/kg	91	70 - 130	1.50	30			11/19/10
Mercury	7439-97-6		1.64	mg/kg	82	70 - 130	9.90	30			11/19/10
Molybdenum	7439-98-7		92.7	mg/kg	92.7	70 - 130	1.90	30			11/19/10
Strontium	7440-24-6		106	mg/kg	105.7	70 - 130	3.00	30			11/19/10
Thallium	7440-28-0		90.4	mg/kg	90.4	70 - 130	0.10	30			11/19/10
Tin	7440-31-5		95.9	mg/kg	95.9	70 - 130	0.80	30			11/19/10
Arsenic	7440-38-2		96.7	mg/kg	96.7	70 - 130	1.60	30			11/19/10
Selenium	7782-49-2		98.7	mg/kg	98.7	70 - 130	3.40	30			11/19/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

QC Batch 170116 **Test** ICP-2008 MS All possible metal
Associated Samples 103070001, 103070002, 103070003, 103070004, 103070005, 103070006, 103070007, 103070008, 103070009, 103070010, 103070011

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #43555**						
Aluminum	7429-90-5		<5.0	ug/L				U	11/22/10
Manganese	7439-96-5		<0.10	ug/L				U	11/22/10
Nickel	7440-02-0		1.18	ug/L				B	11/22/10
Silver	7440-22-4		<0.10	ug/L				U	11/22/10
Antimony	7440-36-0		<0.30	ug/L				U	11/22/10
Barium	7440-39-3		<0.20	ug/L				U	11/22/10
Beryllium	7440-41-7		<0.10	ug/L				U	11/22/10
Cadmium	7440-43-9		<0.10	ug/L				U	11/22/10
Chromium	7440-47-3		<0.50	ug/L				U	11/22/10
Cobalt	7440-48-4		<0.050	ug/L				U	11/22/10
Copper	7440-50-8		<0.10	ug/L				U	11/22/10
Vanadium	7440-62-2		<0.20	ug/L				U	11/22/10
Zinc	7440-66-6		<0.80	ug/L				U	11/22/10
Lead	7439-92-1		<0.10	ug/L				U	11/22/10
Mercury	7439-97-6		<0.050	ug/L				U	11/22/10
Molybdenum	7439-98-7		<0.050	ug/L				U	11/22/10
Strontium	7440-24-6		<0.10	ug/L				U	11/22/10
Thallium	7440-28-0		<0.050	ug/L				U	11/22/10

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Tin	7440-31-5		<0.050	ug/L					U	11/22/10
Arsenic	7440-38-2		<0.40	ug/L					U	11/22/10
Selenium	7782-49-2		<0.30	ug/L					U	11/22/10
LCS			**QC Sample #43556**							
Aluminum	7429-90-5		7470	mg/kg	90.4	49 - 124				11/22/10
Manganese	7439-96-5		442	mg/kg	97.6	75 - 121				11/22/10
Nickel	7440-02-0		51.7	mg/kg	92.9	74 - 122				11/22/10
Silver	7440-22-4		103	mg/kg	102.2	83 - 127				11/22/10
Antimony	7440-36-0		148	mg/kg	164.6	62 - 205				11/22/10
Barium	7440-39-3		317	mg/kg	99.3	78 - 118				11/22/10
Beryllium	7440-41-7		85.6	mg/kg	95.6	77 - 120				11/22/10
Cadmium	7440-43-9		65.7	mg/kg	98.8	76 - 129				11/22/10
Chromium	7440-47-3		67.7	mg/kg	92.8	68 - 119				11/22/10
Cobalt	7440-48-4		70.7	mg/kg	96.7	77 - 122				11/22/10
Copper	7440-50-8		61.8	mg/kg	90.2	67 - 120				11/22/10
Vanadium	7440-62-2		79.3	mg/kg	95.6	67 - 122				11/22/10
Zinc	7440-66-6		171	mg/kg	96.6	73 - 131				11/22/10
Lead	7439-92-1		127	mg/kg	98	79 - 124				11/22/10
Mercury	7439-97-6		7.86	mg/kg	94.7	69 - 124				11/22/10
Molybdenum	7439-98-7		50.9	mg/kg	104.6	80 - 125				11/22/10
Strontium	7440-24-6		54.3	mg/kg	99.8	78 - 119				11/22/10
Thallium	7440-28-0		124	mg/kg	92.9	52 - 137				11/22/10
Tin	7440-31-5		179	mg/kg	103.4	84 - 130				11/22/10
Arsenic	7440-38-2		131	mg/kg	99.5	79 - 125				11/22/10

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Selenium	7782-49-2		174	mg/kg	108.3	82 - 133				11/22/10
MS			**QC Sample #43557**							
			Original 103001001							
Aluminum	7429-90-5		590	mg/kg	59	70 - 130			X	11/22/10
Manganese	7439-96-5		98.9	mg/kg	98.9	70 - 130				11/22/10
Nickel	7440-02-0		86.3	mg/kg	86.3	70 - 130				11/22/10
Silver	7440-22-4		94.6	mg/kg	94.6	70 - 130				11/22/10
Antimony	7440-36-0		78.6	mg/kg	78.6	70 - 130				11/22/10
Barium	7440-39-3		97.8	mg/kg	97.8	70 - 130				11/22/10
Beryllium	7440-41-7		93.2	mg/kg	93.2	70 - 130				11/22/10
Cadmium	7440-43-9		96.3	mg/kg	96.3	70 - 130				11/22/10
Chromium	7440-47-3		88.7	mg/kg	88.7	70 - 130				11/22/10
Cobalt	7440-48-4		88.7	mg/kg	88.7	70 - 130				11/22/10
Copper	7440-50-8		84.1	mg/kg	84.1	70 - 130				11/22/10
Vanadium	7440-62-2		91.0	mg/kg	91	70 - 130				11/22/10
Zinc	7440-66-6		88.8	mg/kg	88.8	70 - 130				11/22/10
Lead	7439-92-1		102	mg/kg	102.5	70 - 130				11/22/10
Mercury	7439-97-6		1.95	mg/kg	97.5	70 - 130				11/22/10
Molybdenum	7439-98-7		93.5	mg/kg	93.5	70 - 130				11/22/10
Strontium	7440-24-6		106	mg/kg	105.8	70 - 130				11/22/10
Thallium	7440-28-0		101	mg/kg	101	70 - 130				11/22/10
Tin	7440-31-5		96.0	mg/kg	96	70 - 130				11/22/10
Arsenic	7440-38-2		101	mg/kg	100.7	70 - 130				11/22/10
Selenium	7782-49-2		101	mg/kg	100.8	70 - 130				11/22/10

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MSD			**QC Sample #43558**								
			Original	**103001001**					**Paired**	**43557**	
Aluminum	7429-90-5		1320	mg/kg	132	70 - 130	76.40	30	*	X	11/22/10
Manganese	7439-96-5		138	mg/kg	137.9	70 - 130	32.90	30	*	NX	11/22/10
Nickel	7440-02-0		93.9	mg/kg	93.9	70 - 130	8.40	30			11/22/10
Silver	7440-22-4		97.5	mg/kg	97.5	70 - 130	3.00	30			11/22/10
Antimony	7440-36-0		84.7	mg/kg	84.7	70 - 130	7.50	30			11/22/10
Barium	7440-39-3		100	mg/kg	100.4	70 - 130	2.60	30			11/22/10
Beryllium	7440-41-7		98.7	mg/kg	98.7	70 - 130	5.70	30			11/22/10
Cadmium	7440-43-9		100	mg/kg	100.1	70 - 130	3.90	30			11/22/10
Chromium	7440-47-3		94.9	mg/kg	94.9	70 - 130	6.80	30			11/22/10
Cobalt	7440-48-4		94.4	mg/kg	94.4	70 - 130	6.20	30			11/22/10
Copper	7440-50-8		89.7	mg/kg	89.7	70 - 130	6.40	30			11/22/10
Vanadium	7440-62-2		98.1	mg/kg	98.1	70 - 130	7.50	30			11/22/10
Zinc	7440-66-6		98.5	mg/kg	98.5	70 - 130	10.40	30			11/22/10
Lead	7439-92-1		106	mg/kg	105.6	70 - 130	3.00	30			11/22/10
Mercury	7439-97-6		2.16	mg/kg	108	70 - 130	10.20	30			11/22/10
Molybdenum	7439-98-7		97.8	mg/kg	97.8	70 - 130	4.50	30			11/22/10
Strontium	7440-24-6		116	mg/kg	116.2	70 - 130	9.40	30			11/22/10
Thallium	7440-28-0		104	mg/kg	103.9	70 - 130	2.80	30			11/22/10
Tin	7440-31-5		101	mg/kg	101.2	70 - 130	5.30	30			11/22/10
Arsenic	7440-38-2		107	mg/kg	106.7	70 - 130	5.80	30			11/22/10
Selenium	7782-49-2		108	mg/kg	108	70 - 130	6.90	30			11/22/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103084

QC Batch 170116 **Test** ICP-2008 MS All possible metal
Associated Samples 103084001, 103084002, 103084003, 103084004, 103084005

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #43555**						
Aluminum	7429-90-5		<5.0	ug/L				U	11/22/10
Manganese	7439-96-5		<0.10	ug/L				U	11/22/10
Nickel	7440-02-0		1.18	ug/L				B	11/22/10
Silver	7440-22-4		<0.10	ug/L				U	11/22/10
Antimony	7440-36-0		<0.30	ug/L				U	11/22/10
Barium	7440-39-3		<0.20	ug/L				U	11/22/10
Beryllium	7440-41-7		<0.10	ug/L				U	11/22/10
Cadmium	7440-43-9		<0.10	ug/L				U	11/22/10
Chromium	7440-47-3		<0.50	ug/L				U	11/22/10
Cobalt	7440-48-4		<0.050	ug/L				U	11/22/10
Copper	7440-50-8		<0.10	ug/L				U	11/22/10
Vanadium	7440-62-2		<0.20	ug/L				U	11/22/10
Zinc	7440-66-6		<0.80	ug/L				U	11/22/10
Lead	7439-92-1		<0.10	ug/L				U	11/22/10
Mercury	7439-97-6		<0.050	ug/L				U	11/22/10
Molybdenum	7439-98-7		<0.050	ug/L				U	11/22/10
Strontium	7440-24-6		<0.10	ug/L				U	11/22/10
Thallium	7440-28-0		<0.050	ug/L				U	11/22/10
Tin	7440-31-5		<0.050	ug/L				U	11/22/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103084

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	11/22/10
Selenium	7782-49-2		<0.30	ug/L					U	11/22/10
LCS			**QC Sample #43556**							
Aluminum	7429-90-5		7470	mg/kg	90.4	49 - 124				11/22/10
Manganese	7439-96-5		442	mg/kg	97.6	75 - 121				11/22/10
Nickel	7440-02-0		51.7	mg/kg	92.9	74 - 122				11/22/10
Silver	7440-22-4		103	mg/kg	102.2	83 - 127				11/22/10
Antimony	7440-36-0		148	mg/kg	164.6	62 - 205				11/22/10
Barium	7440-39-3		317	mg/kg	99.3	78 - 118				11/22/10
Beryllium	7440-41-7		85.6	mg/kg	95.6	77 - 120				11/22/10
Cadmium	7440-43-9		65.7	mg/kg	98.8	76 - 129				11/22/10
Chromium	7440-47-3		67.7	mg/kg	92.8	68 - 119				11/22/10
Cobalt	7440-48-4		70.7	mg/kg	96.7	77 - 122				11/22/10
Copper	7440-50-8		61.8	mg/kg	90.2	67 - 120				11/22/10
Vanadium	7440-62-2		79.3	mg/kg	95.6	67 - 122				11/22/10
Zinc	7440-66-6		171	mg/kg	96.6	73 - 131				11/22/10
Lead	7439-92-1		127	mg/kg	98	79 - 124				11/22/10
Mercury	7439-97-6		7.86	mg/kg	94.7	69 - 124				11/22/10
Molybdenum	7439-98-7		50.9	mg/kg	104.6	80 - 125				11/22/10
Strontium	7440-24-6		54.3	mg/kg	99.8	78 - 119				11/22/10
Thallium	7440-28-0		124	mg/kg	92.9	52 - 137				11/22/10
Tin	7440-31-5		179	mg/kg	103.4	84 - 130				11/22/10
Arsenic	7440-38-2		131	mg/kg	99.5	79 - 125				11/22/10
Selenium	7782-49-2		174	mg/kg	108.3	82 - 133				11/22/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103084

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #43557**							
			Original	**103001001**						
Aluminum	7429-90-5		590	mg/kg	59	70 - 130			X	11/22/10
Manganese	7439-96-5		98.9	mg/kg	98.9	70 - 130				11/22/10
Nickel	7440-02-0		86.3	mg/kg	86.3	70 - 130				11/22/10
Silver	7440-22-4		94.6	mg/kg	94.6	70 - 130				11/22/10
Antimony	7440-36-0		78.6	mg/kg	78.6	70 - 130				11/22/10
Barium	7440-39-3		97.8	mg/kg	97.8	70 - 130				11/22/10
Beryllium	7440-41-7		93.2	mg/kg	93.2	70 - 130				11/22/10
Cadmium	7440-43-9		96.3	mg/kg	96.3	70 - 130				11/22/10
Chromium	7440-47-3		88.7	mg/kg	88.7	70 - 130				11/22/10
Cobalt	7440-48-4		88.7	mg/kg	88.7	70 - 130				11/22/10
Copper	7440-50-8		84.1	mg/kg	84.1	70 - 130				11/22/10
Vanadium	7440-62-2		91.0	mg/kg	91	70 - 130				11/22/10
Zinc	7440-66-6		88.8	mg/kg	88.8	70 - 130				11/22/10
Lead	7439-92-1		102	mg/kg	102.5	70 - 130				11/22/10
Mercury	7439-97-6		1.95	mg/kg	97.5	70 - 130				11/22/10
Molybdenum	7439-98-7		93.5	mg/kg	93.5	70 - 130				11/22/10
Strontium	7440-24-6		106	mg/kg	105.8	70 - 130				11/22/10
Thallium	7440-28-0		101	mg/kg	101	70 - 130				11/22/10
Tin	7440-31-5		96.0	mg/kg	96	70 - 130				11/22/10
Arsenic	7440-38-2		101	mg/kg	100.7	70 - 130				11/22/10
Selenium	7782-49-2		101	mg/kg	100.8	70 - 130				11/22/10
MSD			**QC Sample #43558**							
			Original	**103001001**				**Paired**	**43557**	

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103084

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Aluminum	7429-90-5		1320	mg/kg	132	70 - 130	76.40	30	*	X	11/22/10
Manganese	7439-96-5		138	mg/kg	137.9	70 - 130	32.90	30	*	NX	11/22/10
Nickel	7440-02-0		93.9	mg/kg	93.9	70 - 130	8.40	30			11/22/10
Silver	7440-22-4		97.5	mg/kg	97.5	70 - 130	3.00	30			11/22/10
Antimony	7440-36-0		84.7	mg/kg	84.7	70 - 130	7.50	30			11/22/10
Barium	7440-39-3		100	mg/kg	100.4	70 - 130	2.60	30			11/22/10
Beryllium	7440-41-7		98.7	mg/kg	98.7	70 - 130	5.70	30			11/22/10
Cadmium	7440-43-9		100	mg/kg	100.1	70 - 130	3.90	30			11/22/10
Chromium	7440-47-3		94.9	mg/kg	94.9	70 - 130	6.80	30			11/22/10
Cobalt	7440-48-4		94.4	mg/kg	94.4	70 - 130	6.20	30			11/22/10
Copper	7440-50-8		89.7	mg/kg	89.7	70 - 130	6.40	30			11/22/10
Vanadium	7440-62-2		98.1	mg/kg	98.1	70 - 130	7.50	30			11/22/10
Zinc	7440-66-6		98.5	mg/kg	98.5	70 - 130	10.40	30			11/22/10
Lead	7439-92-1		106	mg/kg	105.6	70 - 130	3.00	30			11/22/10
Mercury	7439-97-6		2.16	mg/kg	108	70 - 130	10.20	30			11/22/10
Molybdenum	7439-98-7		97.8	mg/kg	97.8	70 - 130	4.50	30			11/22/10
Strontium	7440-24-6		116	mg/kg	116.2	70 - 130	9.40	30			11/22/10
Thallium	7440-28-0		104	mg/kg	103.9	70 - 130	2.80	30			11/22/10
Tin	7440-31-5		101	mg/kg	101.2	70 - 130	5.30	30			11/22/10
Arsenic	7440-38-2		107	mg/kg	106.7	70 - 130	5.80	30			11/22/10
Selenium	7782-49-2		108	mg/kg	108	70 - 130	6.90	30			11/22/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103268

QC Batch 170755
Associated Samples 103268001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #43423**							
Aluminum	7429-90-5		<5.0	ug/L					U	12/08/10
Manganese	7439-96-5		<0.10	ug/L					U	12/08/10
Nickel	7440-02-0		<0.20	ug/L					U	12/08/10
Silver	7440-22-4		<0.10	ug/L					U	12/08/10
Antimony	7440-36-0		<0.30	ug/L					U	12/08/10
Barium	7440-39-3		<0.20	ug/L					U	12/08/10
Beryllium	7440-41-7		<0.10	ug/L					U	12/08/10
Cadmium	7440-43-9		<0.10	ug/L					U	12/08/10
Chromium	7440-47-3		<0.50	ug/L					U	12/08/10
Cobalt	7440-48-4		<0.050	ug/L					U	12/08/10
Copper	7440-50-8		<0.10	ug/L					U	12/08/10
Vanadium	7440-62-2		<0.20	ug/L					U	12/08/10
Zinc	7440-66-6		<0.80	ug/L					U	12/08/10
Lead	7439-92-1		<0.10	ug/L					U	12/08/10
Mercury	7439-97-6		<0.050	ug/L					U	12/08/10
Molybdenum	7439-98-7		<0.050	ug/L					U	12/08/10
Strontium	7440-24-6		<0.10	ug/L					U	12/08/10
Thallium	7440-28-0		<0.050	ug/L					U	12/08/10
Tin	7440-31-5		<0.050	ug/L					U	12/08/10

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Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103268

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Arsenic	7440-38-2		<0.40	ug/L					U	12/08/10
Selenium	7782-49-2		<0.30	ug/L					U	12/08/10
LCS			**QC Sample #43424**							
Aluminum	7429-90-5		7350	mg/kg	88.9	49 - 124				12/08/10
Manganese	7439-96-5		424	mg/kg	93.6	75 - 121				12/08/10
Nickel	7440-02-0		52.5	mg/kg	94.3	74 - 122				12/08/10
Silver	7440-22-4		101	mg/kg	100.3	83 - 127				12/08/10
Antimony	7440-36-0		155	mg/kg	171.8	62 - 205				12/08/10
Barium	7440-39-3		310	mg/kg	97.1	78 - 118				12/08/10
Beryllium	7440-41-7		84.3	mg/kg	94.2	77 - 120				12/08/10
Cadmium	7440-43-9		65.4	mg/kg	98.3	76 - 129				12/08/10
Chromium	7440-47-3		67.7	mg/kg	92.8	68 - 119				12/08/10
Cobalt	7440-48-4		69.2	mg/kg	94.6	77 - 122				12/08/10
Copper	7440-50-8		61.4	mg/kg	89.5	67 - 120				12/08/10
Vanadium	7440-62-2		79.6	mg/kg	95.9	67 - 122				12/08/10
Zinc	7440-66-6		163	mg/kg	91.9	73 - 131				12/08/10
Lead	7439-92-1		125	mg/kg	96.4	79 - 124				12/08/10
Mercury	7439-97-6		7.76	mg/kg	93.5	69 - 124				12/08/10
Molybdenum	7439-98-7		50.6	mg/kg	103.8	80 - 125				12/08/10
Strontium	7440-24-6		53.0	mg/kg	97.4	78 - 119				12/08/10
Thallium	7440-28-0		124	mg/kg	93.2	52 - 137				12/08/10
Tin	7440-31-5		177	mg/kg	102.1	84 - 130				12/08/10
Arsenic	7440-38-2		128	mg/kg	96.9	79 - 125				12/08/10
Selenium	7782-49-2		158	mg/kg	98.3	82 - 133				12/08/10

DRAFT

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103268

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #43425**							
			Original	**103106001**						
Aluminum	7429-90-5		2180	mg/kg	217.6	70 - 130			X	12/08/10
Manganese	7439-96-5		-457	mg/kg	-455	70 - 130			X	12/08/10
Nickel	7440-02-0		90.4	mg/kg	90.1	70 - 130				12/08/10
Silver	7440-22-4		95.6	mg/kg	95.2	70 - 130				12/08/10
Antimony	7440-36-0		85.6	mg/kg	85.3	70 - 130				12/08/10
Barium	7440-39-3		32.0	mg/kg	31.9	70 - 130			N	12/08/10
Beryllium	7440-41-7		91.8	mg/kg	91.4	70 - 130				12/08/10
Cadmium	7440-43-9		96.3	mg/kg	95.9	70 - 130				12/08/10
Chromium	7440-47-3		93.7	mg/kg	93.4	70 - 130				12/08/10
Cobalt	7440-48-4		89.9	mg/kg	89.6	70 - 130				12/08/10
Copper	7440-50-8		85.0	mg/kg	84.7	70 - 130				12/08/10
Vanadium	7440-62-2		89.9	mg/kg	89.6	70 - 130				12/08/10
Zinc	7440-66-6		90.0	mg/kg	89.7	70 - 130				12/08/10
Lead	7439-92-1		101	mg/kg	100.2	70 - 130				12/08/10
Mercury	7439-97-6		1.95	mg/kg	97	70 - 130				12/08/10
Molybdenum	7439-98-7		95.7	mg/kg	95.4	70 - 130				12/08/10
Strontium	7440-24-6		39.8	mg/kg	39.7	70 - 130			N	12/08/10
Thallium	7440-28-0		98.2	mg/kg	97.8	70 - 130				12/08/10
Tin	7440-31-5		96.4	mg/kg	96.1	70 - 130				12/08/10
Arsenic	7440-38-2		99.3	mg/kg	98.9	70 - 130				12/08/10
Selenium	7782-49-2		95.3	mg/kg	95	70 - 130				12/08/10
MSD			**QC Sample #43426**							
			Original	**103106001**				**Paired**	**43425**	

DRAFT

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103268

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Aluminum	7429-90-5		2280	mg/kg	229.7	70 - 130	5.40	30		X	12/08/10
Manganese	7439-96-5		-207	mg/kg	-208.8	70 - 130	-74.20	30		X	12/08/10
Nickel	7440-02-0		91.5	mg/kg	92.4	70 - 130	2.50	30			12/08/10
Silver	7440-22-4		94.3	mg/kg	95.2	70 - 130	0.00	30			12/08/10
Antimony	7440-36-0		83.7	mg/kg	84.5	70 - 130	0.90	30			12/08/10
Barium	7440-39-3		85.1	mg/kg	85.9	70 - 130	91.70	30	*	X	12/08/10
Beryllium	7440-41-7		95.5	mg/kg	96.4	70 - 130	5.30	30			12/08/10
Cadmium	7440-43-9		95.3	mg/kg	96.2	70 - 130	0.30	30			12/08/10
Chromium	7440-47-3		96.6	mg/kg	97.5	70 - 130	4.30	30			12/08/10
Cobalt	7440-48-4		92.5	mg/kg	93.3	70 - 130	4.00	30			12/08/10
Copper	7440-50-8		87.1	mg/kg	88	70 - 130	3.80	30			12/08/10
Vanadium	7440-62-2		95.8	mg/kg	96.7	70 - 130	7.60	30			12/08/10
Zinc	7440-66-6		91.6	mg/kg	92.5	70 - 130	3.10	30			12/08/10
Lead	7439-92-1		98.2	mg/kg	99.1	70 - 130	1.10	30			12/08/10
Mercury	7439-97-6		2.06	mg/kg	104	70 - 130	7.00	30			12/08/10
Molybdenum	7439-98-7		96.1	mg/kg	97	70 - 130	1.70	30			12/08/10
Strontium	7440-24-6		76.1	mg/kg	76.8	70 - 130	63.70	30	*	X	12/08/10
Thallium	7440-28-0		96.4	mg/kg	97.3	70 - 130	0.50	30			12/08/10
Tin	7440-31-5		95.3	mg/kg	96.2	70 - 130	0.10	30			12/08/10
Arsenic	7440-38-2		96.1	mg/kg	97	70 - 130	1.90	30			12/08/10
Selenium	7782-49-2		93.2	mg/kg	94.1	70 - 130	1.00	30			12/08/10

Date: 11 March 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 183 KW
Subject: General Chemistry - Sample Data Groups (SDGs) WSCF103010, WSCF103016, WSCF103039, WSCF103070, WSCF103084 and WSCF103268

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF103010, WSCF103016, WSCF103039, WSCF103070, WSCF103084 and WSCF103268 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
B29D64	11/16/10	Soil	C	7196 (Cr VI)
B29D38	11/16/10	Soil	C	7196 (Cr VI)
B29D39	11/16/10	Soil	C	7196 (Cr VI)
B29D42	11/16/10	Soil	C	7196 (Cr VI)
B29D43	11/16/10	Soil	C	7196 (Cr VI)
B25D52	11/16/10	Soil	C	7196 (Cr VI)
B29D53	11/16/10	Soil	C	7196 (Cr VI)
B29D54	11/16/10	Soil	C	7196 (Cr VI)
B29D55	11/16/10	Soil	C	7196 (Cr VI)
B29D61	11/16/10	Soil	C	7196 (Cr VI)
B29DM9	11/16/10	Water	C	7196 (Cr VI)
B29D60	11/17/10	Soil	C	7196 (Cr VI)
B29D62	11/17/10	Soil	C	7196 (Cr VI)
B29D63	11/17/10	Soil	C	7196 (Cr VI)
B29D65	11/17/10	Soil	C	7196 (Cr VI)
B29D66	11/17/10	Soil	C	7196 (Cr VI)
B29D67	11/17/10	Soil	C	7196 (Cr VI)
B29D68	11/17/10	Soil	C	7196 (Cr VI)
B29D69	11/17/10	Soil	C	7196 (Cr VI)
B29D70	11/17/10	Soil	C	7196 (Cr VI)
B29D71	11/17/10	Soil	C	7196 (Cr VI)
B29D72	11/17/10	Soil	C	7196 (Cr VI)
B29D36	11/18/10	Soil	C	7196 (Cr VI)
B29D37	11/18/10	Soil	C	7196 (Cr VI)
B29D40	11/18/10	Soil	C	7196 (Cr VI)
B29D41	11/18/10	Soil	C	7196 (Cr VI)
B29D44	11/18/10	Soil	C	7196 (Cr VI)
B29D45	11/18/10	Soil	C	7196 (Cr VI)
B29D46	11/18/10	Soil	C	7196 (Cr VI)
B29D56	11/18/10	Soil	C	7196 (Cr VI)

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B29D57	11/18/10	Soil	C	7196 (Cr VI)
B29D58	11/18/10	Soil	C	7196 (Cr VI)
B29D59	11/18/10	Soil	C	7196 (Cr VI)
B29D47	11/19/10	Soil	C	7196 (Cr VI)
B29D48	11/19/10	Soil	C	7196 (Cr VI)
B29D49	11/19/10	Soil	C	7196 (Cr VI)
B29D50	11/19/10	Soil	C	7196 (Cr VI)
B29D51	11/19/10	Soil	C	7196 (Cr VI)
B29T97	12/07/10	Soil	C	7196 (Cr VI)

Data validation was conducted in accordance with the CHPRC validation statement of work, the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5/TPA-CN-264 (SAP), and the Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas, DD-48021. 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 for chromium(VI) after sample collection are analyses within 24 hours for water samples and analysis within 30 days for soil samples. Sample preservation 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

The equipment blanks result was acceptable.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results and laboratory control sample results. According to the SAP, the matrix spike accuracy limit are 70% to 130% and the laboratory control sample accuracy limits are ones specified by the DV procedure.

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

All MS/MSD recoveries were acceptable with the following exceptions.

For SDG WSCF103010, the MS recovery was below the lower acceptance limit. The chromium (VI) results for samples B29D39 and B29D43 were detects and should be qualified as estimates and flagged "J." All other associated sample results were non-detects and should be qualified as estimates and flagged “UJ.” See the table in Appendix 2 for a listing of all affected sample results.

For SDG WSCF103039, batches 170335 and 170344, the MS recoveries were below the lower acceptance limit. All associated sample results were non-detects and should be qualified as estimates and flagged “UJ.” See the table in Appendix 2 for a listing of all affected sample results.

For SDGs WSCF103070 and WSCF103084, the insoluble MS recoveries were below the lower acceptance limit. The chromium (VI) results for samples B29D37, B29D44, B29D45, B29D46, B29D58, B29D47, B29D48, B29D49, B29D50 and B29D51 were detects and should be qualified as estimates and flagged "J.” All other associated sample results were non-detects and should be qualified as estimates and flagged "UJ." 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 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%. When duplicate RPDs exceed the limits and have associated results <5X the reporting limits with difference <2X the reporting limit, no precision infraction occurred.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable.

Field Duplicate Samples

The field duplicate result was acceptable.

Field Split Samples

Sample B29D45 is a field split to sample B29RL4 assigned to SDG W06073 in VSR11-032.

- **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**

SDGs WSCF103010, WSCF103016, WSCF103039, WSCF103070, WSCF103084 and WSCF103268 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 chromium (VI) sample results as estimates were due low matrix spike recoveries. 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.

TPA-CN-264, TPA Change Notice Form for DOE/RL-96-22, Rev. 5

DD-48021, *Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas*

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			
SDGs: WSCF103010, WSCF103016, WSCF103039, WSCF103070, WSCF103084, WSCF103268	Reviewer: AQA	Project: 183 KW	Page 1 of 1
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
Cr(VI)	UJ	B29D64, B29D38, B29D42, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D40, B29D41, B29D56, B29D57, B29D59	Low MS recoveries
Cr(VI)	J	B29D39, B29D43, B29D37, B29D44, B29D45, B29D46, B29D58, B29D47, B29D48, B29D49 B29D50, B29D51	Low MS recoveries

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103010

Sample # 103010001
SAF# F11-024
Sample ID B29D64

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.099		ug/g	1	0.099	0.50	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5930		mg/kg	1	5.3	110	11/19/10
Manganese	7439-96-5	LA-505-412		433		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		13.0		mg/kg	1	0.21	2.1	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		61.6		mg/kg	1	0.21	2.1	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.394		mg/kg	1	0.11	0.53	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		5.53		mg/kg	1	0.53	5.3	11/19/10
Cobalt	7440-48-4	LA-505-412		13.1		mg/kg	1	0.11	0.53	11/19/10
Copper	7440-50-8	LA-505-412		20.3		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		98.2		mg/kg	1	0.21	2.1	11/19/10
Zinc	7440-66-6	LA-505-412		65.1		mg/kg	1	0.85	5.3	11/19/10
Lead	7439-92-1	LA-505-412		3.25		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010002
SAF# F11-024
Sample ID B29D38

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.55	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6170		mg/kg	1	5.5	110	11/19/10
Manganese	7439-96-5	LA-505-412		402		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		14.5		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.422		mg/kg	1	0.33	3.3	11/19/10
Barium	7440-39-3	LA-505-412		58.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.270		mg/kg	1	0.11	0.55	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		5.72		mg/kg	1	0.55	5.5	11/19/10
Cobalt	7440-48-4	LA-505-412		11.7		mg/kg	1	0.11	0.55	11/19/10
Copper	7440-50-8	LA-505-412		17.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		85.0		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		55.0		mg/kg	1	0.88	5.5	11/19/10
Lead	7439-92-1	LA-505-412		3.45		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010003
SAF# F11-024
Sample ID B29D39

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.148		ug/g	1	0.10	0.52	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7280		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		402		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		12.8		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.846		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		64.4		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.250		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		6.27		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		12.4		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		19.5		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		96.3		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		78.5		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		4.89		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010004
SAF# F11-024
Sample ID B29D42

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.54	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6470		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		410		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		12.9		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.639		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		61.3		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.298		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		6.66		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		12.7		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		19.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		92.6		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		60.6		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		7.85		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010005
SAF# F11-024
Sample ID B29D43

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.161		ug/g	1	0.10	0.52	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5820		mg/kg	1	5.3	110	11/19/10
Manganese	7439-96-5	LA-505-412		606		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		15.2		mg/kg	1	0.21	2.1	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	2.05		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		76.8		mg/kg	1	0.21	2.1	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.287		mg/kg	1	0.11	0.53	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		7.02		mg/kg	1	0.53	5.3	11/19/10
Cobalt	7440-48-4	LA-505-412		12.6		mg/kg	1	0.11	0.53	11/19/10
Copper	7440-50-8	LA-505-412		23.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		92.2		mg/kg	1	0.21	2.1	11/19/10
Zinc	7440-66-6	LA-505-412		71.8		mg/kg	1	0.85	5.3	11/19/10
Lead	7439-92-1	LA-505-412		4.63		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010006
SAF# F11-024
Sample ID B29D52

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6680		mg/kg	1	5.5	110	11/19/10
Manganese	7439-96-5	LA-505-412		385		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		14.0		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	1.19		mg/kg	1	0.33	3.3	11/19/10
Barium	7440-39-3	LA-505-412		64.1		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.338		mg/kg	1	0.11	0.55	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		6.04		mg/kg	1	0.55	5.5	11/19/10
Cobalt	7440-48-4	LA-505-412		11.5		mg/kg	1	0.11	0.55	11/19/10
Copper	7440-50-8	LA-505-412		17.6		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		83.1		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		59.1		mg/kg	1	0.87	5.5	11/19/10
Lead	7439-92-1	LA-505-412		3.80		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010007
SAF# F11-024
Sample ID B29D53

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.54	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7800		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		437		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		14.8		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.678		mg/kg	1	0.33	3.3	11/19/10
Barium	7440-39-3	LA-505-412		65.0		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412		0.554		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		10.8		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		12.5		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		21.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		88.9		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		67.1		mg/kg	1	0.87	5.4	11/19/10
Lead	7439-92-1	LA-505-412		12.0		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010008
SAF# F11-024
Sample ID B29D54

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.54	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6860		mg/kg	1	5.5	110	11/19/10
Manganese	7439-96-5	LA-505-412		434		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		13.8		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.601		mg/kg	1	0.33	3.3	11/19/10
Barium	7440-39-3	LA-505-412		58.7		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.299		mg/kg	1	0.11	0.55	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		7.85		mg/kg	1	0.55	5.5	11/19/10
Cobalt	7440-48-4	LA-505-412		12.4		mg/kg	1	0.11	0.55	11/19/10
Copper	7440-50-8	LA-505-412		19.0		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		93.2		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		61.2		mg/kg	1	0.87	5.5	11/19/10
Lead	7439-92-1	LA-505-412		3.62		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010009
SAF# F11-024
Sample ID B29D55

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromiumUJ	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.51	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6860		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		384		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		11.2		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	1.40		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		60.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.386		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		6.47		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		11.6		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		18.9		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		87.6		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		63.5		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		5.56		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103010

Sample # 103010010
SAF# F11-024
Sample ID B29D61

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/18/10**
Cr(VI)										
Hexavalent chromiumUJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	11/18/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6140		mg/kg	1	5.3	110	11/19/10
Manganese	7439-96-5	LA-505-412		438		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		11.4		mg/kg	1	0.21	2.1	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		61.4		mg/kg	1	0.21	2.1	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.286		mg/kg	1	0.11	0.53	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		5.59		mg/kg	1	0.53	5.3	11/19/10
Cobalt	7440-48-4	LA-505-412		13.5		mg/kg	1	0.11	0.53	11/19/10
Copper	7440-50-8	LA-505-412		19.0		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		109		mg/kg	1	0.21	2.1	11/19/10
Zinc	7440-66-6	LA-505-412		64.2		mg/kg	1	0.85	5.3	11/19/10
Lead	7439-92-1	LA-505-412		2.86		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103016

Sample # 103016001
SAF# F11-026
Sample ID B29DM9

Matrix WATER
Sampled 11/16/10
Received 11/16/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI)										**11/16/10**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/16/10

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 # WSCF103039

Sample # 103039001
SAF# F11-024
Sample ID B29D60

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.55	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5750		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		360		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412	C	8.59		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.399		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		51.8		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.278		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		5.49		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		10.8		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		16.6		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		85.2		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		55.6		mg/kg	1	0.87	5.4	11/19/10
Lead	7439-92-1	LA-505-412		3.57		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039002
SAF# F11-024
Sample ID B29D62

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6020		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		389		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		9.22		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		57.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.270		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412	B	5.22		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		11.6		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		18.5		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		80.4		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		56.6		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		2.94		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039003
SAF# F11-024
Sample ID B29D63

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7380		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		550		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		11.3		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	1.75		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		77.7		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.245		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	B	0.124		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		7.08		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		13.8		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		22.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		113		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		76.2		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		4.91		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039004
SAF# F11-024
Sample ID B29D65

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6120		mg/kg	1	5.3	110	11/19/10
Manganese	7439-96-5	LA-505-412		408		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		10.6		mg/kg	1	0.21	2.1	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		59.5		mg/kg	1	0.21	2.1	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.417		mg/kg	1	0.11	0.53	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		5.52		mg/kg	1	0.53	5.3	11/19/10
Cobalt	7440-48-4	LA-505-412		12.5		mg/kg	1	0.11	0.53	11/19/10
Copper	7440-50-8	LA-505-412		19.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		92.5		mg/kg	1	0.21	2.1	11/19/10
Zinc	7440-66-6	LA-505-412		61.9		mg/kg	1	0.85	5.3	11/19/10
Lead	7439-92-1	LA-505-412		3.78		mg/kg	1	0.11	1.1	11/19/10

MDL = Minimum Detection
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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 # WSCF103039

Sample # 103039005
SAF# F11-024
Sample ID B29D66

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.52	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5610		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		354		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		8.94		mg/kg	1	0.21	2.1	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.906		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		54.0		mg/kg	1	0.21	2.1	11/19/10
Beryllium	7440-41-7	LA-505-412	U	<0.11		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		6.82		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		11.0		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		16.8		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		87.8		mg/kg	1	0.21	2.1	11/19/10
Zinc	7440-66-6	LA-505-412		58.1		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		4.00		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039006
SAF# F11-024
Sample ID B29D67

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.54	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6560		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		385		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		12.7		mg/kg	1	0.21	2.1	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	1.19		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		58.7		mg/kg	1	0.21	2.1	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.208		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		5.96		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		12.4		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		21.0		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		87.5		mg/kg	1	0.21	2.1	11/19/10
Zinc	7440-66-6	LA-505-412		61.2		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		3.40		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039007
SAF# F11-024
Sample ID B29D68

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6590		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		399		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		11.4		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	0.664		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		66.1		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.251		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		7.41		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		12.1		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		20.1		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		80.0		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		59.5		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		13.2		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039008
SAF# F11-024
Sample ID B29D69

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.54	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6060		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		341		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		9.33		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	1.19		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		58.9		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.182		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		6.63		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		11.6		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		18.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		77.9		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		56.3		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		4.01		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039009
SAF# F11-024
Sample ID B29D70

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.54	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		6050		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		319		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		8.42		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	1.13		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		55.2		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.155		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412		6.47		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		9.71		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		18.2		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		71.9		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		57.7		mg/kg	1	0.87	5.4	11/19/10
Lead	7439-92-1	LA-505-412		5.67		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039010
SAF# F11-024
Sample ID B29D71

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.54	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5980		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		360		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		8.61		mg/kg	1	0.22	2.2	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	B	1.03		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		65.0		mg/kg	1	0.22	2.2	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.245		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412	B	4.90		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		11.0		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		17.6		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		74.0		mg/kg	1	0.22	2.2	11/19/10
Zinc	7440-66-6	LA-505-412		55.0		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		3.60		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103039

Sample # 103039011
SAF# F11-024
Sample ID B29D72

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/23/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	11/23/10
ICPMS Prep										**11/18/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5670		mg/kg	1	5.4	110	11/19/10
Manganese	7439-96-5	LA-505-412		368		mg/kg	1	0.11	1.1	11/19/10
Nickel	7440-02-0	LA-505-412		10.2		mg/kg	1	0.21	2.1	11/19/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Antimony	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/19/10
Barium	7440-39-3	LA-505-412		53.2		mg/kg	1	0.21	2.1	11/19/10
Beryllium	7440-41-7	LA-505-412	B	0.189		mg/kg	1	0.11	0.54	11/19/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/19/10
Chromium	7440-47-3	LA-505-412	B	5.06		mg/kg	1	0.54	5.4	11/19/10
Cobalt	7440-48-4	LA-505-412		11.3		mg/kg	1	0.11	0.54	11/19/10
Copper	7440-50-8	LA-505-412		18.7		mg/kg	1	0.11	1.1	11/19/10
Vanadium	7440-62-2	LA-505-412		76.0		mg/kg	1	0.21	2.1	11/19/10
Zinc	7440-66-6	LA-505-412		51.2		mg/kg	1	0.86	5.4	11/19/10
Lead	7439-92-1	LA-505-412		2.54		mg/kg	1	0.11	1.1	11/19/10

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 # WSCF103070

Sample # 103070001
SAF# F11-024
Sample ID B29D36

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.55	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5790		mg/kg	1	5.5	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	359		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		6.04		mg/kg	1	0.22	2.2	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	U	<0.33		mg/kg	1	0.33	3.3	11/22/10
Barium	7440-39-3	LA-505-412		59.9		mg/kg	1	0.22	2.2	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.357		mg/kg	1	0.11	0.55	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		6.44		mg/kg	1	0.55	5.5	11/22/10
Cobalt	7440-48-4	LA-505-412		11.5		mg/kg	1	0.11	0.55	11/22/10
Copper	7440-50-8	LA-505-412		17.4		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		65.0		mg/kg	1	0.22	2.2	11/22/10
Zinc	7440-66-6	LA-505-412		49.1		mg/kg	1	0.88	5.5	11/22/10
Lead	7439-92-1	LA-505-412		3.42		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070002
SAF# F11-024
Sample ID B29D37

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.218		ug/g	1	0.11	0.55	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		8240		mg/kg	1	5.5	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	632		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		8.66		mg/kg	1	0.22	2.2	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	B	1.35		mg/kg	1	0.33	3.3	11/22/10
Barium	7440-39-3	LA-505-412		108		mg/kg	1	0.22	2.2	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.359		mg/kg	1	0.11	0.55	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		7.43		mg/kg	1	0.55	5.5	11/22/10
Cobalt	7440-48-4	LA-505-412		15.1		mg/kg	1	0.11	0.55	11/22/10
Copper	7440-50-8	LA-505-412		24.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		90.7		mg/kg	1	0.22	2.2	11/22/10
Zinc	7440-66-6	LA-505-412		73.8		mg/kg	1	0.87	5.5	11/22/10
Lead	7439-92-1	LA-505-412		6.85		mg/kg	1	0.11	1.1	11/22/10

MDL = Minimum Detection
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TP Err = Total Propagated
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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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070003
SAF# F11-024
Sample ID B29D40

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5600		mg/kg	1	5.4	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	342		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		4.90		mg/kg	1	0.21	2.1	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	B	0.369		mg/kg	1	0.32	3.2	11/22/10
Barium	7440-39-3	LA-505-412		57.6		mg/kg	1	0.21	2.1	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.332		mg/kg	1	0.11	0.54	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412	B	4.43		mg/kg	1	0.54	5.4	11/22/10
Cobalt	7440-48-4	LA-505-412		10.7		mg/kg	1	0.11	0.54	11/22/10
Copper	7440-50-8	LA-505-412		18.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		66.2		mg/kg	1	0.21	2.1	11/22/10
Zinc	7440-66-6	LA-505-412		49.6		mg/kg	1	0.86	5.4	11/22/10
Lead	7439-92-1	LA-505-412		3.95		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070004
SAF# F11-024
Sample ID B29D41

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		4640		mg/kg	1	5.3	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	429		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		5.85		mg/kg	1	0.21	2.1	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/22/10
Barium	7440-39-3	LA-505-412		66.1		mg/kg	1	0.21	2.1	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.323		mg/kg	1	0.11	0.53	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412	B	4.24		mg/kg	1	0.53	5.3	11/22/10
Cobalt	7440-48-4	LA-505-412		10.2		mg/kg	1	0.11	0.53	11/22/10
Copper	7440-50-8	LA-505-412		16.7		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		73.2		mg/kg	1	0.21	2.1	11/22/10
Zinc	7440-66-6	LA-505-412		48.3		mg/kg	1	0.85	5.3	11/22/10
Lead	7439-92-1	LA-505-412		2.41		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070005
SAF# F11-024
Sample ID B29D44

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.422		ug/g	1	0.11	0.55	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7940		mg/kg	1	5.7	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	295		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		5.70		mg/kg	1	0.23	2.3	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412		5.10		mg/kg	1	0.34	3.4	11/22/10
Barium	7440-39-3	LA-505-412		81.7		mg/kg	1	0.23	2.3	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.287		mg/kg	1	0.11	0.57	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.165		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		7.86		mg/kg	1	0.57	5.7	11/22/10
Cobalt	7440-48-4	LA-505-412		8.18		mg/kg	1	0.11	0.57	11/22/10
Copper	7440-50-8	LA-505-412		22.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		55.5		mg/kg	1	0.23	2.3	11/22/10
Zinc	7440-66-6	LA-505-412		212		mg/kg	1	0.90	5.7	11/22/10
Lead	7439-92-1	LA-505-412		7.06		mg/kg	1	0.11	1.1	11/22/10

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)

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070006
SAF# F11-024
Sample ID B29D45

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.191		ug/g	1	0.11	0.55	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		8510		mg/kg	1	5.5	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	356		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		8.11		mg/kg	1	0.22	2.2	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	B	2.99		mg/kg	1	0.33	3.3	11/22/10
Barium	7440-39-3	LA-505-412		97.2		mg/kg	1	0.22	2.2	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.350		mg/kg	1	0.11	0.55	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.167		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		8.46		mg/kg	1	0.55	5.5	11/22/10
Cobalt	7440-48-4	LA-505-412		10.0		mg/kg	1	0.11	0.55	11/22/10
Copper	7440-50-8	LA-505-412		23.9		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		65.8		mg/kg	1	0.22	2.2	11/22/10
Zinc	7440-66-6	LA-505-412		78.2		mg/kg	1	0.89	5.5	11/22/10
Lead	7439-92-1	LA-505-412		7.24		mg/kg	1	0.11	1.1	11/22/10

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)

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070007
SAF# F11-024
Sample ID B29D46

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.445		ug/g	1	0.11	0.54	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		8100		mg/kg	1	5.6	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	337		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		11.1		mg/kg	1	0.23	2.3	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412		4.46		mg/kg	1	0.34	3.4	11/22/10
Barium	7440-39-3	LA-505-412		77.9		mg/kg	1	0.23	2.3	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.207		mg/kg	1	0.11	0.56	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.128		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		9.09		mg/kg	1	0.56	5.6	11/22/10
Cobalt	7440-48-4	LA-505-412		8.74		mg/kg	1	0.11	0.56	11/22/10
Copper	7440-50-8	LA-505-412		21.4		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		55.4		mg/kg	1	0.23	2.3	11/22/10
Zinc	7440-66-6	LA-505-412		72.2		mg/kg	1	0.90	5.6	11/22/10
Lead	7439-92-1	LA-505-412		7.51		mg/kg	1	0.11	1.1	11/22/10

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)

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070008
SAF# F11-024
Sample ID B29D56

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.52	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		4880		mg/kg	1	5.3	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	300		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		5.59		mg/kg	1	0.21	2.1	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	U	<0.32		mg/kg	1	0.32	3.2	11/22/10
Barium	7440-39-3	LA-505-412		49.3		mg/kg	1	0.21	2.1	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.170		mg/kg	1	0.11	0.53	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412	B	4.30		mg/kg	1	0.53	5.3	11/22/10
Cobalt	7440-48-4	LA-505-412		9.54		mg/kg	1	0.11	0.53	11/22/10
Copper	7440-50-8	LA-505-412		15.5		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		63.6		mg/kg	1	0.21	2.1	11/22/10
Zinc	7440-66-6	LA-505-412		45.0		mg/kg	1	0.85	5.3	11/22/10
Lead	7439-92-1	LA-505-412		2.99		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070009
SAF# F11-024
Sample ID B29D57

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.10		ug/g	1	0.10	0.52	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		4200		mg/kg	1	5.3	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	267		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		5.06		mg/kg	1	0.21	2.1	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	B	0.702		mg/kg	1	0.32	3.2	11/22/10
Barium	7440-39-3	LA-505-412		41.1		mg/kg	1	0.21	2.1	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.319		mg/kg	1	0.11	0.53	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412	B	3.91		mg/kg	1	0.53	5.3	11/22/10
Cobalt	7440-48-4	LA-505-412		8.63		mg/kg	1	0.11	0.53	11/22/10
Copper	7440-50-8	LA-505-412		14.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		65.1		mg/kg	1	0.21	2.1	11/22/10
Zinc	7440-66-6	LA-505-412		45.7		mg/kg	1	0.85	5.3	11/22/10
Lead	7439-92-1	LA-505-412		2.80		mg/kg	1	0.11	1.1	11/22/10

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)

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070010
SAF# F11-024
Sample ID B29D58

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.232		ug/g	1	0.11	0.55	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7150		mg/kg	1	5.4	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	371		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		7.70		mg/kg	1	0.22	2.2	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	B	0.680		mg/kg	1	0.33	3.3	11/22/10
Barium	7440-39-3	LA-505-412		72.2		mg/kg	1	0.22	2.2	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.378		mg/kg	1	0.11	0.54	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.231		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		9.20		mg/kg	1	0.54	5.4	11/22/10
Cobalt	7440-48-4	LA-505-412		10.3		mg/kg	1	0.11	0.54	11/22/10
Copper	7440-50-8	LA-505-412		19.6		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		65.8		mg/kg	1	0.22	2.2	11/22/10
Zinc	7440-66-6	LA-505-412		82.3		mg/kg	1	0.87	5.4	11/22/10
Lead	7439-92-1	LA-505-412		18.5		mg/kg	1	0.11	1.1	11/22/10

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)

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

Sample # 103070011
SAF# F11-024
Sample ID B29D59

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium UJ	18540-29-9	LA-265-403	UN	<0.11		ug/g	1	0.11	0.53	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		5090		mg/kg	1	5.3	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	322		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412		6.84		mg/kg	1	0.21	2.1	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	B	0.376		mg/kg	1	0.32	3.2	11/22/10
Barium	7440-39-3	LA-505-412		47.3		mg/kg	1	0.21	2.1	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.175		mg/kg	1	0.11	0.53	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412	B	4.40		mg/kg	1	0.53	5.3	11/22/10
Cobalt	7440-48-4	LA-505-412		9.93		mg/kg	1	0.11	0.53	11/22/10
Copper	7440-50-8	LA-505-412		15.5		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		67.7		mg/kg	1	0.21	2.1	11/22/10
Zinc	7440-66-6	LA-505-412		69.4		mg/kg	1	0.85	5.3	11/22/10
Lead	7439-92-1	LA-505-412		3.36		mg/kg	1	0.11	1.1	11/22/10

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

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF103084

Sample # 103084001
SAF# F11-024
Sample ID B29D47

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.433		ug/g	1	0.11	0.56	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		8260		mg/kg	1	5.6	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	314		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412	C	6.78		mg/kg	1	0.23	2.3	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412		5.39		mg/kg	1	0.34	3.4	11/22/10
Barium	7440-39-3	LA-505-412		97.4		mg/kg	1	0.23	2.3	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.391		mg/kg	1	0.11	0.56	11/22/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		9.69		mg/kg	1	0.56	5.6	11/22/10
Cobalt	7440-48-4	LA-505-412		7.73		mg/kg	1	0.11	0.56	11/22/10
Copper	7440-50-8	LA-505-412		22.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		57.9		mg/kg	1	0.23	2.3	11/22/10
Zinc	7440-66-6	LA-505-412		72.5		mg/kg	1	0.90	5.6	11/22/10
Lead	7439-92-1	LA-505-412		5.75		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084002
SAF# F11-024
Sample ID B29D48

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.339		ug/g	1	0.11	0.56	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7920		mg/kg	1	5.6	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	374		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412	C	9.15		mg/kg	1	0.22	2.2	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412		5.25		mg/kg	1	0.33	3.3	11/22/10
Barium	7440-39-3	LA-505-412		83.5		mg/kg	1	0.22	2.2	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.383		mg/kg	1	0.11	0.56	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.206		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		8.84		mg/kg	1	0.56	5.6	11/22/10
Cobalt	7440-48-4	LA-505-412		9.08		mg/kg	1	0.11	0.56	11/22/10
Copper	7440-50-8	LA-505-412		27.0		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		57.8		mg/kg	1	0.22	2.2	11/22/10
Zinc	7440-66-6	LA-505-412		81.3		mg/kg	1	0.89	5.6	11/22/10
Lead	7439-92-1	LA-505-412		5.53		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084003
SAF# F11-024
Sample ID B29D49

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.162		ug/g	1	0.11	0.55	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7010		mg/kg	1	5.5	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	278		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412	C	5.62		mg/kg	1	0.22	2.2	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412	B	2.75		mg/kg	1	0.33	3.3	11/22/10
Barium	7440-39-3	LA-505-412		69.8		mg/kg	1	0.22	2.2	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.249		mg/kg	1	0.11	0.55	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.196		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		7.30		mg/kg	1	0.55	5.5	11/22/10
Cobalt	7440-48-4	LA-505-412		5.95		mg/kg	1	0.11	0.55	11/22/10
Copper	7440-50-8	LA-505-412		15.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		42.5		mg/kg	1	0.22	2.2	11/22/10
Zinc	7440-66-6	LA-505-412		63.6		mg/kg	1	0.88	5.5	11/22/10
Lead	7439-92-1	LA-505-412		9.28		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084004
SAF# F11-024
Sample ID B29D50

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.382		ug/g	1	0.11	0.56	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		7920		mg/kg	1	5.6	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	312		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412	C	8.21		mg/kg	1	0.22	2.2	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412		6.73		mg/kg	1	0.33	3.3	11/22/10
Barium	7440-39-3	LA-505-412		83.0		mg/kg	1	0.22	2.2	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.383		mg/kg	1	0.11	0.56	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.175		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		8.81		mg/kg	1	0.56	5.6	11/22/10
Cobalt	7440-48-4	LA-505-412		9.12		mg/kg	1	0.11	0.56	11/22/10
Copper	7440-50-8	LA-505-412		22.2		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		59.1		mg/kg	1	0.22	2.2	11/22/10
Zinc	7440-66-6	LA-505-412		76.8		mg/kg	1	0.89	5.6	11/22/10
Lead	7439-92-1	LA-505-412		6.28		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103084

Sample # 103084005
SAF# F11-024
Sample ID B29D51

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**11/30/10**
Cr(VI)										
Hexavalent chromium J	18540-29-9	LA-265-403	BN	0.431		ug/g	1	0.11	0.56	12/01/10
ICPMS Prep										**11/21/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		10200		mg/kg	1	5.6	110	11/22/10
Manganese	7439-96-5	LA-505-412	N	476		mg/kg	1	0.11	1.1	11/22/10
Nickel	7440-02-0	LA-505-412	C	9.00		mg/kg	1	0.23	2.3	11/22/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	11/22/10
Antimony	7440-36-0	LA-505-412		7.12		mg/kg	1	0.34	3.4	11/22/10
Barium	7440-39-3	LA-505-412		130		mg/kg	1	0.23	2.3	11/22/10
Beryllium	7440-41-7	LA-505-412	B	0.371		mg/kg	1	0.11	0.56	11/22/10
Cadmium	7440-43-9	LA-505-412	B	0.318		mg/kg	1	0.11	1.1	11/22/10
Chromium	7440-47-3	LA-505-412		10.5		mg/kg	1	0.56	5.6	11/22/10
Cobalt	7440-48-4	LA-505-412		15.2		mg/kg	1	0.11	0.56	11/22/10
Copper	7440-50-8	LA-505-412		26.8		mg/kg	1	0.11	1.1	11/22/10
Vanadium	7440-62-2	LA-505-412		73.7		mg/kg	1	0.23	2.3	11/22/10
Zinc	7440-66-6	LA-505-412		89.5		mg/kg	1	0.90	5.6	11/22/10
Lead	7439-92-1	LA-505-412		9.71		mg/kg	1	0.11	1.1	11/22/10

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 # WSCF103268

Sample # 103268001
SAF# F11-024
Sample ID B29T97

Matrix SOIL
Sampled 12/07/10
Received 12/07/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Cr(VI) Prep										**12/08/10**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.11		ug/g	1	0.11	0.53	12/08/10
ICPMS Prep										**12/07/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412		4720		mg/kg	1	5.4	110	12/08/10
Manganese	7439-96-5	LA-505-412		340		mg/kg	1	0.11	1.1	12/08/10
Nickel	7440-02-0	LA-505-412		7.45		mg/kg	1	0.22	2.2	12/08/10
Silver	7440-22-4	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	12/08/10
Antimony	7440-36-0	LA-505-412	B	0.714		mg/kg	1	0.32	3.2	12/08/10
Barium	7440-39-3	LA-505-412	N	49.7		mg/kg	1	0.22	2.2	12/08/10
Beryllium	7440-41-7	LA-505-412	B	0.245		mg/kg	1	0.11	0.54	12/08/10
Cadmium	7440-43-9	LA-505-412	U	<0.11		mg/kg	1	0.11	1.1	12/08/10
Chromium	7440-47-3	LA-505-412	B	5.32		mg/kg	1	0.54	5.4	12/08/10
Cobalt	7440-48-4	LA-505-412		10.3		mg/kg	1	0.11	0.54	12/08/10
Copper	7440-50-8	LA-505-412		16.2		mg/kg	1	0.11	1.1	12/08/10
Vanadium	7440-62-2	LA-505-412		83.3		mg/kg	1	0.22	2.2	12/08/10
Zinc	7440-66-6	LA-505-412		53.0		mg/kg	1	0.86	5.4	12/08/10
Lead	7439-92-1	LA-505-412		5.31		mg/kg	1	0.11	1.1	12/08/10

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
WSCF103010

Introduction

Ten (10) S&GRP samples were received at the WSCF Laboratory on November 16, 2010. The sample was 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. Also attached is IRF 10-273 dealing with additional elements requested in the ICP/MS 200.8 analysis. 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

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):

- Batch QC 170333 analyzed on sample# B29D53 (103010007)

- Matrix Spike recovery is 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):

- Batch QC 170023 analyzed on sample# B28301 (102920003)
  - Selenium was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.

All other applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 169948 analyzed on sample# B29D64 (103010001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
  - Batch QC 169949 analyzed on sample# B29D61 (103010010)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
    - Cobalt-60 RPD and RPD limit not printed due to a LIMS problem where the original and Duplicate equal zero. No flags assigned.

All other applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF103010

- Gross Alpha / Gross Beta:
  - Batch QC 170097 analyzed on sample# B29D38 (103010002)
    - Gross Alpha - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103010

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103010

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

5

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-085 — PAGE 1 OF 1

COLLECTOR: T.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 29	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY:			
ICE CHEST NO.: NOT	FIELD LOGBOOK NO.: HNF-N-375-10	ACTUAL SAMPLE DEPTH: 3	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103010

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 200.8	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS GEA	SEE ITEM (3) IN SPECIAL INSTRUCTIONS AIL

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
829064	1	SOIL	11-16-10	1321	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: T.M. Hall	DATE/TIME: 11-16-10 1500	RECEIVED BY/STORED IN: M Nelson M. Nelson	DATE/TIME: 11-16-10 1500
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 WSCF Analytical is 402114ES20,for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 7)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-089 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	AIR QUALITY: ☐	DATA TURNAROUND: 3 Days / 12 Days	
SAMPLING LOCATION: KW Sed. Basin Sample 3	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-307-10	ACTUAL SAMPLE DEPTH: 3'	COA: 30196ZES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Se=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D38 2	SOIL	11/16/10	0925	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F.M. Hall	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:12:02 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-130	PAGE 1 OF 1
COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 4	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF N-55-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60mL	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Composite Hrs: 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D39	3	SOIL	11/16/10	0941	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F M Hill	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-142 — PAGE 1 OF 1

COLLECTOR	**COMPANY CONTACT** WIDRIG, DL	**TELEPHONE NO.** 376-2858	**PROJECT COORDINATOR** WIDRIG, DL
PRICE CODE C04	**DATA TURNAROUND** 3 Days / 12 Days		
SAMPLING LOCATION KW Sed. Basin Sample 7	**PROJECT DESIGNATION** 183 KW Verification Sampling and Analysis - Soil		**SAF NO.** F11-024
AIR QUALITY ☐			
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF N 5621-10	**ACTUAL SAMPLE DEPTH** 3'	**COA** 301962ES10
METHOD OF SHIPMENT GOVERNMENT VEHICLE			
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, Wi=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D42	4	SOIL	11/16/10	1612	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.M. Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(7) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

ChemWare

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-146 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 8	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-302-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D43	5	SOIL	11/16/10	1030	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11/16/10	Kevin Nelson	11/16/10 0500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6005-618 (REV 2)

Friday, November 19, 2010 7:12:02 PM
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ChemWare

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-033 — PAGE 1 OF 1

COLLECTOR: Fm Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 17	PROJECT DESIGNATION: 183 KW Ventilation Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-307-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301952ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DI=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B29D52 6	SOIL	11/16/10	1216	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Fm Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-818 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-037 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 18	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-527-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DI=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	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium (ppx - 2.9%)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29053	7 SOIL	11/16/10	1100	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-041 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 19	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-500-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquid, 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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (TAL)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D54	8	SOIL	11-16-10	1737	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11-16-10 1530	M. Nelson M. Nelson	11-16-10 1530

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-049 — PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 20	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: MKF-N-501-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	10 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium New - 1996	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D55	9	SOIL	11-16-10	1300	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
T.M. Hall	11-16-10 1500	M. Nelson	11-16-10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6063-618 (REV. 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-073 — PAGE 1 OF 1

COLLECTOR: FM Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 26	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-581-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SD=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (3196)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D61 10	SOIL	11-16-10	1341	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	11-16-10 500	M. Nelson	11-16-10 500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

Friday, November 19, 2010 7:12:02 PM
Page 12 of 12

Attachment 2
Narrative
WSCF103016

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on November 16, 2010. The sample was 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

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):

- Batch QC 169971 analyzed on sample# B28668 (103007002)

All QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF103016

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** — F11-026-003 — PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed Basin Sample 37	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - QC Sampling	SAF NO.: F11-026	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-509-10	ACTUAL SAMPLE DEPTH: NA	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103016

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	aG
NO. OF CONTAINER(S)	1
VOLUME	500ml
SAMPLE ANALYSIS	Chromium Hex - HWS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B29DM9	WATER	11/16/10	0835	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11/16/10 1500	M. Nelson M Nelson	11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

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

A-5003-618 (REV 4)

Tuesday, November 16, 2010 6:05:59 PM

Page 2 of 2

ChemWare

Attachment 2
Narrative
WSCF103039

Introduction

Eleven (11) S&GRP samples were received at the WSCF Laboratory on November 17, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170335 analyzed on sample# B29D60 (103039001)

- Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

- Batch QC 170344 analyzed on sample# B29D66 (103039005)
  - Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All other 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):

- Batch QC 170026 analyzed on sample# B28JR7 (102960001)
  - Manganese – Matrix Spike/Matrix Spike Duplicate Relative Percent Difference (RPD) was above established laboratory control limits. No flags issued.
  - Nickel and Selenium were detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.

All other applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170015 analyzed on sample# B29D60 (103039001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.

- The Ra-226 duplicate RPDs (relative percent difference) were above established laboratory control limits. No flags assigned.

- Batch QC 170016 analyzed on sample# B29D71 (103039010)
  - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
  - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
  - Ra-228 was detected in the blank. There were no affected sample results; therefore no flags were assigned.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170098 analyzed on sample# B29D62 (103039002)
    - Gross Beta - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103039

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103039

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

5

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-069 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 25	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-507-162	ACTUAL SAMPLE DEPTH: 3'	COA: 301952ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103039

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 200S	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS GEA	SEE ITEM (3) IN SPECIAL INSTRUCTIONS A/B

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D60	1 SOIL	NOV 17 2010	0903	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010		NOV 17 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-077 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 27	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: MM	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 3019626510
METHOD OF SHIPMENT: GOVERNMEN VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D62	2 SOIL	NOV 17 2010	0830	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500		NOV 17 2010 1503
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

1503* The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-5005-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-081 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 28	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-28	ACTUAL SAMPLE DEPTH: 3'	COA: 301962E510
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wine, 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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D63	3 SOIL	NOV 17 2010	0910	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1300		NOV 17 2010 1300

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-093 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY:	
SAMPLING LOCATION: KW Sed. Basin Sample 30	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soi	SAF NO.: F11-024	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-102	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	750ml	60ml	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D65	4 SOIL	NOV 17 2010	1331	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1600	Victor Sing	NOV 17 2010 1600

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

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Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — **F11-024-097** — **PAGE 1 OF 1**

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** WIDRIG, DL	**TELEPHONE NO.** 376-2858	**PROJECT COORDINATOR** WIDRIG, DL
PRICE CODE C04	**DATA TURNAROUND** 3 Days / 12 Days	**AIR QUALITY** ☐	
SAMPLING LOCATION KW Sed. Basin Sample 31	**PROJECT DESIGNATION** 183 KW Verification Sampling and Analysis - Soil	**SAF NO.** F11-024	
ICE CHEST NO. NA	**FIELD LOGBOOK NO.** HNF-N-507-16	**ACTUAL SAMPLE DEPTH** 3'	**COA** 301962ES10
METHOD OF SHIPMENT GOVERNMENT VEHICLE	**SHIPPED TO** Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A	**BILL OF LADING/AIR BILL NO.** N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SC=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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cyanide (Total) - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D66	5 SOIL	NOV 17 2010	0935	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	[illegible]	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-101 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 32	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex (7196)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D67	6 SOIL	NOV 17 2010	1011	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	Victor Bing	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-918 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-105 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 33	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 AIR QUALITY: ☐ DATA TURNAROUND: 3 Days / 12 Days METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cyanide - NW - 2195	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D68	SOIL	NOV 17 2010	1305	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500		NOV 17 2010 1500

SPECIAL INSTRUCTIONS

☐* The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-918 (REV 2)

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-109 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 34	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF -N-507-12	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 | AIR QUALITY: ☐ | DATA TURNAROUND: 3 Days / 12 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250 mL	60mL	300mL	250mL
SAMPLE ANALYSIS	SPECIFIED IN SPECIAL INSTRUCTIONS	Chromium Hex (TAL)	SPECIFIED IN SPECIAL INSTRUCTIONS	SPECIFIED IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D69	8	SOIL	NOV 17 2010	1237	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	Widrig	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114E520.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

4-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-113 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 35	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: INF -N 507-	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D70	9 SOIL	~~NOV 17 2010~~ NOV 17 2010	1040	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010		NOV 17 2010 1503
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A 6003-618 (REV 4)

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-117

PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 376-2858

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: C04

DATA TURNAROUND: 3 Days / 12 Days

SAMPLING LOCATION: KW Sed. Basin Sample 36

PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil

SAF NO.: F11-024

AIR QUALITY: ☐

ICE CHEST NO.: N/A

FIELD LOGBOOK NO.: HNF-N-507-18

ACTUAL SAMPLE DEPTH: 3'

COA: 301962ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D71	10	SOIL	NOV 17 2010	0911	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	V Hall	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM

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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-121

PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 38	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY:
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-16	ACTUAL SAMPLE DEPTH: 3	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7199	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D72	SOIL	NOV 17 2010	0530	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	V. Sims	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

Attachment 2
Narrative
WSCF103070

Introduction

Eleven (11) S&GRP samples were received at the WSCF Laboratory on November 18, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170488 analyzed on sample# B29D36 (103070001)

- Insoluble Matrix Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All other 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):

- Batch QC 170116 analyzed on sample# B27779 (103001001)
  - Manganese – The Matrix spike/matrix spike duplicate RPD (Relative Percent Difference) was also above the established laboratory control limit. No flags issued.
  - Manganese – Matrix Spike Duplicate recovery was outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Aluminum – 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.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170073 analyzed on sample# B29D36 (103070001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
    -
  - Batch QC 170075 analyzed on sample# B29D58 (103070010)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is

not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170074 analyzed on sample# B29D37 (103070002)
- Gross Alpha and Gross Beta - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103070

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103070

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-001 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 1	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐	ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N 507-16	ACTUAL SAMPLE DEPTH: 3'
COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DI=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: 103070

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D36	SOIL	NOV 18 2010	1015	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010 1430		NOV 18 2010 1450

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

OK

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-045 | PAGE 1 OF 1

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	KW Sed. Basin Sample 2
ICE CHEST NO.	
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	WIDRIG, DL
TELEPHONE NO.	376-2858
PROJECT COORDINATOR	WIDRIG, DL
PRICE CODE	C04
DATA TURNAROUND	3 Days / 12 Days
PROJECT DESIGNATION	183 KW Verification Sampling and Analysis - Soil
SAF NO.	F11-024
AIR QUALITY	
FIELD LOGBOOK NO.	~~HNF-N-607-~~ 16
ACTUAL SAMPLE DEPTH	3'
COA	301962E510
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
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, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - /196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D37 002	SOIL	NOV 18 2010	1643	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1420 NOV 18 2010		1430 NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-134 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	SAMPLING LOCATION: KW Sed. Basin Sample 5
PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10
ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization
OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D40 603	SOIL	NOV 18 2010	1269	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010 1430		NOV 18 2010 1430

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-138 — PAGE 1 OF 1

COLLECTOR: FM Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 6	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-607-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D41	CC-1	SOIL	NOV 18 2010	1231	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	NOV 18 2010 1432	[signature] 1430	NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Thursday, November 18, 2010 7:57:20 PM
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ChemWare

DRAFT

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-150

PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 9	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.	FIELD LOGBOOK NO.: ~~HNF-N-607-~~ 162	ACTUAL SAMPLE DEPTH: Surface	COA: 301962CS10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solics, 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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196:	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D44	005	SOIL	NOV 18 2010	1301	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1432		NOV 18 2010 1432

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-005 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: L	
SAMPLING LOCATION: KW Sed. Basin Sample 10	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.	FIELD LOGBOOK NO.: ~~HNF-N-501~~ 42	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None	
HOLDING TIME	6 Months	30 Days	6 Months	6 Months	
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P	
NO. OF CONTAINER(S)	1	1	1	1	
VOLUME	250mL	60mL	500mL	250mL	
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	
SAMPLE NO. B29D45 C06	MATRIX* SOIL	SAMPLE DATE NOV 18 2010	SAMPLE TIME 1314	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1330		NOV 18 2010 1330

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-009 — PAGE 1 OF 1

COLLECTOR: PM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 11	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY:			
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-42	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D46	007	SOIL	NOV 18 2010	1751	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PM Hall, CHPRC	NOV 18 2010		NOV 19 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-053

PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 376-2858

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: C04

DATA TURNAROUND: 3 Days / 12 Days

SAMPLING LOCATION: KW Sed. Basin Sample 21

PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil

SAF NO.: F11-024

AIR QUALITY: ☐

ICE CHEST NO.: NA

FIELD LOGBOOK NO.: HNF-N-507-10

ACTUAL SAMPLE DEPTH: 3'

COA: 301962ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION		Cool~4C	Cool~4C	None	None
HOLDING TIME		6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER		G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)		1	1	1	1
VOLUME		250mL	60mL	500mL	250mL
SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B29D56 008	SOIL	NOV 18 2010	0935	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1130		NOV 18 2010 1130

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-057 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 22	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: NF-N-507-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D57	009	SOIL	NOV 18 2010	0905	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1436		NOV 18 2010 1436

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory. ☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-061 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 23	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D58 010	SOIL	NOV 18 2010	0809	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010		NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6001-513 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | **F11-024-065** | **PAGE 1 OF 1**

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** WIDRIG, DL	**TELEPHONE NO.** 376-2658	**PROJECT COORDINATOR** WIDRIG, DL
SAMPLING LOCATION KW Sed. Basin Sample 24	**PROJECT DESIGNATION** 183 KW Verification Sampling and Analysis - Soi		**SAF NO.** F11-024
ICE CHEST NO. NA	**FIELD LOGBOOK NO.** HNF-N-507-10	**ACTUAL SAMPLE DEPTH** 3'	**COA** 301962ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C04 | **AIR QUALITY** ☐ | **DATA TURNAROUND** 3 Days / 12 Days | **METHOD OF SHIPMENT** GOVERNMENT VEHICLE

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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D59	011	SOIL	NOV 18 2010	0837	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1430		NOV 18 2010 1430

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Attachment 2
Narrative
WSCF103084

Introduction

Five (5) S&GRP samples were received at the WSCF Laboratory on November 19, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170488 analyzed on sample# B29D36 (103070001)

- A Matrix Spike recovery (IMS) was outside the established laboratory limits. Affected sample results in this batch were "N" flagged.
- Duplicate Relative Percent Difference (RPD) does not apply to results near the minimum detectable level. No flags issued on sample results; quality control report was "X" flagged for RPD failure.
- All other 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):

- Batch QC 170116 analyzed on sample# B27779 (103010001)
  - Manganese – Duplicate Relative Percent Difference (RPD) did not meet the laboratory's acceptance criteria. No flags issued on sample results; quality control report was "X" flagged for RPD failure.
  - Manganese – Matrix Spike Duplicate recovery was outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Nickel was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.
  - Aluminum – 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.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170153 analyzed on sample# B29D48 (103084002)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - All other applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:

Narrative

Attachment 2
Narrative
WSCF103084

- Batch QC 170174 analyzed on sample# B29D49 (103084003)
- All 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.

Narrative

Attachment 2
Narrative
WSCF103084

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-013 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 12	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=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: 103084

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D47	001	SOIL	11-19-10	0735	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	M. Nelson M. Nelson	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory. ☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-017 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 13	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-074	AIR QUALITY:
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D48	002	SOIL	11-19-10	0159	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1155	M. Nelson	NOV 19 2010 1155

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GK1 applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-021 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY:	
SAMPLING LOCATION: KW Sed. Basin Sample 14	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-507- 22	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, Z=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	Cool--4C	Cool--4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196.	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D49	C03	SOIL	11-19-10	0826	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: NOV 19 2010 1055	RECEIVED BY/STORED IN: M Nelson	DATE/TIME: NOV 19 2010 1055
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 7)

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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-025 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 15	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-72	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D60 DC-1	SOIL	11-19-10	0746	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	M Nelson	NOV 19 2010 1055

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

DRAFT

A-6003-918 (REV 2)

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Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-029 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 16	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: NA HNF-N-507-10	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D51 005	SOIL	11-18-10	0912	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	N. Nelson Manda	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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ChemWare

Attachment 2
Narrative
WSCF103268

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on December 7, 2010. The sample was 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. Also is attached an Issue Resolution Form (IRF) pertaining to additional metals analysis and gross alpha/beta discrete analysis was not performed.

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

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):

- Batch QC 170875 analyzed on sample# B29T97 (103268001)

All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF103268

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

- Batch QC 170755 analyzed on sample# B273B5 (103106001)
  - An Issue Resolution Form (CHPRC Tracking Number: 10-280) was issued for sample B29T97 (103268001). Additional metals were added to analysis to be in-line with previous work order requests.
  - Barium and Strontium – Matrix Spike Relative Percent Difference (RPD) outside established laboratory limits. No flags issued.
  - Barium and Strontium – Matrix Spike and Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Aluminum and 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.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met (Refer to analytical note below). A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gamma Energy Analysis:
  - Batch QC 170844 analyzed on sample# B29T97 (103268001)
    - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170845 analyzed on sample# B29T97 (103268001)
    - An Issue Resolution Form (CHPRC Tracking Number: 10-280) was issued for sample B29T97 (103268001). In order to meet the TAT for this work order, discrete analysis of gross alpha/beta was not performed.
    - Gross Alpha and Gross Beta – Duplicate Relative Percent Difference (RPD) outside established laboratory limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

Narrative

Attachment 2
Narrative
WSCF103268

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.

Attachment 2
Narrative
WSCF103268

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-280

Date: 12/7/10 SAF No. F11-024

SDG: 103268 TEST: ICPMS_Metals_200.8, Hex Cr, GEA, Gross AB
DUE DATE: 11/29, 12/1

LOGIN No.: 103268001

Sample No.(s): B29T97

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE

WSCF received one sample on 12/7/10 for a 3 day/12 day TAT for 200.8, Hex Cr, GEA, and Gross AB. WSCF is unable to support this request.

The metals noted on the COC are not in-line with metals added on previous work orders.

Gross AB – is discrete analysis needed or will a gross alpha/beta be sufficient? Discrete analysis takes a minimum of 4 working days.

PROPOSED RESOLUTION

1. S&GRP shall note what specific metals are needed since previous work orders had metals added after analysis.
2. WSCF will report preliminary results for 200.8, Hex Cr, and GEA analyses by COB Thursday 12/9/10.
3. WSCF to analyze and report gross alpha/beta.

CHPRC/BHI/WMH/PNNL COMMENTS

Report the following additional 200.8 metals for all samples noted above.

Aluminum cobalt Manganese copper Nickel zinc
Silver molybdenum Antimony strontium Barium
thallium Beryllium tin arsenic

Please report the preliminary data package with 200.85, GEA, and Hex Cr data.

Perform the discrete alpha/beta analysis and report that data in the final data package.

Sara Champoux 12/7/2010
Signature and Date

4

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-157	PAGE 1 OF 1
COLLECTOR: F. Hall	COMPANY CONTACT: WIDRIG, DI	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DI	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 31 DUP	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: N/A	COA: 302652 ~~301562910~~ 12/6/10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterzation	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, D=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)

103268

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1		1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 200.8	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS Gamma	SEE ITEM (3) IN SPECIAL INSTRUCTIONS G P/K

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29T97	SOIL	12/7/10	0730	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F. Hall	DATE/TIME: 0910 12-7-10	RECEIVED BY/STORED IN: TA Frazier	DATE/TIME: 0910 12-7-10
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

OK

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

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Tuesday, December 07, 2010 7:25:12 PM
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Appendix 5

Data Validation Supporting Documentation

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: 183 KW			DATA PACKAGE: VSR11-031		
VALIDATOR: Eyda Hergenreder		LAB: WSCF		DATE: 03-11-2011	
			SDG: WSCF103010, WSCF103016, WSCF103039, WSCF103070, WSCF103084, WSCF103268		
ANALYSES PERFORMED					
Anions/IC	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 Water (1) and soil samples

SDG WSCF103010: B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61
SDG WSCF103016: B29DM9 (water)
SDG WSCF103039: B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72
SDG WSCF103070: B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59
SDG WSCF103084: B29D47, B29D48, B29D49, B29D50, B29D51
SDG WSCF103268: B29T97

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:

SDG WSCF103010: Cr+6 MS %R = 67%

SDG WSCF103039:
batch 170335: Cr+6 MS %R = 64%
batch 170344: Cr+6 MS %R = 56%

SDG WSCF103070: Cr+6 IMS=57%

SDG WSCF103084: Cr+6 IMS=57%

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:

The field split to sample B29D45 is sample B29RL4 that is located in VSR11-032, SDG W06073. Precision was not assessed since samples are in separate VSRs.

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 # WSCF103010

QC Batch 170333 **Test** Hexavalent chromium
Associated Samples 103010001, 103010002, 103010003, 103010004, 103010005, 103010006, 103010007, 103010008, 103010009, 103010010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42719**							
Hexavalent chromium	18540-29-9		<0.098	ug/g					U	11/18/10
LCS			**QC Sample #42720**							
Hexavalent chromium	18540-29-9		3.71	ug/g	96.3	80 - 120				11/18/10
DUP			**QC Sample #42721**							
			Original 103010007							
Hexavalent chromium	18540-29-9	<0.11	<0.11	ug/g			13.40	20	U	11/18/10
MS			**QC Sample #42722**							
			Original 103010007							
Hexavalent chromium	18540-29-9	<0.11	2.69	ug/g	66.9	75 - 125			N	11/18/10
PSTSPK			**QC Sample #42723**							
Hexavalent chromium	18540-29-9		0.0578	ug/g	108.7	85 - 115			U	11/18/10
IMS			**QC Sample #42724**							
			Original 103010007							
Hexavalent chromium	18540-29-9	<0.11	286	ug/g	87.6	75 - 125			D	11/18/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103016

QC Batch 169971
Associated Samples 103016001

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #42086**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/16/10
LCS			**QC Sample #42088**							
Hexavalent chromium	18540-29-9		0.0517	mg/L	103.4	90 - 110				11/16/10
DUP			**QC Sample #42089**							
			Original 103007002							
Hexavalent chromium	18540-29-9		0.0490	mg/L			0.60	20		11/16/10
MS			**QC Sample #42090**							
			Original 103007002							
Hexavalent chromium	18540-29-9		0.0411	mg/L	102.8	85 - 115				11/16/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103039

QC Batch 170335
Associated Samples 103039001, 103039002, 103039003, 103039004

Test Hexavalent chromium

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42729**								
Hexavalent chromium	18540-29-9		<0.099	ug/g						U	11/23/10
LCS			**QC Sample #42730**								
Hexavalent chromium	18540-29-9		3.73	ug/g	94.2	80 - 120					11/23/10
DUP			**QC Sample #42731**								
			Original 103039001								
Hexavalent chromium	18540-29-9	<0.11	<0.11	ug/g			67.30	20	*	UX	11/23/10
MS			**QC Sample #42732**								
			Original 103039001								
Hexavalent chromium	18540-29-9	<0.11	2.51	ug/g	64.3	75 - 125				N	11/23/10
PSTSPK			**QC Sample #42733**								
Hexavalent chromium	18540-29-9		0.0515	ug/g	96.8	85 - 115				U	11/23/10
IMS			**QC Sample #42734**								
			Original 103039001								
Hexavalent chromium	18540-29-9	<0.11	317	ug/g	92.9	75 - 125				D	11/23/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103039

QC Batch 170344 **Test** Hexavalent chromium
Associated Samples 103039005, 103039006, 103039007, 103039008, 103039009, 103039010, 103039011

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42745**								
Hexavalent chromium	18540-29-9		<0.10	ug/g						U	11/23/10
LCS			**QC Sample #42746**								
Hexavalent chromium	18540-29-9		3.77	ug/g	95.7	80 - 120					11/23/10
DUP			**QC Sample #42747**								
			Original 103039005								
Hexavalent chromium	18540-29-9	<0.10	<0.11	ug/g			43.90	20	*	UX	11/23/10
MS			**QC Sample #42748**								
			Original 103039005								
Hexavalent chromium	18540-29-9	<0.10	2.18	ug/g	55.7	75 - 125				N	11/23/10
PSTSPK			**QC Sample #42749**								
Hexavalent chromium	18540-29-9		0.0541	ug/g	101.7	85 - 115				U	11/23/10
IMS			**QC Sample #42750**								
			Original 103039005								
Hexavalent chromium	18540-29-9	<0.10	301	ug/g	89.7	75 - 125				D	11/23/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103070

QC Batch 170488 **Test** Hexavalent chromium
Associated Samples 103070001, 103070002, 103070003, 103070004, 103070005, 103070006, 103070007, 103070008, 103070009, 103070010, 103070011

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42952**								
Hexavalent chromium	18540-29-9		<0.099	ug/g						U	12/01/10
LCS			**QC Sample #42953**								
Hexavalent chromium	18540-29-9		3.70	ug/g	96.1	80 - 120					12/01/10
DUP			**QC Sample #42954**								
			Original 103070001								
Hexavalent chromium	18540-29-9	<0.11	<0.11	ug/g			93.80	20	*	UX	12/01/10
MS			**QC Sample #42955**								
			Original 103070001								
Hexavalent chromium	18540-29-9	<0.11	3.59	ug/g	91.2	75 - 125					12/01/10
PSTSPK			**QC Sample #42956**								
Hexavalent chromium	18540-29-9		0.0506	ug/g	95.1	85 - 115					12/01/10
IMS			**QC Sample #42957**								
			Original 103070001								
Hexavalent chromium	18540-29-9	<0.11	200	ug/g	56.8	75 - 125				DN	12/01/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103084

QC Batch 170488
Associated Samples 103084001, 103084002, 103084003, 103084004, 103084005

Test Hexavalent chromium

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42952**								
Hexavalent chromium	18540-29-9		<0.099	ug/g						U	12/01/10
LCS			**QC Sample #42953**								
Hexavalent chromium	18540-29-9		3.70	ug/g	96.1	80 - 120					12/01/10
DUP			**QC Sample #42954**								
			Original 103070001								
Hexavalent chromium	18540-29-9		<0.11	ug/g			93.80	20	*	UX	12/01/10
MS			**QC Sample #42955**								
			Original 103070001								
Hexavalent chromium	18540-29-9		3.59	ug/g	91.2	75 - 125					12/01/10
PSTSPK			**QC Sample #42956**								
Hexavalent chromium	18540-29-9		0.0506	ug/g	95.1	85 - 115				U	12/01/10
IMS			**QC Sample #42957**								
			Original 103070001								
Hexavalent chromium	18540-29-9		200	ug/g	56.8	75 - 125				DN	12/01/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF103268

QC Batch 170875
Associated Samples 103268001

Test Hexavalent chromium

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #43639**							
Hexavalent chromium	18540-29-9		<0.10	ug/g					U	12/08/10
LCS			**QC Sample #43640**							
Hexavalent chromium	18540-29-9		4.14	ug/g	104.4	80 - 120				12/08/10
DUP			**QC Sample #43641**							
			Original 103268001							
Hexavalent chromium	18540-29-9	<0.11	<0.11	ug/g			0.70	20	U	12/08/10
MS			**QC Sample #43642**							
			Original 103268001							
Hexavalent chromium	18540-29-9	<0.11	3.35	ug/g	83.7	75 - 125				12/08/10
PSTSPK			**QC Sample #43643**							
Hexavalent chromium	18540-29-9		0.0539	ug/g	101.3	85 - 115			U	12/08/10
IMS			**QC Sample #43644**							
			Original 103268001							
Hexavalent chromium	18540-29-9	<0.11	297	ug/g	96.1	75 - 125			D	12/08/10

Date: 11 March 2011
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: 183 KW
Subject: Radiochemical - Sample Data Groups (SDGs) WSCF103010, WSCF103013, WSCF103014, WSCF103039, WSCF103070, WSCF103084 and WSCF103268

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF103010, WSCF103013, WSCF103014, WSCF103039, WSCF103070, WSCF103084 and WSCF103268 prepared by WSCF. 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
B29D64	11/16/10	Soil	C	Gamma, Gross αβ
B29D38	11/16/10	Soil	C	Gamma, Gross αβ
B29D39	11/16/10	Soil	C	Gamma, Gross αβ
B29D42	11/16/10	Soil	C	Gamma, Gross αβ
B29D43	11/16/10	Soil	C	Gamma, Gross αβ
B25D52	11/16/10	Soil	C	Gamma, Gross αβ
B29D53	11/16/10	Soil	C	Gamma, Gross αβ
B29D54	11/16/10	Soil	C	Gamma, Gross αβ
B29D55	11/16/10	Soil	C	Gamma, Gross αβ
B29D61	11/16/10	Soil	C	Gamma, Gross αβ
B29D74	11/16/10	Water	C	Gamma, Gross αβ
B29DM8	11/16/10	Water	C	Note 1
B29D60	11/17/10	Soil	C	Gamma, Gross αβ
B29D62	11/17/10	Soil	C	Gamma, Gross αβ
B29D63	11/17/10	Soil	C	Gamma, Gross αβ
B29D65	11/17/10	Soil	C	Gamma, Gross αβ
B29D66	11/17/10	Soil	C	Gamma, Gross αβ
B29D67	11/17/10	Soil	C	Gamma, Gross αβ
B29D68	11/17/10	Soil	C	Gamma, Gross αβ
B29D69	11/17/10	Soil	C	Gamma, Gross αβ
B29D70	11/17/10	Soil	C	Gamma, Gross αβ
B29D71	11/17/10	Soil	C	Gamma, Gross αβ
B29D72	11/17/10	Soil	C	Gamma, Gross αβ
B29D36	11/18/10	Soil	C	Gamma, Gross αβ
B29D37	11/18/10	Soil	C	Gamma, Gross αβ
B29D40	11/18/10	Soil	C	Gamma, Gross αβ
B29D41	11/18/10	Soil	C	Gamma, Gross αβ
B29D44	11/18/10	Soil	C	Gamma, Gross αβ
B29D45	11/18/10	Soil	C	Gamma, Gross αβ
B29D46	11/18/10	Soil	C	Gamma, Gross αβ

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B29D56	11/18/10	Soil	C	Gamma, Gross αβ
B29D57	11/18/10	Soil	C	Gamma, Gross αβ
B29D58	11/18/10	Soil	C	Gamma, Gross αβ
B29D59	11/18/10	Soil	C	Gamma, Gross αβ
B29D47	11/19/10	Soil	C	Gamma, Gross αβ
B29D48	11/19/10	Soil	C	Gamma, Gross αβ
B29D49	11/19/10	Soil	C	Gamma, Gross αβ
B29D50	11/19/10	Soil	C	Gamma, Gross αβ
B29D51	11/19/10	Soil	C	Gamma, Gross αβ
B29T97	12/07/10	Soil	C	Gamma, Gross αβ

1 – Am-241, Pu-238, Pu-239/240, U-234, U-235, U-238

Data validation was conducted in accordance with the CHPRC validation statement of work, the 100 Area Remedial Action Sampling and Analysis Plan, DOE/RL-96-22, Rev. 5/TPA-CN-264 (SAP), and the Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas, DD-48021. 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 maximum holding time for radiochemical analysis is 180 days. Sample preservation for water samples requires acid preservation with nitric acid to pH <2. There are no specific preservation requirements for soil samples.

- **Blanks**

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

Laboratory Blanks

All laboratory blank results were acceptable with the following exceptions.

For SDGs WSCF103010, WSCF103013, WSCF103039, WSCF103070 and WSCF103084, the Ra-226 laboratory blank results were > the minimum detectable concentrations (MDCs). All

associated sample results were further qualified unusable and flagged "R" due to severe analytical limitations. See the table in Appendix 2 for a listing of all affected sample results.

For SDG WSCF103014, the Am-241 laboratory blank result was > the MDC. The Am-241 result for sample B29DM8 was a detect > the MDC but <5X the blank result and should be qualified as estimate and flagged "J."

For SDG WSCF103039, batch 170016, the Ra-228 laboratory blank result was > the MDC. All associated Ra-228 sample results were detects >5X the blank value and should not be qualified.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

All equipment blank results were acceptable with the following exceptions. Ra-228 was detected in equipment blank B29D74 and Am-241 was detected in equipment blank B29DM8. The Am-241 result has been flagged “J” due to laboratory blank contamination.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results, laboratory control sample results, and chemical recovery factors. Chemical recovery factors are determined through use of a carrier or tracer and provide assessment of the chemical separation process that is affected by the laboratory procedure, sample matrix, and/or interference. Chemical recovery factors are used to correct sample concentration, uncertainty, and MDC results. According to the SAP, the laboratory control sample accuracy limits are 70% to 130%. The matrix spike 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 (MS) Samples

MS analyses are not required for the methods performed.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

Carrier/Tracer Recovery Factors

All carrier/tracer recovery factors were acceptable.

Other

The WSCF Ra-226 results for all samples were reported from Pb-214 and/or Bi-214 gamma lines. These radon daughters were not in secular equilibrium with Ra-226. In addition, the Pb-214 and Bi-214 results may have been greatly biased due to inaccurate detector background subtraction due to fluctuating concentrations of Rn-222. Per client request, all WSCF Ra-226 results should be qualified as unusable and flagged "UR" for non-detects and "R" for detects. See the table in Appendix 2 for a listing of the all affected sample results.

- **Precision**

Precision is evaluated by reviewing laboratory duplicate, field duplicate, 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 MDCs the precision limits are ones specified by the DV procedure.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable with the following exception.

For SDG WSCF103070, the gross beta sample and duplicate difference was >2X the sample MDC. All associated gross beta results that were detects should be qualified as estimates and flagged "J." See the table in Appendix 2 for a listing of all affected sample results.

Field Duplicate Samples

All field duplicate results were acceptable.

Field Split Samples

Sample B29D45 is a field split to sample B29RL3 assigned to SDGs W06065, W06073, H4436, H4443, H4444 and H4456 in VSR11-032.

- **Detection Limits**

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

All reported sample MDCs with associated non-detected sample results were below the CRDLs with the following exceptions.

The Eu-155 MDCs for samples B29D39, B29D42, B29D52, B29D54, B29D60, B29D62, B29D66, B29D67, B29D69, B29D71, B29D72 and B29T97 were > the CRDL.

The Eu-152 and Eu-154 MDCs for samples B29D67, B29D71 and B29T97 were > the CRDLs.

- **Completeness**

SDGs WSCF103010, WSCF103013, WSCF103014, WSCF103039, WSCF103070, WSCF103084 and WSCF103268 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 for Ra-226 was 0%. The completion percentage for the remaining radiochemical analytes was 100%.

MAJOR DEFICIENCIES

Major deficiencies leading to qualification of all Ra-226 results as unusable were due to severe analytical limitations for this particular analyte. See the table in Appendix 2 for a listing of all affected sample results.

MINOR DEFICIENCIES

Minor deficiencies leading to qualification of sample results as estimates were due to laboratory blank contamination for Am-241 and a laboratory duplicate infraction for gross beta. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-002, Rev. 0, Change 0, *Data Validation for Radiochemical Analyses*, August 2010.

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

TPA-CN-264, TPA Change Notice Form for DOE/RL-96-22, Rev. 5

DD-48021, *Sampling Instruction for the 183.2-KW Flocculation and Sedimentation Basins, 183.3-KW Sand Filter Basin, and 183.7-KW Pipe Tunnel Areas*

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 and 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 MDC. 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.

- **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

Radiochemical Data Qualification Summary			
SDGs: WSCF103010, WSCF103013, WSCF103014, WSCF103039, WSCF103070, WSCF103084, WSCF103268	Reviewer: AQA	Project: 183 KW	Page 1 of 1
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
Am-241	J	B29DM8	Laboratory blank contamination
Ra-226	**R**	B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D74, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51	Severe analytical limitations
Gross beta	J	B29D36, B29D37, B29D40, B29D41, B29D46, B29D56, B29D57, B29D58, B29D59	Poor duplicate precision

Comments: None

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010001
SAF# F11-024
Sample ID B29D64

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.58	.46	pCi/g	1	0.74		12/01/10
Gross Beta		12587-47-2	LA-508-415	U	0.27	.29	pCi/g	1	0.50		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-4.8E-3	.02	pCi/g	1	0.036		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-0.017	.018	pCi/g	1	0.030		11/18/10
Europium-152		14683-23-9	LA-508-481	U	3.7E-3	.065	pCi/g	1	0.10		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.042	.063	pCi/g	1	0.11		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.065	.072	pCi/g	1	0.14		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.47	.096	pCi/g	1	0.069		11/18/10
Radium-228		15262-20-1	LA-508-481		0.54	.2	pCi/g	1	0.10		11/18/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010002
SAF# F11-024
Sample ID B29D38

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		2.0	.66	pCi/g	1	0.82		12/01/10
Gross Beta		12587-47-2	LA-508-415		0.84	.35	pCi/g	1	0.53		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-4.5E-3	.024	pCi/g	1	0.046		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-0.0050	.022	pCi/g	1	0.043		11/18/10
Europium-152		14683-23-9	LA-508-481	U	-0.052	.093	pCi/g	1	0.12		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.027	.073	pCi/g	1	0.14		11/18/10
Europium-155		14391-16-3	LA-508-481	U	-9.9E-3	.074	pCi/g	1	0.13		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.40	.097	pCi/g	1	0.085		11/18/10
Radium-228		15262-20-1	LA-508-481		0.76	.18	pCi/g	1	0.14		11/18/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010003
SAF# F11-024
Sample ID B29D39

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.2	.57	pCi/g	1	0.81		12/01/10
Gross Beta		12587-47-2	LA-508-415		0.55	.32	pCi/g	1	0.50		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	0.011	.023	pCi/g	1	0.040		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-9.2E-3	.026	pCi/g	1	0.041		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.0030	.11	pCi/g	1	0.12		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-7.7E-4	.07	pCi/g	1	0.12		11/18/10
Europium-155		14391-16-3	LA-508-481	U	-0.045	.098	pCi/g	1	0.17		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.44	.09	pCi/g	1	0.074		11/18/10
Radium-228		15262-20-1	LA-508-481		0.67	.18	pCi/g	1	0.12		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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B - Analyte was detected in both the BLANK and SAMPLE
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010004
SAF# F11-024
Sample ID B29D42

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.64	.48	pCi/g	1	0.78		12/01/10
Gross Beta		12587-47-2	LA-508-415		0.65	.32	pCi/g	1	0.48		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-6.6E-3	.014	pCi/g	1	0.026		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	6.9E-3	.015	pCi/g	1	0.031		11/18/10
Europium-152		14683-23-9	LA-508-481	U	-0.013	.05	pCi/g	1	0.074		11/18/10
Europium-154		15585-10-1	LA-508-481	U	0.0080	.044	pCi/g	1	0.085		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.26	.12	pCi/g	1	0.32		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.51	.087	pCi/g	1	0.051		11/18/10
Radium-228		15262-20-1	LA-508-481		0.58	.12	pCi/g	1	0.087		11/18/10

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

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N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010005
SAF# F11-024
Sample ID B29D43

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.4	.62	pCi/g	1	0.83		12/01/10
Gross Beta		12587-47-2	LA-508-415	U	0.46	.32	pCi/g	1	0.51		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	6.9E-3	.02	pCi/g	1	0.039		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	1.4E-3	.023	pCi/g	1	0.044		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.052	.08	pCi/g	1	0.10		11/18/10
Europium-154		15585-10-1	LA-508-481	U	8.9E-3	.057	pCi/g	1	0.11		11/18/10
Europium-155		14391-16-3	LA-508-481	U	-8.9E-3	.072	pCi/g	1	0.13		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.52	.11	pCi/g	1	0.076		11/18/10
Radium-228		15262-20-1	LA-508-481		0.50	.17	pCi/g	1	0.13		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010006
SAF# F11-024
Sample ID B29D52

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.9	.66	pCi/g	1	0.83		12/01/10
Gross Beta		12587-47-2	LA-508-415		0.76	.34	pCi/g	1	0.51		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-8.2E-3	.022	pCi/g	1	0.041		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-0.011	.02	pCi/g	1	0.038		11/18/10
Europium-152		14683-23-9	LA-508-481	U	-0.019	.071	pCi/g	1	0.12		11/18/10
Europium-154		15585-10-1	LA-508-481	U	0.055	.061	pCi/g	1	0.13		11/18/10
Europium-155		14391-16-3	LA-508-481	U	-3.2E-3	.097	pCi/g	1	0.18		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.50	.11	pCi/g	1	0.080		11/18/10
Radium-228		15262-20-1	LA-508-481		0.64	.17	pCi/g	1	0.13		11/18/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010007
SAF# F11-024
Sample ID B29D53

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.8	.66	pCi/g	1	0.85		12/01/10
Gross Beta		12587-47-2	LA-508-415	U	0.49	.33	pCi/g	1	0.54		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-1.6E-3	.015	pCi/g	1	0.029		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-4.9E-4	.014	pCi/g	1	0.027		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.018	.049	pCi/g	1	0.083		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.0030	.043	pCi/g	1	0.084		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.020	.064	pCi/g	1	0.12		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.57	.094	pCi/g	1	0.055		11/18/10
Radium-228		15262-20-1	LA-508-481		0.64	.12	pCi/g	1	0.088		11/18/10

MDL = Minimum Detection
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U - Analyzed for but not detected above limiting criteria.
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010008
SAF# F11-024
Sample ID B29D54

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.9	.62	pCi/g	1	0.77		12/01/10
Gross Beta		12587-47-2	LA-508-415	U	0.33	.28	pCi/g	1	0.49		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	2.5E-3	.025	pCi/g	1	0.049		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-0.010	.022	pCi/g	1	0.041		11/18/10
Europium-152		14683-23-9	LA-508-481	U	2.9E-3	.095	pCi/g	1	0.13		11/18/10
Europium-154		15585-10-1	LA-508-481	U	0.086	.072	pCi/g	1	0.14		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.052	.11	pCi/g	1	0.20		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.41	.11	pCi/g	1	0.091		11/18/10
Radium-228		15262-20-1	LA-508-481		0.71	.17	pCi/g	1	0.16		11/18/10

MDL = Minimum Detection
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DF = Dilution Factor
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010009
SAF# F11-024
Sample ID B29D55

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.6	.66	pCi/g	1	0.88		12/01/10
Gross Beta		12587-47-2	LA-508-415		0.50	.31	pCi/g	1	0.50		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	0.020	.021	pCi/g	1	0.029		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-4.5E-3	.018	pCi/g	1	0.029		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.012	.046	pCi/g	1	0.085		11/18/10
Europium-154		15585-10-1	LA-508-481	U	0.014	.044	pCi/g	1	0.089		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.017	.061	pCi/g	1	0.11		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.51	.093	pCi/g	1	0.053		11/18/10
Radium-228		15262-20-1	LA-508-481		0.48	.13	pCi/g	1	0.076		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Sample # 103010010
SAF# F11-024
Sample ID B29D61

Matrix SOIL
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.2	.54	pCi/g	1	0.75		12/01/10
Gross Beta		12587-47-2	LA-508-415	U	0.40	.29	pCi/g	1	0.48		12/01/10
GEA Prep											**11/17/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-5.8E-3	.015	pCi/g	1	0.027		11/17/10
Cobalt-60		10198-40-0	LA-508-481	U	-1.6E-3	.012	pCi/g	1	0.024		11/17/10
Europium-152		14683-23-9	LA-508-481	U	0.029	.048	pCi/g	1	0.086		11/17/10
Europium-154		15585-10-1	LA-508-481	U	-0.034	.045	pCi/g	1	0.079		11/17/10
Europium-155		14391-16-3	LA-508-481	U	-0.020	.064	pCi/g	1	0.11		11/17/10
Radium-226	R	13982-63-3	LA-508-481		0.49	.095	pCi/g	1	0.057		11/17/10
Radium-228		15262-20-1	LA-508-481		0.41	.11	pCi/g	1	0.090		11/17/10

MDL = Minimum Detection
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TP Err = Total Propagated
DF = Dilution Factor
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

REVISION 1

Attention Michael Neely
Department Radiochemistry

Group # WSCF103013

Sample # 103013001
SAF# F11-026
Sample ID B29D74

Matrix WATER
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/17/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	4.5E-3	.045	pCi/L	1	1.5		11/29/10
Gross Beta		12587-47-2	LA-508-415	U	1.4	2	pCi/L	1	3.3		11/29/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	5.4	11	pCi/L	1	19		11/19/10
Cobalt-60		10198-40-0	LA-508-481	U	2.2	9.7	pCi/L	1	17		11/19/10
Europium-152		14683-23-9	LA-508-481	U	-12	32	pCi/L	1	51		11/19/10
Europium-154		15585-10-1	LA-508-481	U	1.9	28	pCi/L	1	50		11/19/10
Europium-155		14391-16-3	LA-508-481	U	4.3	27	pCi/L	1	45		11/19/10
Radium-226	R	13982-63-3	LA-508-481		82	39	pCi/L	1	35		11/19/10
Radium-228		15262-20-1	LA-508-481		82	80	pCi/L	1	56		11/19/10

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TP Err = Total Propagated
DF = Dilution Factor
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N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

REVISED103013 -

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103014

Sample # 103014001
SAF# F11-026
Sample ID B29DM8

Matrix WATER
Sampled 11/16/10
Received 11/16/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Th/Pu/Am/U Teva											**11/18/10**
AEA Am-U-Pu											
Americium-241	J	14596-10-2	LA-508-471		0.16	.08	pCi/L	1	0.022		11/19/10
AEA Pu-Np											
Plutonium-238		13981-16-3	LA-508-471	U	-0.10	.21	pCi/L	1	0.38		11/22/10
Plutonium-239/240		PU-239/240	LA-508-471	U	2.7E-6	.064	pCi/L	1	0.13		11/22/10
Uranium Iso											
Uranium-234		U-233/234	LA-508-471	U	0.065	.058	pCi/L	1	0.068		11/19/10
Uranium-235		15117-96-1	LA-508-471	U	0.040	.058	pCi/L	1	0.094		11/19/10
Uranium-238		U-238	LA-508-471	U	0.037	.046	pCi/L	1	0.068		11/19/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039001
SAF# F11-024
Sample ID B29D60

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.3	.5	pCi/g	1	0.61		12/01/10
Gross Beta		12587-47-2	LA-508-415		1.3	.58	pCi/g	1	0.93		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-7.1E-3	.022	pCi/g	1	0.042		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-3.7E-3	.021	pCi/g	1	0.041		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.047	.072	pCi/g	1	0.13		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.059	.074	pCi/g	1	0.13		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.12	.087	pCi/g	1	0.17		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.52	.11	pCi/g	1	0.082		11/18/10
Radium-228		15262-20-1	LA-508-481		0.57	.18	pCi/g	1	0.14		11/18/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039002
SAF# F11-024
Sample ID B29D62

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**11/23/10**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.2	.45	pCi/g	1	0.53		12/01/10
Gross Beta	12587-47-2	LA-508-415		0.80	.48	pCi/g	1	0.79		12/01/10
GEA Prep										**11/18/10**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-0.019	.025	pCi/g	1	0.044		11/18/10
Cobalt-60	10198-40-0	LA-508-481	U	-0.018	.021	pCi/g	1	0.037		11/18/10
Europium-152	14683-23-9	LA-508-481	U	-6.2E-3	.079	pCi/g	1	0.13		11/18/10
Europium-154	15585-10-1	LA-508-481	U	-0.053	.073	pCi/g	1	0.13		11/18/10
Europium-155	14391-16-3	LA-508-481	U	0.055	.11	pCi/g	1	0.21		11/18/10
Radium-226 R	13982-63-3	LA-508-481		0.51	.12	pCi/g	1	0.082		11/18/10
Radium-228	15262-20-1	LA-508-481		0.82	.19	pCi/g	1	0.14		11/18/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039003
SAF# F11-024
Sample ID B29D63

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.1	.49	pCi/g	1	0.64		12/01/10
Gross Beta		12587-47-2	LA-508-415		1.5	.59	pCi/g	1	0.92		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	2.8E-3	.018	pCi/g	1	0.031		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	2.8E-3	.012	pCi/g	1	0.025		11/18/10
Europium-152		14683-23-9	LA-508-481	U	-2.1E-3	.052	pCi/g	1	0.085		11/18/10
Europium-154		15585-10-1	LA-508-481	U	0.019	.053	pCi/g	1	0.094		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.024	.063	pCi/g	1	0.12		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.55	.098	pCi/g	1	0.060		11/18/10
Radium-228		15262-20-1	LA-508-481		0.48	.14	pCi/g	1	0.096		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039004
SAF# F11-024
Sample ID B29D65

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.5	.49	pCi/g	1	0.53		12/01/10
Gross Beta		12587-47-2	LA-508-415		0.91	.48	pCi/g	1	0.79		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-0.014	.024	pCi/g	1	0.043		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	2.1E-3	.022	pCi/g	1	0.043		11/18/10
Europium-152		14683-23-9	LA-508-481	U	6.6E-3	.1	pCi/g	1	0.12		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.013	.076	pCi/g	1	0.14		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.045	.076	pCi/g	1	0.13		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.50	.12	pCi/g	1	0.086		11/18/10
Radium-228		15262-20-1	LA-508-481		0.63	.16	pCi/g	1	0.14		11/18/10

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

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U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039005
SAF# F11-024
Sample ID B29D66

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		2.0	.62	pCi/g	1	0.65		12/01/10
Gross Beta		12587-47-2	LA-508-415		2.6	.66	pCi/g	1	0.91		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-5.1E-3	.024	pCi/g	1	0.044		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	0.016	.023	pCi/g	1	0.048		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.025	.11	pCi/g	1	0.12		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.051	.064	pCi/g	1	0.11		11/18/10
Europium-155		14391-16-3	LA-508-481	U	-0.019	.097	pCi/g	1	0.17		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.47	.098	pCi/g	1	0.081		11/18/10
Radium-228		15262-20-1	LA-508-481		0.63	.15	pCi/g	1	0.12		11/18/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039006
SAF# F11-024
Sample ID B29D67

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		0.98	.46	pCi/g	1	0.61		12/01/10
Gross Beta		12587-47-2	LA-508-415		1.1	.55	pCi/g	1	0.90		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	0.013	.032	pCi/g	1	0.063		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	9.9E-3	.03	pCi/g	1	0.061		11/18/10
Europium-152		14683-23-9	LA-508-481	U	-0.029	.11	pCi/g	1	0.19		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.027	.081	pCi/g	1	0.15		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.055	.15	pCi/g	1	0.28		11/18/10
Radium-226	R	13982-63-3	LA-508-481		1.0	.2	pCi/g	1	0.11		11/18/10
Radium-228		15262-20-1	LA-508-481		0.88	.29	pCi/g	1	0.21		11/18/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039007
SAF# F11-024
Sample ID B29D68

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.7	.52	pCi/g	1	0.55		12/01/10
Gross Beta		12587-47-2	LA-508-415		1.5	.52	pCi/g	1	0.80		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	8.7E-4	.015	pCi/g	1	0.030		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-5.3E-3	.014	pCi/g	1	0.027		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.014	.051	pCi/g	1	0.086		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.032	.043	pCi/g	1	0.078		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.092	.075	pCi/g	1	0.12		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.52	.095	pCi/g	1	0.054		11/18/10
Radium-228		15262-20-1	LA-508-481		0.50	.11	pCi/g	1	0.10		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039008
SAF# F11-024
Sample ID B29D69

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.3	.48	pCi/g	1	0.58		12/01/10
Gross Beta		12587-47-2	LA-508-415		1.5	.56	pCi/g	1	0.86		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-7.7E-3	.026	pCi/g	1	0.048		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	9.1E-3	.023	pCi/g	1	0.046		11/18/10
Europium-152		14683-23-9	LA-508-481	U	0.059	.1	pCi/g	1	0.14		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.090	.082	pCi/g	1	0.14		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.065	.11	pCi/g	1	0.21		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.53	.12	pCi/g	1	0.089		11/18/10
Radium-228		15262-20-1	LA-508-481		0.71	.17	pCi/g	1	0.15		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
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DF = Dilution Factor
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N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039009
SAF# F11-024
Sample ID B29D70

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.2	.48	pCi/g	1	0.62		12/01/10
Gross Beta		12587-47-2	LA-508-415		1.6	.53	pCi/g	1	0.82		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-8.9E-3	.018	pCi/g	1	0.029		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-4.3E-3	.014	pCi/g	1	0.026		11/18/10
Europium-152		14683-23-9	LA-508-481	U	-0.010	.053	pCi/g	1	0.086		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.029	.045	pCi/g	1	0.081		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.096	.067	pCi/g	1	0.13		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.61	.1	pCi/g	1	0.058		11/18/10
Radium-228		15262-20-1	LA-508-481		0.49	.12	pCi/g	1	0.091		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039010
SAF# F11-024
Sample ID B29D71

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.3	.48	pCi/g	1	0.58		12/01/10
Gross Beta		12587-47-2	LA-508-415		2.7	.63	pCi/g	1	0.83		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-6.6E-3	.032	pCi/g	1	0.061		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	0.020	.034	pCi/g	1	0.071		11/18/10
Europium-152		14683-23-9	LA-508-481	U	2.7E-3	.13	pCi/g	1	0.18		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.092	.093	pCi/g	1	0.16		11/18/10
Europium-155		14391-16-3	LA-508-481	U	0.18	.15	pCi/g	1	0.21		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.44	.17	pCi/g	1	0.12		11/18/10
Radium-228		15262-20-1	LA-508-481		0.71	.25	pCi/g	1	0.19		11/18/10

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Sample # 103039011
SAF# F11-024
Sample ID B29D72

Matrix SOIL
Sampled 11/17/10
Received 11/17/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.4	.48	pCi/g	1	0.54		12/01/10
Gross Beta		12587-47-2	LA-508-415		1.2	.52	pCi/g	1	0.84		12/01/10
GEA Prep											**11/18/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-1.2E-3	.022	pCi/g	1	0.041		11/18/10
Cobalt-60		10198-40-0	LA-508-481	U	-3.9E-3	.017	pCi/g	1	0.033		11/18/10
Europium-152		14683-23-9	LA-508-481	U	-0.027	.075	pCi/g	1	0.11		11/18/10
Europium-154		15585-10-1	LA-508-481	U	-0.014	.063	pCi/g	1	0.10		11/18/10
Europium-155		14391-16-3	LA-508-481	U	-0.081	.1	pCi/g	1	0.18		11/18/10
Radium-226	R	13982-63-3	LA-508-481		0.49	.12	pCi/g	1	0.077		11/18/10
Radium-228		15262-20-1	LA-508-481		0.61	.18	pCi/g	1	0.13		11/18/10

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

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U - Analyzed for but not detected above limiting criteria.
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X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070001
SAF# F11-024
Sample ID B29D36

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.74	.48	pCi/g	1	0.77		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		1.2	.55	pCi/g	1	0.91		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-1.5E-3	.006	pCi/g	1	9.6E-3		11/23/10
Cobalt-60		10198-40-0	LA-508-481	U	-4.9E-3	.005	pCi/g	1	8.9E-3		11/23/10
Europium-152		14683-23-9	LA-508-481	U	3.3E-4	.021	pCi/g	1	0.031		11/23/10
Europium-154		15585-10-1	LA-508-481	U	4.7E-3	.019	pCi/g	1	0.031		11/23/10
Europium-155		14391-16-3	LA-508-481	U	0.046	.028	pCi/g	1	0.055		11/23/10
Radium-226	R	13982-63-3	LA-508-481		0.48	.062	pCi/g	1	0.020		11/23/10
Radium-228		15262-20-1	LA-508-481		0.50	.074	pCi/g	1	0.033		11/23/10

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

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U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070002
SAF# F11-024
Sample ID B29D37

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		2.6	.78	pCi/g	1	0.93		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		3.3	.74	pCi/g	1	0.99		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	1.3E-3	.0079	pCi/g	1	0.015		11/22/10
Cobalt-60		10198-40-0	LA-508-481	U	-5.5E-3	.0069	pCi/g	1	0.013		11/22/10
Europium-152		14683-23-9	LA-508-481	U	5.9E-3	.028	pCi/g	1	0.041		11/22/10
Europium-154		15585-10-1	LA-508-481	U	-0.025	.023	pCi/g	1	0.041		11/22/10
Europium-155		14391-16-3	LA-508-481	U	0.029	.031	pCi/g	1	0.056		11/22/10
Radium-226	R	13982-63-3	LA-508-481		0.48	.064	pCi/g	1	0.026		11/22/10
Radium-228		15262-20-1	LA-508-481		0.53	.085	pCi/g	1	0.045		11/22/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

DRAFT

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070003
SAF# F11-024
Sample ID B29D40

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.64	.47	pCi/g	1	0.77		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		1.0	.52	pCi/g	1	0.84		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-1.9E-3	.0071	pCi/g	1	0.013		11/22/10
Cobalt-60		10198-40-0	LA-508-481	U	1.3E-3	.0069	pCi/g	1	0.013		11/22/10
Europium-152		14683-23-9	LA-508-481	U	-3.7E-3	.028	pCi/g	1	0.035		11/22/10
Europium-154		15585-10-1	LA-508-481	U	-0.016	.022	pCi/g	1	0.039		11/22/10
Europium-155		14391-16-3	LA-508-481	U	0.046	.034	pCi/g	1	0.047		11/22/10
Radium-226	R	13982-63-3	LA-508-481		0.41	.055	pCi/g	1	0.024		11/22/10
Radium-228		15262-20-1	LA-508-481		0.51	.097	pCi/g	1	0.041		11/22/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070004
SAF# F11-024
Sample ID B29D41

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		0.74	.48	pCi/g	1	0.74		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		1.3	.53	pCi/g	1	0.83		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-8.8E-3	.0067	pCi/g	1	0.011		11/22/10
Cobalt-60		10198-40-0	LA-508-481	U	3.2E-3	.0064	pCi/g	1	0.012		11/22/10
Europium-152		14683-23-9	LA-508-481	U	-2.1E-3	.028	pCi/g	1	0.034		11/22/10
Europium-154		15585-10-1	LA-508-481	U	-0.023	.019	pCi/g	1	0.033		11/22/10
Europium-155		14391-16-3	LA-508-481	U	0.047	.039	pCi/g	1	0.056		11/22/10
Radium-226	R	13982-63-3	LA-508-481		0.44	.059	pCi/g	1	0.022		11/22/10
Radium-228		15262-20-1	LA-508-481		0.50	.081	pCi/g	1	0.037		11/22/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070005
SAF# F11-024
Sample ID B29D44

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.68	.95	pCi/g	1	1.8		12/01/10
Gross Beta		12587-47-2	LA-508-415	U	1.1	1	pCi/g	1	1.8		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	0.013	.013	pCi/g	1	0.025		11/22/10
Cobalt-60		10198-40-0	LA-508-481	U	-6.9E-3	.011	pCi/g	1	0.021		11/22/10
Europium-152		14683-23-9	LA-508-481	U	-0.019	.061	pCi/g	1	0.064		11/22/10
Europium-154		15585-10-1	LA-508-481	U	-0.021	.034	pCi/g	1	0.064		11/22/10
Europium-155		14391-16-3	LA-508-481	U	2.7E-3	.039	pCi/g	1	0.069		11/22/10
Radium-226	R	13982-63-3	LA-508-481		0.52	.079	pCi/g	1	0.043		11/22/10
Radium-228		15262-20-1	LA-508-481		0.53	.097	pCi/g	1	0.073		11/22/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070006
SAF# F11-024
Sample ID B29D45

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**11/23/10**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	3.5E-3	.031	pCi/g	1	1.7		12/01/10
Gross Beta	12587-47-2	LA-508-415	U	1.3	1	pCi/g	1	1.8		12/01/10
GEA Prep										**11/19/10**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	0.011	.012	pCi/g	1	0.014		11/22/10
Cobalt-60	10198-40-0	LA-508-481	U	-4.1E-3	.0078	pCi/g	1	0.014		11/22/10
Europium-152	14683-23-9	LA-508-481	U	-0.026	.037	pCi/g	1	0.044		11/22/10
Europium-154	15585-10-1	LA-508-481	U	-0.021	.024	pCi/g	1	0.044		11/22/10
Europium-155	14391-16-3	LA-508-481	U	0.051	.039	pCi/g	1	0.063		11/22/10
Radium-226 R	13982-63-3	LA-508-481		0.46	.062	pCi/g	1	0.028		11/22/10
Radium-228	15262-20-1	LA-508-481		0.50	.083	pCi/g	1	0.047		11/22/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070007
SAF# F11-024
Sample ID B29D46

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	1.2	.98	pCi/g	1	1.7		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		2.7	1.1	pCi/g	1	1.8		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481		0.012	.0066	pCi/g	1	7.3E-3		11/23/10
Cobalt-60		10198-40-0	LA-508-481	U	-2.3E-3	.0038	pCi/g	1	7.2E-3		11/23/10
Europium-152		14683-23-9	LA-508-481	U	-0.017	.013	pCi/g	1	0.023		11/23/10
Europium-154		15585-10-1	LA-508-481	U	2.4E-3	.014	pCi/g	1	0.022		11/23/10
Europium-155		14391-16-3	LA-508-481		0.034	.023	pCi/g	1	0.034		11/23/10
Radium-226	R	13982-63-3	LA-508-481		0.47	.056	pCi/g	1	0.015		11/23/10
Radium-228		15262-20-1	LA-508-481		0.50	.068	pCi/g	1	0.025		11/23/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070008
SAF# F11-024
Sample ID B29D56

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.40	.43	pCi/g	1	0.73		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		1.2	.53	pCi/g	1	0.84		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-0.010	.014	pCi/g	1	0.024		11/29/10
Cobalt-60		10198-40-0	LA-508-481	U	1.4E-6	.0094	pCi/g	1	0.019		11/29/10
Europium-152		14683-23-9	LA-508-481	U	6.7E-3	.043	pCi/g	1	0.071		11/29/10
Europium-154		15585-10-1	LA-508-481	U	-0.016	.035	pCi/g	1	0.063		11/29/10
Europium-155		14391-16-3	LA-508-481	U	-0.025	.052	pCi/g	1	0.091		11/29/10
Radium-226	R	13982-63-3	LA-508-481		0.39	.079	pCi/g	1	0.039		11/29/10
Radium-228		15262-20-1	LA-508-481		0.48	.11	pCi/g	1	0.063		11/29/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070009
SAF# F11-024
Sample ID B29D57

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.5	.6	pCi/g	1	0.80		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		1.6	.56	pCi/g	1	0.83		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-2.3E-3	.013	pCi/g	1	0.024		12/01/10
Cobalt-60		10198-40-0	LA-508-481	U	-9.1E-3	.012	pCi/g	1	0.021		12/01/10
Europium-152		14683-23-9	LA-508-481	U	-0.023	.046	pCi/g	1	0.070		12/01/10
Europium-154		15585-10-1	LA-508-481	U	0.013	.037	pCi/g	1	0.074		12/01/10
Europium-155		14391-16-3	LA-508-481	U	7.8E-3	.053	pCi/g	1	0.097		12/01/10
Radium-226	R	13982-63-3	LA-508-481		0.54	.091	pCi/g	1	0.046		12/01/10
Radium-228		15262-20-1	LA-508-481		0.51	.12	pCi/g	1	0.080		12/01/10

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

B - Analyte was detected in both the BLANK and SAMPLE
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X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070010
SAF# F11-024
Sample ID B29D58

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.3	.57	pCi/g	1	0.82		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		1.8	.58	pCi/g	1	0.88		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481		0.094	.033	pCi/g	1	0.023		11/19/10
Cobalt-60		10198-40-0	LA-508-481	U	4.3E-4	.012	pCi/g	1	0.024		11/19/10
Europium-152		14683-23-9	LA-508-481	U	-0.019	.049	pCi/g	1	0.078		11/19/10
Europium-154		15585-10-1	LA-508-481	U	-8.7E-3	.038	pCi/g	1	0.073		11/19/10
Europium-155		14391-16-3	LA-508-481	U	9.9E-3	.056	pCi/g	1	0.10		11/19/10
Radium-226	R	13982-63-3	LA-508-481		0.43	.077	pCi/g	1	0.043		11/19/10
Radium-228		15262-20-1	LA-508-481		0.57	.11	pCi/g	1	0.072		11/19/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
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X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Sample # 103070011
SAF# F11-024
Sample ID B29D59

Matrix SOIL
Sampled 11/18/10
Received 11/18/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/23/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		1.6	.62	pCi/g	1	0.81		12/01/10
Gross Beta	J	12587-47-2	LA-508-415		1.8	.59	pCi/g	1	0.88		12/01/10
GEA Prep											**11/19/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-4.5E-3	.015	pCi/g	1	0.024		11/21/10
Cobalt-60		10198-40-0	LA-508-481	U	-6.3E-3	.012	pCi/g	1	0.022		11/21/10
Europium-152		14683-23-9	LA-508-481	U	0.012	.049	pCi/g	1	0.069		11/21/10
Europium-154		15585-10-1	LA-508-481	U	3.1E-4	.041	pCi/g	1	0.079		11/21/10
Europium-155		14391-16-3	LA-508-481	U	0.033	.06	pCi/g	1	0.11		11/21/10
Radium-226	R	13982-63-3	LA-508-481		0.66	.1	pCi/g	1	0.046		11/21/10
Radium-228		15262-20-1	LA-508-481		0.49	.12	pCi/g	1	0.065		11/21/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
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X,Y or Z - See comment detail and/or narrative.

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WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

Sample # 103084001
SAF# F11-024
Sample ID B29D47

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/29/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	1.4	.97	pCi/g	1	1.6		12/02/10
Gross Beta		12587-47-2	LA-508-415	U	1.5	1	pCi/g	1	1.9		12/02/10
GEA Prep											**11/22/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	-3.3E-3	.016	pCi/g	1	0.032		12/01/10
Cobalt-60		10198-40-0	LA-508-481	U	-0.011	.015	pCi/g	1	0.028		12/01/10
Europium-152		14683-23-9	LA-508-481	U	0.026	.056	pCi/g	1	0.094		12/01/10
Europium-154		15585-10-1	LA-508-481	U	-2.6E-3	.046	pCi/g	1	0.095		12/01/10
Europium-155		14391-16-3	LA-508-481	U	-0.026	.063	pCi/g	1	0.12		12/01/10
Radium-226	R	13982-63-3	LA-508-481		0.69	.11	pCi/g	1	0.067		12/01/10
Radium-228		15262-20-1	LA-508-481		0.51	.12	pCi/g	1	0.11		12/01/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

Sample # 103084002
SAF# F11-024
Sample ID B29D48

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/29/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.87	.87	pCi/g	1	1.5		12/02/10
Gross Beta		12587-47-2	LA-508-415		2.6	1	pCi/g	1	1.7		12/02/10
GEA Prep											**11/22/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	0.020	.017	pCi/g	1	0.036		11/30/10
Cobalt-60		10198-40-0	LA-508-481	U	5.6E-3	.014	pCi/g	1	0.030		11/30/10
Europium-152		14683-23-9	LA-508-481	U	-0.035	.053	pCi/g	1	0.090		11/30/10
Europium-154		15585-10-1	LA-508-481	U	-0.027	.043	pCi/g	1	0.082		11/30/10
Europium-155		14391-16-3	LA-508-481	U	0.020	.066	pCi/g	1	0.13		11/30/10
Radium-226	R	13982-63-3	LA-508-481		0.80	.12	pCi/g	1	0.056		11/30/10
Radium-228		15262-20-1	LA-508-481		0.63	.13	pCi/g	1	0.10		11/30/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

Sample # 103084003
SAF# F11-024
Sample ID B29D49

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/29/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415		2.6	.98	pCi/g	1	1.3		12/02/10
Gross Beta		12587-47-2	LA-508-415		1.8	.98	pCi/g	1	1.7		12/02/10
GEA Prep											**11/22/10**
GEA											
Cesium-137		10045-97-3	LA-508-481		0.073	.034	pCi/g	1	0.031		12/01/10
Cobalt-60		10198-40-0	LA-508-481	U	7.9E-3	.013	pCi/g	1	0.028		12/01/10
Europium-152		14683-23-9	LA-508-481	U	0.043	.05	pCi/g	1	0.090		12/01/10
Europium-154		15585-10-1	LA-508-481	U	-0.013	.04	pCi/g	1	0.079		12/01/10
Europium-155		14391-16-3	LA-508-481	U	8.7E-3	.066	pCi/g	1	0.12		12/01/10
Radium-226	R	13982-63-3	LA-508-481		0.66	.1	pCi/g	1	0.060		12/01/10
Radium-228		15262-20-1	LA-508-481		0.46	.12	pCi/g	1	0.095		12/01/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

Sample # 103084004
SAF# F11-024
Sample ID B29D50

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/29/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.73	.86	pCi/g	1	1.6		12/02/10
Gross Beta		12587-47-2	LA-508-415	U	1.5	1.1	pCi/g	1	1.9		12/02/10
GEA Prep											**11/22/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	3.6E-3	.017	pCi/g	1	0.034		12/01/10
Cobalt-60		10198-40-0	LA-508-481	U	4.2E-3	.014	pCi/g	1	0.030		12/01/10
Europium-152		14683-23-9	LA-508-481	U	-4.1E-4	.056	pCi/g	1	0.095		12/01/10
Europium-154		15585-10-1	LA-508-481	U	0.027	.048	pCi/g	1	0.10		12/01/10
Europium-155		14391-16-3	LA-508-481	U	-0.012	.069	pCi/g	1	0.13		12/01/10
Radium-226	R	13982-63-3	LA-508-481		0.75	.12	pCi/g	1	0.063		12/01/10
Radium-228		15262-20-1	LA-508-481		0.54	.13	pCi/g	1	0.10		12/01/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

Sample # 103084005
SAF# F11-024
Sample ID B29D51

Matrix SOIL
Sampled 11/19/10
Received 11/19/10

Test Performed		CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep											**11/29/10**
Gross Alpha/Beta											
Gross Alpha		12587-46-1	LA-508-415	U	0.74	.86	pCi/g	1	1.6		12/02/10
Gross Beta		12587-47-2	LA-508-415	U	1.6	1	pCi/g	1	1.8		12/02/10
GEA Prep											**11/22/10**
GEA											
Cesium-137		10045-97-3	LA-508-481	U	0.023	.018	pCi/g	1	0.025		12/01/10
Cobalt-60		10198-40-0	LA-508-481	U	-7.8E-3	.016	pCi/g	1	0.027		12/01/10
Europium-152		14683-23-9	LA-508-481	U	0.022	.053	pCi/g	1	0.093		12/01/10
Europium-154		15585-10-1	LA-508-481	U	-0.013	.044	pCi/g	1	0.088		12/01/10
Europium-155		14391-16-3	LA-508-481	U	0.034	.059	pCi/g	1	0.12		12/01/10
Radium-226	R	13982-63-3	LA-508-481		0.66	.1	pCi/g	1	0.049		12/01/10
Radium-228		15262-20-1	LA-508-481		0.56	.11	pCi/g	1	0.082		12/01/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103268

Sample # 103268001
SAF# F11-024
Sample ID B29T97

Matrix SOIL
Sampled 12/07/10
Received 12/07/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**12/09/10**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		0.93	.48	pCi/g	1	0.72		12/14/10
Gross Beta	12587-47-2	LA-508-415		1.8	.48	pCi/g	1	0.66		12/14/10
GEA Prep										**12/08/10**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	2.8E-5	.1	pCi/g	1	0.19		12/08/10
Cobalt-60	10198-40-0	LA-508-481	U	0.051	.11	pCi/g	1	0.23		12/08/10
Europium-152	14683-23-9	LA-508-481	U	0.29	.32	pCi/g	1	0.44		12/08/10
Europium-154	15585-10-1	LA-508-481	U	-4.4E-3	.33	pCi/g	1	0.65		12/08/10
Europium-155	14391-16-3	LA-508-481	U	-0.13	.26	pCi/g	1	0.40		12/08/10
Radium-228	15262-20-1	LA-508-481	U	0.097	.49	pCi/g	1	0.85		12/08/10

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

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 2
Narrative
WSCF103010

Introduction

Ten (10) S&GRP samples were received at the WSCF Laboratory on November 16, 2010. The sample was 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. Also attached is IRF 10-273 dealing with additional elements requested in the ICP/MS 200.8 analysis. 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

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):

- Batch QC 170333 analyzed on sample# B29D53 (103010007)

- Matrix Spike recovery is 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):

- Batch QC 170023 analyzed on sample# B28301 (102920003)
  - Selenium was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.

All other applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 169948 analyzed on sample# B29D64 (103010001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
  - Batch QC 169949 analyzed on sample# B29D61 (103010010)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
    - Cobalt-60 RPD and RPD limit not printed due to a LIMS problem where the original and Duplicate equal zero. No flags assigned.

All other applicable QC controls are within the established limits.

Narrative

Attachment 2
Narrative
WSCF103010

- Gross Alpha / Gross Beta:
  - Batch QC 170097 analyzed on sample# B29D38 (103010002)
    - Gross Alpha - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103010

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

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Narrative

Attachment 2
Narrative
WSCF103010

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

5

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-085 — PAGE 1 OF 1

COLLECTOR: T.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 29	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NOT	FIELD LOGBOOK NO.: HNF-N-[illegible]	ACTUAL SAMPLE DEPTH: 3	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103010

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 2008	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS GEA	SEE ITEM (3) IN SPECIAL INSTRUCTIONS AIL

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
829064	1	SOIL	11-16-10	1321	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: T.M. Hall	DATE/TIME: 11-16-10 1500	RECEIVED BY/STORED IN: M Nelson M. Nelson	DATE/TIME: 11-16-10 1500
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 WSCF Analytical is 402114ES20,for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 7)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-089 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	AIR QUALITY: ☐	DATA TURNAROUND: 3 Days / 12 Days	
SAMPLING LOCATION: KW Sed. Basin Sample 3	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-307-10	ACTUAL SAMPLE DEPTH: 3'	COA: 30196ZES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Se=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D38 2	SOIL	11/16/10	0925	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F.M. Hall	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:12:02 PM
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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-130	PAGE 1 OF 1
COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 4	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF N-55-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60mL	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Composite Hrs: 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D39	3	SOIL	11/16/10	0941	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: F M Hill	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

ChemWare

Friday, November 19, 2010 7:12:02 PM
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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-142

PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 7	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF N 5621-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, Wi=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D42	4	SOIL	11/16/10	1612	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Jim Hall	DATE/TIME: 11/16/10 1500	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(7) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

ChemWare

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-146 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 8	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-302-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D43	5	SOIL	11/16/10	1030	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11/16/10	Kevin Nelson	11/16/10 0500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6005-618 (REV 2)

Friday, November 19, 2010 7:12:02 PM
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ChemWare

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-033 — PAGE 1 OF 1

COLLECTOR: Fm Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 17	PROJECT DESIGNATION: 183 KW Ventilation Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-307-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301952ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=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	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B29D52 6	SOIL	11/16/10	1216	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Fm Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-818 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-037 PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 18	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-[illegible]	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium (ppx - 2.9%)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29053	7 SOIL	11/16/10	1100	✓	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11/16/10 1500	M. Nelson M. Nelson	11/16/10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-041 — PAGE 1 OF 1

COLLECTOR: F.M. Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 19	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-SED-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (TAL)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D54	8	SOIL	11-16-10	1739	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
F.M. Hall	11-16-10 1530	M. Nelson M. Nelson	11-16-10 1530

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

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ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-049 — PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 20	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: MKF-N-500-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	10 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium New - 1996	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D55	9	SOIL	11-16-10	1300	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
T.M. Hall	11-16-10 1500	M. Nelson	11-16-10 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6063-618 (REV. 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-073 — PAGE 1 OF 1

COLLECTOR: FM Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 26	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-501-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 — AIR QUALITY: ☐ — DATA TURNAROUND: 3 Days / 12 Days — METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SD=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (3196)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D61 10	SOIL	11-16-10	1341	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	11-16-10 500	M. Nelson	11-16-10 500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 2)

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Attachment 2
Narrative Rev 01
WSCF103013

Revision 1: Case Narrative Replaces the Prior Submittal in its Entirety. The project requested to add additional ICP/MS metals after the final report was issued. This revision includes the additional analytes.

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on November 16, 2010. The sample was 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. Also is attached an Issue Resolution Form (10-274) pertaining to the addition of metals by 200.8 requested by the client.

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):

Attachment 2
Narrative Rev 01
WSCF103013

- Batch QC 170063 analyzed on sample# B28MN8 (102912004)

All applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170031 analyzed on sample# B29D74 (103013001)
    - Radium-226 was present in the Blank due to Naturally Occurring Radioactive Material.
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 169946 analyzed on sample# B29D74 (103013001)

All 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.

Attachment 2
Narrative Rev 01
WSCF103013

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-274

Date: 12/3/10 SAF No. F11-026

SDG: 103013 TEST: ICPMS_Metals_200.8 **DUE DATE: NA**

LOGIN No.: 103013001

Sample No.(s): B29D74

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals.	Report the following additional 200.8 metals for the sample noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Work orders 103016 and 103014 did not have 200.8 metals requested; therefore data will not be added to these work orders. The revised work order for 103013 will be submitted by 12/8.

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

3

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-026-001 — PAGE 1 OF 1

COLLECTOR	**COMPANY CONTACT**	**TELEPHONE NO.**	**PROJECT COORDINATOR**
FM Hall	WIDRIG, DL	376-2958	WIDRIG, DL
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**
KW Sed. Basin Sample 37	183 KW Verification Sampling and Analysis - QC Sampling		F11-026
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**
NA	HNF-N-527-10	NA	301962ES10
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**
Waste Sampling & Characterization	N/A		N/A

PRICE CODE C04 — **DATA TURNAROUND** 3 Days / 12 Days

AIR QUALITY ☐

METHOD OF SHIPMENT GOVERNMENT VEHICLE

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)

103013

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2
HOLDING TIME	6 Months	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	500mL	500mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B29D74	WATER	11/16/10	0835	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	11/16/10 1500	M. Nelson	11/16/10 1500
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A 6003.618 (REV 2)

Tuesday, November 16, 2010 6:01:18 PM
Page 2 of 2

Attachment 2
Narrative
WSCF103014

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on November 16, 2010. The sample was 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.

Radiochemistry Comments

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

- Tracers are used to determine chemical yield. RPD is monitored in sample duplicate and is not required for tracer recovery per SOW.
- Americium-241:
  - Batch QC 169939 analyzed on sample# B29DM8 (103014001)

- The Blank is less than two times the MDC. "B" Flag not required.

All other applicable QC controls are within the established limits.

- Isotopic Plutonium analysis:
  - Batch QC 169939 analyzed on sample# B29DM8 (103014001)

All applicable QC controls are within the established limits.

- Isotopic Uranium analysis:
  - Batch QC 169939 analyzed on sample# B29DM8 (103014001)
    - Uranium-234 - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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** — F11-026-002 — PAGE 1 OF 1

COLLECTOR: FM Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C01	DATA TURNAROUND: 12 Days / 12 Days	SAMPLING LOCATION: KW Sed Basin Sample 37	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - QC Sampling
SAF NO.: F11-026	AIR QUALITY: ☐	ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-501-16
ACTUAL SAMPLE DEPTH: NA	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization
OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103014

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2
HOLDING TIME	180 Days	180 Days	6 Months
TYPE OF CONTAINER	G/P	P	G/P
NO. OF CONTAINER(S)	1	1	1
VOLUME	1L	1L	1L
SAMPLE ANALYSIS	Americium-241	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B29DM8	WATER	11/16/10	0835	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall	11/16/10 0500	M Nelson M Nelson	11/16/10 0500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) Isotopic Plutonium {Plutonium-238, Plutonium-239/240};
(2) Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238};

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

A-6003-618 (REV 2)

Tuesday, November 16, 2010 6:02:49 PM
Page 2 of 2

Attachment 2
Narrative
WSCF103039

Introduction

Eleven (11) S&GRP samples were received at the WSCF Laboratory on November 17, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170335 analyzed on sample# B29D60 (103039001)

- Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

- Batch QC 170344 analyzed on sample# B29D66 (103039005)
  - Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All other 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):

- Batch QC 170026 analyzed on sample# B28JR7 (102960001)
  - Manganese – Matrix Spike/Matrix Spike Duplicate Relative Percent Difference (RPD) was above established laboratory control limits. No flags issued.
  - Nickel and Selenium were detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.

All other applicable QC controls are within the established limits.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170015 analyzed on sample# B29D60 (103039001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.

- The Ra-226 duplicate RPDs (relative percent difference) were above established laboratory control limits. No flags assigned.

- Batch QC 170016 analyzed on sample# B29D71 (103039010)
  - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
  - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
  - Ra-228 was detected in the blank. There were no affected sample results; therefore no flags were assigned.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170098 analyzed on sample# B29D62 (103039002)
    - Gross Beta - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103039

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103039

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

5

CH2MHill Plateau Remediation Company | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | **F11-024-069** | **PAGE 1 OF 1**

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** WIDRIG, DL	**TELEPHONE NO.** 376-2858	**PROJECT COORDINATOR** WIDRIG, DL
PRICE CODE C04	**DATA TURNAROUND** 3 Days / 12 Days		
SAMPLING LOCATION KW Sed. Basin Sample 25	**PROJECT DESIGNATION** 183 KW Verification Sampling and Analysis - Soil	**SAF NO.** F11-024	**AIR QUALITY** ☐
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-507-162	**ACTUAL SAMPLE DEPTH** 3'	**COA** 301952ES10
METHOD OF SHIPMENT GOVERNMENT VEHICLE			
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A	**BILL OF LADING/AIR BILL NO.** N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

103039

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION		Cool-4C	Cool-4C	None	None
HOLDING TIME		6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER		G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)		1	1	1	1
VOLUME		250mL	60mL	500mL	250mL
SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS 200S	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS GEA	SEE ITEM (3) IN SPECIAL INSTRUCTIONS A/B
SAMPLE NO.	**MATRIX***	**SAMPLE DATE**	**SAMPLE TIME**		
B29D60	1 SOIL	NOV 17 2010	0903	X	X X X

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

RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: NOV 17 2010	RECEIVED BY/STORED IN: Victor Bring	DATE/TIME: NOV 17 2010
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:27 PM
Page 3 of 13

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-077 PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC

COMPANY CONTACT: WIDRIG, DL

TELEPHONE NO.: 376-2858

PROJECT COORDINATOR: WIDRIG, DL

PRICE CODE: C04

DATA TURNAROUND: 3 Days / 12 Days

SAMPLING LOCATION: KW Sed. Basin Sample 27

PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil

SAF NO.: F11-024

AIR QUALITY: ☐

ICE CHEST NO.: NA

FIELD LOGBOOK NO.: HNF-N-507-16

ACTUAL SAMPLE DEPTH: 3'

COA: 3019626510

METHOD OF SHIPMENT: GOVERNMEN VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D62	2 SOIL	NOV 17 2010	0830	X	X	X	X

CHAIN OF POSSESSION	SIGN/ PRINT NAMES		
RELINQUISHED BY/REMOVED FROM: FM Hall CHPRC	DATE/TIME: NOV 17 2010 1500	RECEIVED BY/STORED IN: [signature]	DATE/TIME: NOV 17 2010 1503
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

1503* The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

A-5005-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM

Page 4 of 13

ChemWare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-081 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 28	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-28	ACTUAL SAMPLE DEPTH: 3'	COA: 301962E510
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 | AIR QUALITY: ☐ | DATA TURNAROUND: 3 Days / 12 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wine, 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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D63	3 SOIL	NOV 17 2010	0910	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1300		NOV 17 2010 1300

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-093 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 30	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soi		SAF NO.: F11-024
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-102	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 | AIR QUALITY: | DATA TURNAROUND: 3 Days / 12 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	750ml	60ml	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D65	4 SOIL	NOV 17 2010	1331	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1600	Victor Sing	NOV 17 2010 1600

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

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Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — **F11-024-097** — **PAGE 1 OF 1**

COLLECTOR FM Hall CHPRC	**COMPANY CONTACT** WIDRIG, DL	**TELEPHONE NO.** 376-2858	**PROJECT COORDINATOR** WIDRIG, DL
SAMPLING LOCATION KW Sed. Basin Sample 31	**PROJECT DESIGNATION** 183 KW Verification Sampling and Analysis - Soil		**SAF NO.** F11-024
ICE CHEST NO. NA	**FIELD LOGBOOK NO.** HNF-N-507-16	**ACTUAL SAMPLE DEPTH** 3'	**COA** 301962ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE C04 — **AIR QUALITY** ☐ — **DATA TURNAROUND** 3 Days / 12 Days — **METHOD OF SHIPMENT** GOVERNMENT VEHICLE

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SC=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	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Cyanide (Total) - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D66	5 SOIL	NOV 17 2010	0935	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	[illegible]	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-101 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 32	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - (7/6)	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D67 6	SOIL	NOV 17 2010	1011	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	Victor Bing	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-918 (REV 2)

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-105 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 33	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chlorides Nitr - 2196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D68	SOIL	NOV 17 2010	1305	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 /500	[illegible]	NOV 17 2010 /505

SPECIAL INSTRUCTIONS

3* The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-918 (REV 2)

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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-109 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 34	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF -N-507-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04 | AIR QUALITY: ☐ | DATA TURNAROUND: 3 Days / 12 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool<4C	Cool<4C	None	None	
HOLDING TIME	6 Months	30 Days	6 Months	6 Months	
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P	
NO. OF CONTAINER(S)	1	1	1	1	
VOLUME	250 mL	60mL	300mL	250mL	
SAMPLE ANALYSIS	SPECIFIED IN SPECIAL INSTRUCTIONS	Chromium Hex (TAL)	SPECIFIED IN SPECIAL INSTRUCTIONS	SPECIFIED IN SPECIAL INSTRUCTIONS	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B29D69 8	SOIL	NOV 17 2010	1237	X	X X X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	VIGDRIG	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114E520.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

K-6003-618 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-113 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 35	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: -INF -N 507-	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D70	9 SOIL	~~OCT - 1 2010~~ NOV 17 2010	1040	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010		NOV 17 2010 1503

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

A-6003-618 (REV 4)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-117 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 36	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-18	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D71	10	SOIL	NOV 17 2010	0911	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	V Hall	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-121

PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
SAMPLING LOCATION: KW Sed. Basin Sample 38	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-16	ACTUAL SAMPLE DEPTH: 3	COA: 301962ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: C04

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 12 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250ml	60ml	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7199	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D72	SOIL	NOV 17 2010	0530	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 17 2010 1500	V. Sims	NOV 17 2010 1500

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

Wednesday, November 17, 2010 8:06:28 PM
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Attachment 2
Narrative
WSCF103070

Introduction

Eleven (11) S&GRP samples were received at the WSCF Laboratory on November 18, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170488 analyzed on sample# B29D36 (103070001)

- Insoluble Matrix Spike recovery is outside established laboratory limits. Affected sample results in this batch were "N" flagged.
- Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All other 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):

- Batch QC 170116 analyzed on sample# B27779 (103001001)
  - Manganese – The Matrix spike/matrix spike duplicate RPD (Relative Percent Difference) was also above the established laboratory control limit. No flags issued.
  - Manganese – Matrix Spike Duplicate recovery was outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Aluminum – 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.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170073 analyzed on sample# B29D36 (103070001)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - Naturally occurring radioisotopes: Ra-226 was detected in the blank. No flags applied.
    -
  - Batch QC 170075 analyzed on sample# B29D58 (103070010)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is

not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.

All other applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170074 analyzed on sample# B29D37 (103070002)
- Gross Alpha and Gross Beta - Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.

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.

Attachment 2
Narrative
WSCF103070

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

Narrative

Attachment 2
Narrative
WSCF103070

From: Widrig, Dana L
Sent: Thursday, December 02, 2010 10:47 AM
To: Medley, Heather A; Avila, Marisol; Kon, Susan L; Westberg, Richard A; Lockrem, Larry L
Cc: Narquis, Clifford T; Neely, Michael; Oneal, Richard E; Crisp, Bryan D; Ayres, Doris E; Mccaughey, Mikael V; Trent, Stephen J
Subject: Project Requested Suite of Analytes - 200.8 Metals 12/02/10

Heather,

Per our conversation, please report the entire suite of 200.8 metals for the SDGs listed below:

WSCF103010 - 183 KW Verification Sampling and Analysis – Soil
WSCF103016 - 183 KW Verification Sampling and Analysis –
WSCF103014 - 183 KW Verification Sampling and Analysis –
WSCF103013 - 183 KW Verification Sampling and Analysis – QC
WSCF103039 - 183 KW Verification Sampling and Analysis – Soil
WSCF103070 - 183 KW Verification Sampling and Analysis – Soil
WSCF103084 - 183 KW Verification Sampling and Analysis – Soil

Rick,

Please initiate a SIR documenting this request, have it signed, and close it out.

Thanks,

Dana

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-001 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 1	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N 507-16	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=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

103070

PRESERVATION	Cool~4C	Cool~4C	None	None	
HOLDING TIME	6 Months	30 Days	6 Months	6 Months	
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P	
NO. OF CONTAINER(S)	1	1	1	1	
VOLUME	250mL	60mL	500mL	250mL	
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	
SAMPLE NO. / MATRIX* / SAMPLE DATE / SAMPLE TIME					
B29D36 / SOIL / NOV 18 2010 / 1015	X	X	X	X	

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010 1430		NOV 18 2010 1450

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

OK

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-045 | PAGE 1 OF 1

COLLECTOR	FM Hall, CHPRC
SAMPLING LOCATION	KW Sed. Basin Sample 2
ICE CHEST NO.	
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	WIDRIG, DL
TELEPHONE NO.	376-2858
PROJECT COORDINATOR	WIDRIG, DL
PRICE CODE	C04
DATA TURNAROUND	3 Days / 12 Days
PROJECT DESIGNATION	183 KW Verification Sampling and Analysis - Soil
SAF NO.	F11-024
AIR QUALITY	
FIELD LOGBOOK NO.	~~HNF-N-607-~~ 16
ACTUAL SAMPLE DEPTH	3'
COA	301962E510
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
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, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - /196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D37 002	SOIL	NOV 18 2010	1643	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	1420 NOV 18 2010		1430 NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-134	PAGE 1 OF 1
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 5	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF -N-507- 10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D40 603	SOIL	NOV 18 2010	1269	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1430		NOV 18 2010 1430

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-138	PAGE 1 OF 1
COLLECTOR: FM Hall	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 6	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-607-16	ACTUAL SAMPLE DEPTH: 3	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SF=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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D41 CC-1	SOIL	NOV 18 2010	1231	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: FM Hall	DATE/TIME: NOV 18 2010 1432	RECEIVED BY/STORED IN: [signature] 1432	DATE/TIME: NOV 18 2010
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-150	PAGE 1 OF 1
COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 9	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.:	FIELD LOGBOOK NO.: ~~HNF-N-607-~~ 162	ACTUAL SAMPLE DEPTH: Surface	COA: 301962CS10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solics, 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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196:	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D44	005	SOIL	NOV 18 2010	1301	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1432		NOV 18 2010 1432

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-005 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: L	
SAMPLING LOCATION: KW Sed. Basin Sample 10	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.	FIELD LOGBOOK NO.: ~~HNF-N-501~~ 42	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None	
HOLDING TIME	6 Months	30 Days	6 Months	6 Months	
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P	
NO. OF CONTAINER(S)	1	1	1	1	
VOLUME	250mL	60mL	500mL	250mL	
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	
SAMPLE NO. B29D45	MATRIX* SOIL	SAMPLE DATE NOV 18 2010	SAMPLE TIME 1314	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010		NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-009 — PAGE 1 OF 1

COLLECTOR: PM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY:	SAMPLING LOCATION: KW Sed. Basin Sample 11
PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-42
ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization
OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D46 007	SOIL	NOV 18 2010	1751	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PM Hall, CHPRC	NOV 18 2010		NOV 19 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-053

PAGE 1 OF 1

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	KW Sed. Basin Sample 21
ICE CHEST NO.	NA
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	WIDRIG, DL
TELEPHONE NO.	376-2858
PROJECT COORDINATOR	WIDRIG, DL
PRICE CODE	C04
DATA TURNAROUND	3 Days / 12 Days
PROJECT DESIGNATION	183 KW Verification Sampling and Analysis - Soil
SAF NO.	F11-024
AIR QUALITY	☐
FIELD LOGBOOK NO.	HNF-N-507-10
ACTUAL SAMPLE DEPTH	3'
COA	301962ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
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		Cool~4C	Cool~4C	None	None
HOLDING TIME		6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER		G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)		1	1	1	1
VOLUME		250mL	60mL	500mL	250mL
SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B29D56 008	SOIL	NOV 18 2010	0935	X	X X X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1130		NOV 18 2010 1130

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-057

PAGE 1 OF 1

COLLECTOR	FM Hall CHPRC
SAMPLING LOCATION	KW Sed. Basin Sample 22
ICE CHEST NO.	NA
SHIPPED TO	Waste Sampling & Characterization
COMPANY CONTACT	WIDRIG, DL
TELEPHONE NO.	376-2858
PROJECT COORDINATOR	WIDRIG, DL
PRICE CODE	C04
AIR QUALITY	☐
DATA TURNAROUND	3 Days / 12 Days
PROJECT DESIGNATION	183 KW Verification Sampling and Analysis - Soil
SAF NO.	F11-024
FIELD LOGBOOK NO.	NF-N-507-16
ACTUAL SAMPLE DEPTH	3'
COA	301962ES10
METHOD OF SHIPMENT	GOVERNMENT VEHICLE
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	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D57	009	SOIL	NOV 18 2010	0905	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010 1436		NOV 18 2010 1436

SPECIAL INSTRUCTIONS
** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

F11-024-061 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 23	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024
AIR QUALITY: ☐			
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D58 010	SOIL	NOV 18 2010	0809	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 18 2010		NOV 18 2010

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6001-513 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-065 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2658	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	AIR QUALITY: ☐	DATA TURNAROUND: 3 Days / 12 Days	
SAMPLING LOCATION: KW Sed. Basin Sample 24	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soi	SAF NO.: F11-024	
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: 3'	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D59	011	SOIL	NOV 18 2010	0837	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall, CHPRC	NOV 18 2010 1436		NOV 18 2010 1436

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Attachment 2
Narrative
WSCF103084

Introduction

Five (5) S&GRP samples were received at the WSCF Laboratory on November 19, 2010. 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. An Issue Resolution Form (CHPRC TRACKING NUMBER 10-273) pertaining to a request for additional 200.8 metals is attached to this report.

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

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):

- Batch QC 170488 analyzed on sample# B29D36 (103070001)

- A Matrix Spike recovery (IMS) was outside the established laboratory limits. Affected sample results in this batch were "N" flagged.
- Duplicate Relative Percent Difference (RPD) does not apply to results near the minimum detectable level. No flags issued on sample results; quality control report was "X" flagged for RPD failure.
- All other 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):

- Batch QC 170116 analyzed on sample# B27779 (103010001)
  - Manganese – Duplicate Relative Percent Difference (RPD) did not meet the laboratory's acceptance criteria. No flags issued on sample results; quality control report was "X" flagged for RPD failure.
  - Manganese – Matrix Spike Duplicate recovery was outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Nickel was detected in the Blank and was evaluated. Affected sample results in this batch were "C" Flagged.
  - Aluminum – 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.

Radiochemistry Comments

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

- Gamma Energy Analysis:
  - Batch QC 170153 analyzed on sample# B29D48 (103084002)
    - The laboratory cannot support the Ra-226 results submitted with gamma energy analysis results in this work order due to the following problems: the container is not brought to an equilibrium condition prior to analysis and the Ra-226 results are impacted by environmental factors in the counting room.
    - All other applicable QC controls are within the established limits.
- Gross Alpha / Gross Beta:

Narrative

Attachment 2
Narrative
WSCF103084

- Batch QC 170174 analyzed on sample# B29D49 (103084003)
- All 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.

Attachment 2
Narrative
WSCF103084

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-273

Date: 12/2/10 SAF No. F11-024

SDG: 103010, 103039, 103070, 103084 TEST: ICPMS_Metals_200.8
DUE DATE: 11/29, 12/1

LOGIN No.: 103010001 – 103010010, 103039001 – 103039011, 103070001 – 103070011, 103084001 – 103084005

Sample No.(s): B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61, B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72, B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59, B29D47, B29D48, B29D49, B29D50, B29D51

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE	PROPOSED RESOLUTION
Received request on 12/2/10 to add all 200.8 metals (see attached email).	Report the following additional 200.8 metals for all samples noted above. Aluminum, cobalt Manganese, copper Nickel, zinc Silver, molybdenum Antimony, strontium Barium, thallium Beryllium, tin Arsenic Since this request was just received, WSCF requests to change the due dates as follows: 103010 to 12/6, 103070 to 12/9 103039 to 12/9, 103084 to 12/9

CHPRC/BHI/WMH/PNNL COMMENTS

Accept proposed resolution.

J. G. Douglas 12/3/2010
Signature and Date

4

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-013 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 12	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-507-	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=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: 103084

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D47	001	SOIL	11-19-10	0735	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	M. Nelson M. Nelson	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory. ☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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ChemVare

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-024-017 PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 13	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-074	AIR QUALITY:
ICE CHEST NO.: NA	FIELD LOGBOOK NO.: HNF-N-507-160	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500ml	250ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D48	002	SOIL	11-19-10	0159	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1155	M. Nelson	NOV 19 2010 1155

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GK1 applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

ORIGINAL

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-021 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY:	SAMPLING LOCATION: KW Sed. Basin Sample 14
PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-507- 22
ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization
OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, Z=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	Cool-4C	Cool-4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196.	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D49	C03	SOIL	11-19-10	0826	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	M Nelson	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-518 (REV 7)

Friday, November 19, 2010 7:29:48 PM
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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-025 — PAGE 1 OF 1

COLLECTOR: FM Hall, CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days	AIR QUALITY: ☐	
SAMPLING LOCATION: KW Sed. Basin Sample 15	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-72	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	Cool<4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D60 DC-1	SOIL	11-19-10	0746	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	M Nelson	NOV 19 2010 1055

LABORATORY SECTION — RECEIVED BY

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

DRAFT

TITLE — DATE/TIME

DISPOSED BY — DATE/TIME

A-6003-918 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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ChemWare

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-024-029 — PAGE 1 OF 1

COLLECTOR: FM Hall CHPRC	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days		
SAMPLING LOCATION: KW Sed. Basin Sample 16	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil	SAF NO.: F11-024	AIR QUALITY: ☐
ICE CHEST NO.:	FIELD LOGBOOK NO.: NA HNF-N-507-10	ACTUAL SAMPLE DEPTH: Surface	COA: 301962ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air; DL=Drum Liquids; DS=Drum Solids; L=Liquid; O=Oil; S=Soil; SE=Sediment; T=Tissue; V=Vegetation; W=Water; WI=Wipe; X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29D51 005	SOIL	11-18-10	0912	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FM Hall CHPRC	NOV 19 2010 1055	N. Nelson Manda	NOV 19 2010 1055

SPECIAL INSTRUCTIONS

** The CACN for WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 2)

Friday, November 19, 2010 7:29:48 PM
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ChemWare

Attachment 2
Narrative
WSCF103268

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on December 7, 2010. The sample was 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. Also is attached an Issue Resolution Form (IRF) pertaining to additional metals analysis and gross alpha/beta discrete analysis was not performed.

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

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):

- Batch QC 170875 analyzed on sample# B29T97 (103268001)

All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF103268

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

- Batch QC 170755 analyzed on sample# B273B5 (103106001)
  - An Issue Resolution Form (CHPRC Tracking Number: 10-280) was issued for sample B29T97 (103268001). Additional metals were added to analysis to be in-line with previous work order requests.
  - Barium and Strontium – Matrix Spike Relative Percent Difference (RPD) outside established laboratory limits. No flags issued.
  - Barium and Strontium – Matrix Spike and Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.
  - Aluminum and 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.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met (Refer to analytical note below). A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gamma Energy Analysis:
  - Batch QC 170844 analyzed on sample# B29T97 (103268001)
    - Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

All applicable QC controls are within the established limits.

- Gross Alpha / Gross Beta:
  - Batch QC 170845 analyzed on sample# B29T97 (103268001)
    - An Issue Resolution Form (CHPRC Tracking Number: 10-280) was issued for sample B29T97 (103268001). In order to meet the TAT for this work order, discrete analysis of gross alpha/beta was not performed.
    - Gross Alpha and Gross Beta – Duplicate Relative Percent Difference (RPD) outside established laboratory limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

Narrative

Attachment 2
Narrative
WSCF103268

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.

Attachment 2
Narrative
WSCF103268

ISSUE RESOLUTION FORM

CHPRC TRACKING NUMBER: 10-280

Date: 12/7/10 SAF No. F11-024

SDG: 103268 TEST: ICPMS_Metals_200.8, Hex Cr, GEA, Gross AB
DUE DATE: 11/29, 12/1

LOGIN No.: 103268001

Sample No.(s): B29T97

Submitted By: Heather Medley
Phone No.: 372-1488
Fax. No.:

Submitted To: S. Champoux
Phone No.: 373-5290
Fax No.:

ISSUE

WSCF received one sample on 12/7/10 for a 3 day/12 day TAT for 200.8, Hex Cr, GEA, and Gross AB. WSCF is unable to support this request.

The metals noted on the COC are not in-line with metals added on previous work orders.

Gross AB – is discrete analysis needed or will a gross alpha/beta be sufficient? Discrete analysis takes a minimum of 4 working days.

PROPOSED RESOLUTION

1. S&GRP shall note what specific metals are needed since previous work orders had metals added after analysis.
2. WSCF will report preliminary results for 200.8, Hex Cr, and GEA analyses by COB Thursday 12/9/10.
3. WSCF to analyze and report gross alpha/beta.

CHPRC/BHI/WMH/PNNL COMMENTS

Report the following additional 200.8 metals for all samples noted above.

Aluminum cobalt Manganese copper Nickel zinc
Silver molybdenum Antimony strontium Barium
thallium Beryllium tin arsenic

Please report the preliminary data package with 200.85, GEA, and Hex Cr data.

Perform the discrete alpha/beta analysis and report that data in the final data package.

Sara Champoux 12/7/2010
Signature and Date

4

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-024-157	PAGE 1 OF 1
COLLECTOR: F. Hall	COMPANY CONTACT: WIDRIG, DI	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DI	PRICE CODE: C04	DATA TURNAROUND: 3 Days / 12 Days
SAMPLING LOCATION: KW Sed. Basin Sample 31 DUP	PROJECT DESIGNATION: 183 KW Verification Sampling and Analysis - Soil		SAF NO.: F11-024	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-10	ACTUAL SAMPLE DEPTH: N/A	COA: 302652 ~~301562910~~ 12/6/10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterzation	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, D=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)

ID3268

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	Cool~4C	None	None
HOLDING TIME	6 Months	30 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	Square Bottle - Poly	G/P
NO. OF CONTAINER(S)	1		1	1
VOLUME	250mL	60mL	500mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS 200.8	Chromium Hex - 7196	SEE ITEM (2) IN SPECIAL INSTRUCTIONS Gamma	SEE ITEM (3) IN SPECIAL INSTRUCTIONS G P/K

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B29T97	SOIL	12/7/10	0730	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME 0910	RECEIVED BY/STORED IN	DATE/TIME 0910
F. Hall	12-7-10	TA Frazier	12-7-10
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 WSCF Analytical is 402114ES20.for use by the laboratory.☐** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Vanadium}; ICP/MS - 200.8 (Add-on) {Lead, Selenium}; 200.8_HG - ICPMS {Mercury};
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-228};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

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

A-6003-618 (REV 3)

Appendix 5

Data Validation Supporting Documentation

Appendix B - Radiochemical Data Validation Checklist

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: 183 KW			DATA PACKAGE: VSR11-031		
VALIDATOR: Eyda Hergenreder		LAB: WSCF		DATE: 03-11-2011	
			SDG: WSCF103010, WSCF103013, WSCF103014, WSCF103039, WSCF103070, WSCF103084, WSCF103268		
ANALYSES PERFORMED					
Gross Alpha/Beta X	Strontium-90	Technetium-99	Alpha Spectroscopy X	Gamma Spectroscopy X	
Total Uranium	Radium-22	Tritium	C-14	I-129	

SAMPLES/MATRIX Water (2) and soil samples

SDG WSCF103010: B29D64, B29D38, B29D39, B29D42, B29D43, B29D52, B29D53, B29D54, B29D55, B29D61
SDG WSCF103013: B29D74 (water)
SDG WSCF103014: B29DM8 (water)
SDG WSCF103039: B29D60, B29D62, B29D63, B29D65, B29D66, B29D67, B29D68, B29D69, B29D70, B29D71, B29D72
SDG WSCF103070: B29D36, B29D37, B29D40, B29D41, B29D44, B29D45, B29D46, B29D56, B29D57, B29D58, B29D59
SDG WSCF103084: B29D47, B29D48, B29D49, B29D50, B29D51
SDG WSCF103268: B29T97

1. Completeness ..... ☐ N/A

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

Comments: None

2. Initial Calibration (Levels D, E) ..... ☒ N/A

Instruments/detectors calibrated? ..... Yes No N/A

Initial calibration acceptable? ..... Yes No N/A

Standards NIST traceable? ..... Yes No N/A

Standards Expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments:

3. Continuing Calibration (Levels D, E)..... ☒ N/A

Calibration checked within required frequency? ..... Yes No N/A

Calibration check acceptable? ..... Yes No N/A

Calibration check standards traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

Calculation check acceptable?..... Yes No N/A

Comments:

4. Background Counts (Levels D, E) ..... ☒ N/A

Background Counts checked within required frequency? ..... Yes No N/A

Background Counts acceptable? ..... Yes No N/A

Calculation check acceptable?..... Yes No N/A

Comments:

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? (Yes) No N/A

Method blank results acceptable? (Yes) No N/A

Analytes detected in method blank? (Yes) No N/A

Field blank(s) analyzed? (Yes) No N/A

Field blank results acceptable? (Yes) No N/A

Analytes detected in field blank(s)? (Yes) No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No (N/A)

Comments:
SDG WSCF103010: batch 169948 Ra-226 0.14 pCi/g; batch 169949 Ra-226 0.098 pCi/g
SDG WSCF103013: Ra-226 90 pCi/L
SDG WSCF103014: Am-241 0.11 pCi/L
SDG WSCF103039: batch 170015 Ra-226 0.098 pCi/g:
batch 170016: Ra-226 0.049 pCi/g, Ra-228 0.088 pCi/g
SDG WSCF103070: batch 170073: Ra-226 0.074 pCi/g; batch 170075: Ra-226 0.071 pCi/g
SDG WSCF103084: Ra-226 0.13 pCi/g
Equipment Blank B29D74: Ra-226 82 pCi/L; Ra-228 82 pCi/L
Equipment Blank B29DM8: Am-241 0.16 pCi/L

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? (Yes) No N/A

LCS/BSS recoveries acceptable? (Yes) No N/A

LCS/BSS traceable? (Levels D,E) Yes No (N/A)

LCS/BSS expired? (Levels D,E) Yes No (N/A)

LCS/BSS levels correct? (Levels D,E) Yes No (N/A)

Transcription/Calculation Errors? (Levels D, E) Yes No (N/A)

Comments: None

7. Chemical Carrier Recovery (Levels C, D, E) ..... ☐ N/A

Chemical carrier added? ..... Yes No (N/A)

Chemical recovery acceptable? ..... Yes No (N/A)

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

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

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

Comments: None

8. Tracer Recovery (Levels C, D, E) ..... ☐ N/A

Tracer added? ..... (Yes) No N/A

Tracer recovery acceptable? ..... (Yes) No N/A

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

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

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

Comments: None

9. Matrix Spikes (Levels C, D, E)..... ☐ N/A

Matrix spike analyzed?..... Yes No (N/A)

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

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

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

Transcription/Calculation Errors? (Levels D, E)..... Yes No (N/A)

Comments: None

10. Duplicates (Levels C, D, E) ..... ☐ N/A

Duplicates Analyzed at required frequency? ..... (Yes) No N/A

RPD Values Acceptable?..... Yes (No) N/A

Transcription/Calculation Errors? (Levels D, E)..... Yes No (N/A)

Comments:

SDG WSCF103070: gross beta smp & dup difference >2X smp MDC

11. Field QC Samples (Levels C, D E) ..... ☐ N/A

Field duplicate sample(s) analyzed? ..... (Yes) No N/A

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

Field split sample(s) analyzed? ..... (Yes) No N/A

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

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

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

Comments:

The field split to sample B29D45 is sample B29RL3 that is located in VSR11-032, SDGs W06065, W06073, H4436, H4443, H4444 and H4456. Precision was not assessed since samples are in separate VSRs.

12. Holding Times (All levels)

Are sample holding times acceptable? ..... (Yes) No N/A

Comments: None

13. Results and Detection Limits (All Levels) ..... ☐ N/A

Results reported for all required sample analyses? ..... (Yes) No N/A

Results supported in raw data?(Levels D, E) ..... Yes No (N/A)

Results Acceptable? (Levels D, E) ..... Yes No (N/A)

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

MDA's meet required detection limits? ..... (Yes) No N/A

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

Comments:

MDCs > CRDLs for associated non-detect sample results

Eu-155 CRDLs = 0.1 pCi/g: B29D39 0.17 pCi/g, B29D42 0.32 pCi/g; B29D52 0.18 pCi/g; B29D54 0.20 pCi/g B29D60 0.17 pCi/g; B29D62 0.21 pCi/g; B29D66 0.17 pCi/g; B29D67 0.28 pCi/g; B29D69 0.21 pCi/g; B29D71 0.21 pCi/g; B29D72 0.18 pCi/g; B29T97 0.40 pCi/g

Eu-152 CRDL= 0.1 pCi/g: B29D67 0.19 pCi/g; B29D71 0.18 pCi/g; B29T97 0.44 pCi/g

Eu-154 CRDL= 0.1 pCi/g: B29D67 0.15 pCi/g; B29D71 0.18 pCi/g; B29T97 0.65 pCi/g

Appendix 6

Additional Documentation Requested By Client

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

QC Batch 169948 **Test** Gamma Energy Analysis-general
Associated Samples 103010001, 103010002, 103010003, 103010004, 103010005, 103010006, 103010007, 103010008, 103010009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42005**								
Cesium-137	10045-97-3		-5.7E-3	pCi/g						U	11/18/10
Cobalt-60	10198-40-0		-4.6E-3	pCi/g						U	11/18/10
Europium-152	14683-23-9		-9.2E-3	pCi/g						U	11/18/10
Europium-154	15585-10-1		7.1E-3	pCi/g						U	11/18/10
Europium-155	14391-16-3		0.020	pCi/g						U	11/18/10
Radium-226	13982-63-3		0.14	pCi/g							11/18/10
Radium-228	15262-20-1		0.012	pCi/g						U	11/18/10
LCS			**QC Sample #42006**								
Cesium-137	10045-97-3		6500	pCi/sample	107.1	80 - 120					11/17/10
Cobalt-60	10198-40-0		10000	pCi/sample	101.8	80 - 120					11/17/10
DUP			**QC Sample #42007**								
			Original 103010001								
Cesium-137	10045-97-3	-4.8E-3	-8.4E-3	pCi/g			-54.80	-30 - 30	*	U	11/18/10
Cobalt-60	10198-40-0	-0.017	-3.8E-3	pCi/g			-126.50	-30 - 30	*	U	11/18/10
Europium-152	14683-23-9	3.7E-3	-5.1E-3	pCi/g			-1276.90	-30 - 30	*	U	11/18/10
Europium-154	15585-10-1	-0.042	-0.043	pCi/g			-5.00	-30 - 30		U	11/18/10
Europium-155	14391-16-3	0.065	0.042	pCi/g			45.50	-30 - 30	*	U	11/18/10
Radium-226	13982-63-3	0.47	0.43	pCi/g			7.10	-30 - 30			11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Radium-228	15262-20-1	0.54	0.69	pCi/g			24.10	-30 - 30		11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

QC Batch 169949
Associated Samples 103010010

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42008**								
Cesium-137	10045-97-3		4.1E-3	pCi/g						U	11/18/10
Cobalt-60	10198-40-0		0.013	pCi/g						U	11/18/10
Europium-152	14683-23-9		-2.4E-3	pCi/g						U	11/18/10
Europium-154	15585-10-1		0.033	pCi/g						U	11/18/10
Europium-155	14391-16-3		-0.024	pCi/g						U	11/18/10
Radium-226	13982-63-3		0.098	pCi/g							11/18/10
Radium-228	15262-20-1		0.051	pCi/g						U	11/18/10
LCS			**QC Sample #42009**								
Cesium-137	10045-97-3		6600	pCi/sample	108.7	80 - 120					11/17/10
Cobalt-60	10198-40-0		11000	pCi/sample	106.3	80 - 120					11/17/10
DUP			**QC Sample #42010**								
			Original 103010010								
Cesium-137	10045-97-3	-5.8E-3	1.2E-3	pCi/g			-302.30	-30 - 30	*	U	11/18/10
Cobalt-60	10198-40-0	-1.6E-3	1.6E-3	pCi/g						U	11/18/10
Europium-152	14683-23-9	0.029	-0.016	pCi/g			661.50	-30 - 30	*	U	11/18/10
Europium-154	15585-10-1	-0.034	0.051	pCi/g			1000.00	-30 - 30	*	U	11/18/10
Europium-155	14391-16-3	-0.020	-0.010	pCi/g			-59.00	-30 - 30	*	U	11/18/10
Radium-226	13982-63-3	0.49	0.42	pCi/g			14.00	-30 - 30			11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Radium-228	15262-20-1	0.41	0.52	pCi/g			20.70	-30 - 30		11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103010

QC Batch 170097 **Test** Gross Alpha/Gross Beta
Associated Samples 103010001, 103010002, 103010003, 103010004, 103010005, 103010006, 103010007, 103010008, 103010009, 103010010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42421**								
Gross Alpha	12587-46-1		-0.16	pCi/g						U	12/01/10
Gross Beta	12587-47-2		-0.082	pCi/g						U	12/01/10
LCS			**QC Sample #42422**								
Gross Alpha	12587-46-1		7.6	pCi/g	92.7	80 - 120					12/01/10
Gross Beta	12587-47-2		24	pCi/g	109.1	80 - 120					12/01/10
DUP			**QC Sample #42423**								
			Original 103010002								
Gross Alpha	12587-46-1	2.0	1.4	pCi/g			32.30	-30 - 30	*	X	12/01/10
Gross Beta	12587-47-2	0.84	0.41	pCi/g			66.70	-30 - 30	*	U	12/01/10

REVISION 1

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103013

QC Batch 169946
Associated Samples 103013001

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #41999**								
Gross Alpha	12587-46-1		0.53	pCi/L						U	11/29/10
Gross Beta	12587-47-2		-1.5	pCi/L						U	11/29/10
LCS			**QC Sample #42000**								
Gross Alpha	12587-46-1		80	pCi/L	97.9	80 - 120					11/29/10
Gross Beta	12587-47-2		250	pCi/L	114.1	80 - 120					11/29/10
DUP			**QC Sample #42001**								
			Original 103013001								
Gross Alpha	12587-46-1	4.5E-3	1.3	pCi/L			198.60	-20 - 20	*	U	11/29/10
Gross Beta	12587-47-2	1.4	-0.053	pCi/L			215.70	-20 - 20	*	U	11/29/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103013

QC Batch 170031
Associated Samples 103013001

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42233**								
Cesium-137	10045-97-3		-3.0	pCi/L						U	11/29/10
Cobalt-60	10198-40-0		-4.8	pCi/L						U	11/29/10
Europium-152	14683-23-9		0.082	pCi/L						U	11/29/10
Europium-154	15585-10-1		-0.86	pCi/L						U	11/29/10
Europium-155	14391-16-3		6.1	pCi/L						U	11/29/10
Radium-226	13982-63-3		90	pCi/L						X	11/29/10
Radium-228	15262-20-1		-42	pCi/L						U	11/29/10
LCS			**QC Sample #42234**								
Cesium-137	10045-97-3		6500	pCi/sample	107.5	80 - 120					11/29/10
Cobalt-60	10198-40-0		10000	pCi/sample	103.3	80 - 120					11/29/10
DUP			**QC Sample #42235**								
			Original 103013001								
Cesium-137	10045-97-3	5.4	4.8	pCi/L			11.80	-20 - 20		U	11/30/10
Cobalt-60	10198-40-0	2.2	1.3	pCi/L			51.40	-20 - 20	*	U	11/30/10
Europium-152	14683-23-9	-12	21	pCi/L			733.30	-20 - 20	*	U	11/30/10
Europium-154	15585-10-1	1.9	-32	pCi/L			-225.20	-20 - 20	*	U	11/30/10
Europium-155	14391-16-3	4.3	-2.4	pCi/L			705.30	-20 - 20	*	U	11/30/10
Radium-226	13982-63-3	82	-8.6	pCi/L			246.90	-20 - 20	*	U	11/30/10

REVISED103013 -

REVISION 1

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103013

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit		RQ	Analyzed
Radium-228	15262-20-1	82	40	pCi/L		68.90	-20 - 20	*	U	11/30/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103014

QC Batch 169939
Associated Samples 103014001

Test Plutonium (AEA)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #41986**								
Plutonium-238	13981-16-3		0.094	pCi/L						U	11/19/10
Americium-241	14596-10-2		0.11	pCi/L						X	11/19/10
Plutonium-239/240	PU-239/240		0.019	pCi/L						U	11/19/10
Uranium-234	U-233/234		0.028	pCi/L						U	11/19/10
Uranium-235	15117-96-1		0.030	pCi/L						U	11/19/10
Uranium-238	U-238		0.046	pCi/L						U	11/19/10
LCS			**QC Sample #41987**								
Americium-241	14596-10-2		5.9	pCi/sample	105.7	80 - 120					11/19/10
Plutonium-239/240	PU-239/240		5.7	pCi/sample	98.2	80 - 120					11/19/10
Uranium-238	U-238		8.6	pCi/sample	101.7	80 - 120					11/19/10
DUP			**QC Sample #41988**								
			Original 103014001								
Americium-241	14596-10-2	0.16	0.039	pCi/L			121.60	-20 - 20	*	U	11/19/10
Plutonium-238	13981-16-3	-0.10	-0.057	pCi/L			-54.80	-20 - 20	*	U	11/19/10
Uranium-234	U-233/234	0.065	0.086	pCi/L			27.80	-20 - 20	*	X	11/19/10
Plutonium-239/240	PU-239/240	2.7E-6	-9.6E-3	pCi/L			-200.10	-20 - 20	*	U	11/19/10
Uranium-235	15117-96-1	0.040	0.073	pCi/L			58.40	-20 - 20	*	U	11/19/10
Uranium-238	U-238	0.037	0.048	pCi/L			25.90	-20 - 20	*	U	11/19/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103014

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #103014001**							
Americium-243 Tracer	14993-75-0				81.9	25 - 105				11/19/10
Uranium-232 Tracer	14158-29-3				91.6	25 - 105				11/19/10
Plutonium-242 Tracer	13982-10-0				90.5	25 - 105				11/22/10
BLANK			**QC Sample #41986**							
Americium-243 Tracer	14993-75-0				83	25 - 105				11/19/10
Uranium-232 Tracer	14158-29-3				95.5	25 - 105				11/19/10
Plutonium-242 Tracer	13982-10-0				83.8	25 - 105				11/19/10
LCS			**QC Sample #41987**							
Americium-243 Tracer	14993-75-0				93.2	25 - 105				11/19/10
Uranium-232 Tracer	14158-29-3				68.4	25 - 105				11/19/10
Plutonium-242 Tracer	13982-10-0				96	25 - 105				11/19/10
DUP			**QC Sample #41988**							
			Original	**103014001**						
Americium-243 Tracer	14993-75-0				92.9	25 - 105	0.00			11/19/10
Uranium-232 Tracer	14158-29-3				86.2	25 - 105	0.00			11/19/10
Plutonium-242 Tracer	13982-10-0				91.3	25 - 105	0.00			11/19/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

QC Batch 170015 **Test** Gamma Energy Analysis-general
Associated Samples 103039001, 103039002, 103039003, 103039004, 103039005, 103039006, 103039007, 103039008, 103039009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42171**								
Cesium-137	10045-97-3		2.2E-3	pCi/g						U	11/18/10
Cobalt-60	10198-40-0		6.5E-3	pCi/g						U	11/18/10
Europium-152	14683-23-9		-0.013	pCi/g						U	11/18/10
Europium-154	15585-10-1		8.7E-3	pCi/g						U	11/18/10
Europium-155	14391-16-3		-1.5E-3	pCi/g						U	11/18/10
Radium-226	13982-63-3		0.098	pCi/g							11/18/10
Radium-228	15262-20-1		0.046	pCi/g						U	11/18/10
LCS			**QC Sample #42172**								
Cesium-137	10045-97-3		6500	pCi/sample	107.5	80 - 120					11/18/10
Cobalt-60	10198-40-0		11000	pCi/sample	106.7	80 - 120					11/18/10
DUP			**QC Sample #42173**								
			Original 103039001								
Cesium-137	10045-97-3	-7.1E-3	-0.015	pCi/g			-71.80	-30 - 30	*	U	11/18/10
Cobalt-60	10198-40-0	-3.7E-3	9.9E-4	pCi/g			-346.20	-30 - 30	*	U	11/18/10
Europium-152	14683-23-9	0.047	4.5E-3	pCi/g			165.90	-30 - 30	*	U	11/18/10
Europium-154	15585-10-1	-0.059	-0.029	pCi/g			-68.30	-30 - 30	*	U	11/18/10
Europium-155	14391-16-3	0.12	0.015	pCi/g			154.80	-30 - 30	*	U	11/18/10
Radium-226	13982-63-3	0.52	0.67	pCi/g			25.50	-30 - 30			11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
Radium-228	15262-20-1	0.57	0.79	pCi/g			33.60	-30 - 30	*	X	11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

QC Batch 170016
Associated Samples 103039010, 103039011

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42174**								
Cesium-137	10045-97-3		1.2E-3	pCi/g						U	11/18/10
Cobalt-60	10198-40-0		1.3E-3	pCi/g						U	11/18/10
Europium-152	14683-23-9		-1.2E-3	pCi/g						U	11/18/10
Europium-154	15585-10-1		-8.5E-3	pCi/g						U	11/18/10
Europium-155	14391-16-3		-0.027	pCi/g						U	11/18/10
Radium-226	13982-63-3		0.047	pCi/g							11/18/10
Radium-228	15262-20-1		0.088	pCi/g							11/18/10
LCS			**QC Sample #42175**								
Cesium-137	10045-97-3		6300	pCi/sample	104.5	80 - 120					11/18/10
Cobalt-60	10198-40-0		10000	pCi/sample	103.6	80 - 120					11/18/10
DUP			**QC Sample #42176**								
			Original 103039010								
Cesium-137	10045-97-3	-6.6E-3	0.019	pCi/g			429.60	-30 - 30	*	U	11/18/10
Cobalt-60	10198-40-0	0.020	-0.013	pCi/g			1000.00	-30 - 30	*	U	11/18/10
Europium-152	14683-23-9	2.7E-3	-0.076	pCi/g			-214.80	-30 - 30	*	U	11/18/10
Europium-154	15585-10-1	-0.092	-0.034	pCi/g			-93.10	-30 - 30	*	U	11/18/10
Europium-155	14391-16-3	0.18	0.072	pCi/g			88.10	-30 - 30	*	U	11/18/10
Radium-226	13982-63-3	0.44	0.43	pCi/g			5.00	-30 - 30			11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Radium-228	15262-20-1	0.71	0.63	pCi/g			12.90	-30 - 30		11/18/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103039

QC Batch 170098 **Test** Gross Alpha/Gross Beta
Associated Samples 103039001, 103039002, 103039003, 103039004, 103039005, 103039006, 103039007, 103039008, 103039009, 103039010, 103039011

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42424**								
Gross Alpha	12587-46-1		0.022	pCi/g						U	12/01/10
Gross Beta	12587-47-2		-0.19	pCi/g						U	12/01/10
LCS			**QC Sample #42425**								
Gross Alpha	12587-46-1		7.2	pCi/g	88	80 - 120					12/01/10
Gross Beta	12587-47-2		25	pCi/g	115.5	80 - 120					12/01/10
DUP			**QC Sample #42426**								
			Original 103039002								
Gross Alpha	12587-46-1	1.2	1.5	pCi/g			24.00	-30 - 30			12/01/10
Gross Beta	12587-47-2	0.80	1.2	pCi/g			46.20	-30 - 30	*	X	12/01/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

QC Batch 170073 **Test** Gamma Energy Analysis-general
Associated Samples 103070001, 103070002, 103070003, 103070004, 103070005, 103070006, 103070007, 103070008, 103070009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42347**								
Cesium-137	10045-97-3		-5.5E-3	pCi/g						U	12/01/10
Cobalt-60	10198-40-0		-2.9E-3	pCi/g						U	12/01/10
Europium-152	14683-23-9		0.017	pCi/g						U	12/01/10
Europium-154	15585-10-1		-0.029	pCi/g						U	12/01/10
Europium-155	14391-16-3		-4.3E-3	pCi/g						U	12/01/10
Radium-226	13982-63-3		0.074	pCi/g							12/01/10
Radium-228	15262-20-1		0.066	pCi/g						U	12/01/10
LCS			**QC Sample #42348**								
Cesium-137	10045-97-3		6400	pCi/sample	105.5	80 - 120					12/01/10
Cobalt-60	10198-40-0		10000	pCi/sample	104.3	80 - 120					12/01/10
DUP			**QC Sample #42349**								
			Original 103070001								
Cesium-137	10045-97-3	-1.5E-3	-3.6E-3	pCi/g			-87.00	30	*	U	11/23/10
Cobalt-60	10198-40-0	-4.9E-3	-2.5E-3	pCi/g			-64.70	30	*	U	11/23/10
Europium-152	14683-23-9	3.3E-4	0.0020	pCi/g			142.90	30	*	U	11/23/10
Europium-154	15585-10-1	4.7E-3	-0.012	pCi/g			-456.70	30	*	U	11/23/10
Europium-155	14391-16-3	0.046	0.041	pCi/g			12.70	30		U	11/23/10
Radium-226	13982-63-3	0.48	0.46	pCi/g			4.70	30			11/23/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Radium-228	15262-20-1	0.50	0.47	pCi/g			4.50	30		11/23/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

QC Batch 170074 **Test** Gross Alpha/Gross Beta
Associated Samples 103070001, 103070002, 103070003, 103070004, 103070005, 103070006, 103070007, 103070008, 103070009, 103070010, 103070011

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42350**								
Gross Alpha	12587-46-1		-0.52	pCi/g						U	12/01/10
Gross Beta	12587-47-2		-0.52	pCi/g						U	12/01/10
LCS			**QC Sample #42351**								
Gross Alpha	12587-46-1		7.1	pCi/g	87.4	80 - 120					12/01/10
Gross Beta	12587-47-2		25	pCi/g	111.4	80 - 120					12/01/10
DUP			**QC Sample #42352**								
			Original 103070002								
Gross Alpha	12587-46-1	2.6	0.97	pCi/g			91.80	30	*	X	12/01/10
Gross Beta	12587-47-2	3.3	1.2	pCi/g			92.70	30	*	X	12/01/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

QC Batch 170075
Associated Samples 103070010, 103070011

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42353**								
Cesium-137	10045-97-3		-3.3E-3	pCi/g						U	11/22/10
Cobalt-60	10198-40-0		0.0020	pCi/g						U	11/22/10
Europium-152	14683-23-9		6.5E-3	pCi/g						U	11/22/10
Europium-154	15585-10-1		-0.021	pCi/g						U	11/22/10
Europium-155	14391-16-3		0.027	pCi/g						U	11/22/10
Radium-226	13982-63-3		0.071	pCi/g							11/22/10
Radium-228	15262-20-1		0.013	pCi/g						U	11/22/10
LCS			**QC Sample #42354**								
Cesium-137	10045-97-3		6500	pCi/sample	107.1	80 - 120					11/22/10
Cobalt-60	10198-40-0		10000	pCi/sample	104.5	80 - 120					11/22/10
DUP			**QC Sample #42355**								
			Original 103070010								
Cesium-137	10045-97-3	0.094	0.075	pCi/g			23.10	30			11/19/10
Cobalt-60	10198-40-0	4.3E-4	-6.9E-3	pCi/g			-227.10	30	*	U	11/19/10
Europium-152	14683-23-9	-0.019	0.022	pCi/g			2466.70	30	*	U	11/19/10
Europium-154	15585-10-1	-8.7E-3	-0.025	pCi/g			-96.80	30	*	U	11/19/10
Europium-155	14391-16-3	9.9E-3	0.013	pCi/g			27.50	30		U	11/19/10
Radium-226	13982-63-3	0.43	0.44	pCi/g			2.50	30			11/19/10

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Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103070

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Radium-228	15262-20-1	0.57	0.61	pCi/g			5.50	30		11/19/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

QC Batch 170153 **Test** Gamma Energy Analysis-general
Associated Samples 103084001, 103084002, 103084003, 103084004, 103084005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #42538**								
Cesium-137	10045-97-3		2.8E-3	pCi/g						U	12/01/10
Cobalt-60	10198-40-0		-2.9E-3	pCi/g						U	12/01/10
Europium-152	14683-23-9		5.1E-3	pCi/g						U	12/01/10
Europium-154	15585-10-1		0.015	pCi/g						U	12/01/10
Europium-155	14391-16-3		-5.4E-3	pCi/g						U	12/01/10
Radium-226	13982-63-3		0.13	pCi/g							12/01/10
Radium-228	15262-20-1		0.046	pCi/g						U	12/01/10
LCS			**QC Sample #42539**								
Cesium-137	10045-97-3		6400	pCi/sample	105.9	80 - 120					12/01/10
Cobalt-60	10198-40-0		10000	pCi/sample	104.4	80 - 120					12/01/10
DUP			**QC Sample #42540**								
			Original 103084002								
Cesium-137	10045-97-3	0.020	0.014	pCi/g			32.30	-30 - 30	*	U	11/30/10
Cobalt-60	10198-40-0	5.6E-3	-1.4E-3	pCi/g			336.80	-30 - 30	*	U	11/30/10
Europium-152	14683-23-9	-0.035	-0.016	pCi/g			-78.30	-30 - 30	*	U	11/30/10
Europium-154	15585-10-1	-0.027	-0.013	pCi/g			-77.80	-30 - 30	*	U	11/30/10
Europium-155	14391-16-3	0.020	-0.029	pCi/g			-1100.00	-30 - 30	*	U	11/30/10
Radium-226	13982-63-3	0.80	0.73	pCi/g			8.70	-30 - 30			11/30/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Radium-228	15262-20-1	0.63	0.66	pCi/g			5.20	-30 - 30		11/30/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103084

QC Batch 170174 **Test** Gross Alpha/Gross Beta
Associated Samples 103084001, 103084002, 103084003, 103084004, 103084005

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #42574**								
Gross Alpha	12587-46-1		0.035	pCi/g						U	12/02/10
Gross Beta	12587-47-2		-0.38	pCi/g						U	12/02/10
LCS			**QC Sample #42575**								
Gross Alpha	12587-46-1		7.7	pCi/g	94.4	80 - 120					12/02/10
Gross Beta	12587-47-2		25	pCi/g	112.8	80 - 120					12/02/10
DUP			**QC Sample #42576**								
			Original 103084003								
Gross Alpha	12587-46-1	2.6	0.71	pCi/g			112.90	-30 - 30	*	U	12/02/10
Gross Beta	12587-47-2	1.8	2.0	pCi/g			11.80	-30 - 30			12/02/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103268

QC Batch 170844
Associated Samples 103268001

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #43494**								
Cesium-137	10045-97-3		-3.6E-3	pCi/g						U	12/08/10
Cobalt-60	10198-40-0		2.4E-3	pCi/g						U	12/08/10
Europium-152	14683-23-9		0.028	pCi/g						U	12/08/10
Europium-154	15585-10-1		-0.037	pCi/g						U	12/08/10
Europium-155	14391-16-3		0.033	pCi/g						U	12/08/10
Radium-228	15262-20-1		0.025	pCi/g						U	12/08/10
LCS			**QC Sample #43495**								
Cesium-137	10045-97-3		6600	pCi/sample	108.7	80 - 120					12/08/10
Cobalt-60	10198-40-0		10000	pCi/sample	100.9	80 - 120					12/08/10
DUP			**QC Sample #43496**								
			Original 103268001								
Cesium-137	10045-97-3	2.8E-5	0.059	pCi/g			199.80	30	*	U	12/08/10
Cobalt-60	10198-40-0	0.051	-0.062	pCi/g			-2120.00	30	*	U	12/08/10
Europium-152	14683-23-9	0.29	0.041	pCi/g			150.60	30	*	U	12/08/10
Europium-154	15585-10-1	-4.4E-3	-0.17	pCi/g			-189.40	30	*	U	12/08/10
Europium-155	14391-16-3	-0.13	-0.028	pCi/g			-126.50	30	*	U	12/08/10
Radium-228	15262-20-1	0.097	0.68	pCi/g			150.20	30	*	U	12/08/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF103268

QC Batch 170845
Associated Samples 103268001

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #43500**								
Gross Alpha	12587-46-1		0.12	pCi/g						U	12/14/10
Gross Beta	12587-47-2		0.053	pCi/g						U	12/14/10
LCS			**QC Sample #43501**								
Gross Alpha	12587-46-1		7.1	pCi/g	87.4	80 - 120					12/14/10
Gross Beta	12587-47-2		25	pCi/g	112.9	80 - 120					12/14/10
DUP			**QC Sample #43746**								
			Original 103268001								
Gross Alpha	12587-46-1	0.93	1.6	pCi/g			53.20	30	*	X	12/14/10
Gross Beta	12587-47-2	1.8	1.2	pCi/g			34.50	30	*	X	12/14/10