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Memorandum

M4W41-SLF-07-164

To: S. J. Trent A0-21 Date: March 21, 2007

From: S. L. Fitzgerald, Manager
WSCF Analytical Chemistry

cc: w/Attachments

T. F. Dale	S3-30	J. E. Trechter	S3-30
H. K. Meznarich	S3-30	D. D. Wright	S3-30
P. D. Mix	S3-30	File/LB	

Subject: FINAL RESULTS FOR AQUIFER TUBE WATER SAMPLES – SAMPLE DELIVERY GROUP WSCF20070290 – SAF NUMBER F07-011

Reference:
(1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEM-001, October 31, 2002
(2) HNF-SD-CD-QAPP-017, Rev. 8, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF20070290:

- Cover Sheet (Attachment 1)
- Narrative (Attachment 2)
- Analytical Results (Attachment 3)
- Sample Receipt Information (Attachment 4)

SLF/grf

Attachments 4

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MAR 2007
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M4W41-SLF-07-164

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20070290
Data Deliverable Date: 05-apr-2007
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
F07-011	B1LMH8	W07GR00303	WATER
	B1LMH9	W07GR00304	WATER
	B1LMN9	W07GR00305	WATER

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ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Sample Delivery Group	**WSCF20070290**
Sample Matrix	**Water**
Sample Visual	**N/A**
SAF Number	**F07-011**
Data Deliverable	**Summary Report**

Introduction

Three (3) Aquifer Tube water samples from the 100-BC-5 Operable Unit were received at the WSCF Laboratory on February 22, 2007. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

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. Copies of the sample receipt and chain of custody documentation are included as Attachment 4.

It should be noted that the attached chain of custody was stamped "iced" and initialed by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the sample container.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 12 through 13, for a complete listing of approved analytical methods.

Inorganic Comments

Alkalinity – The hold time for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 18 for QC details.

All QC controls are within the established limits.

Anions – Hold time requirements were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 19 through 20 for QC details. Analytical Notes:

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1LTT9 (SDG# 20070287, SAF# F06-016).
- B1LMH8 – sample result for Fluoride was B flagged; analyte was less than the reportable limit, however, greater than the method detection limit.

- B1LMH8 – sample results for Chloride, Nitrogen in Nitrate and Sulfate were D flagged (dilution).

All QC controls are within established laboratory limits.

Hexavalent Chromium – The hold time for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 21 for QC details.

All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Matrix Spike, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 22 through 23 for QC details. Analytical Notes:

- Preparation Date: 28-feb-2007.
- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1LTK9 (SDG# 20070245, SAF# F07-015).
- Magnesium – detected in the Blank was evaluated and there was no affect on sample results.
- Calcium, Magnesium and Sodium – insufficient spike concentrations. Sample concentrations were greater than four times the spike concentration.
- An ICP interference check sample was analyzed to ensure linearity and acceptable sample results.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Matrix Spike, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GPP Letter of Instruction. See pages 24 through 26 for QC details. Analytical Notes:

- Preparation Date: 06-mar-2007.
- B1LMH8 and B1LMN9 – Zinc detected in the Blank was evaluated and sample results were C flagged.

All other QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF radiochemical methods. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 30 for QC details. Analytical Note:

- Duplicate and Matrix Spike were analyzed on sample# B1LTT5 (SDG# 20070282, SAF# F06-016).

All QC controls are within the established limits.

This Summary Report is in compliance with the SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the WSCF Laboratory Analytical Manager and Client Services, as verified by the following signature.

Pauline D. Mix
WSCF Client Services

Abbreviations

Hg – mercury
IC – ion chromatography
ICP – inductively coupled plasma
ICP/AES – ICP/atomic emission spectroscopy
ICP/MS – ICP/mass spectrometry
Total U – total uranium
AT/TB – total alpha/total beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
Am – americium
Cm - curium
Pu – plutonium
Np – neptunium
GEA – gamma energy analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
TSS – Total Suspended Solids

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ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 23 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

Groundwater Remediation Program

Richland, WA 99354

Attention: Steve Trent

Analytical: S. Fitzgerald

Client Services: P.D. Mo 3/21/2007

All results are reported on an "as received" basis unless otherwise noted in the comment section.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Contract#: FH-EIS-2003-MEM-001
Report#: WSCF20070290
Report Date: 21-mar-2007
Report WGPP/ver. 5.2
Groundwater Remediation Program

w13qlog v4.2 21-mar-2007 07:25:21

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20070290

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
30998	2	31376	35493	BLANK		Hexavalent chromium
30998	9	31376	35493	BLANK		Hexavalent chromium
30998	3	31376	35493	LCS		Hexavalent chromium
30998	5	31376	35493	DUP	W07GR00303	Hexavalent chromium
30998	6	31376	35493	MS	W07GR00303	Hexavalent chromium
30998	7	31376	35493	MSD	W07GR00303	Hexavalent chromium
30998	4	31376	35493	SAMPLE	W07GR00303	Hexavalent chromium
30998	7	31376	35493	SPK-RPD	W07GR00303	Hexavalent chromium
30998	8	31376	35493	SAMPLE	W07GR00304	Hexavalent chromium
31016	2	31394	35499	BLANK		Anions by Ion Chromatography
31016	9	31394	35499	BLANK		Anions by Ion Chromatography
31016	3	31394	35499	LCS		Anions by Ion Chromatography
31016	5	31394	35499	DUP	W07GR00302	Anions by Ion Chromatography
31016	6	31394	35499	MS	W07GR00302	Anions by Ion Chromatography
31016	7	31394	35499	MSD	W07GR00302	Anions by Ion Chromatography
31016	7	31394	35499	SPK-RPD	W07GR00302	Anions by Ion Chromatography
31016	8	31394	35499	SAMPLE	W07GR00303	Anions by Ion Chromatography
31105	1	31484	35585	BLANK		ICP-200.8 MS All possible meta
31105	2	31484	35585	LCS		ICP-200.8 MS All possible meta
31105	4	31484	35585	MS	W07GR00303	ICP-200.8 MS All possible meta
31105	5	31484	35585	MSD	W07GR00303	ICP-200.8 MS All possible meta
31105	3	31484	35585	SAMPLE	W07GR00303	ICP-200.8 MS All possible meta
31105	5	31484	35585	SPK-RPD	W07GR00303	ICP-200.8 MS All possible meta
31105	6	31484	35585	SAMPLE	W07GR00305	ICP-200.8 MS All possible meta
31116	1	31495	35590	LCS		Total Alkalinity as mg/L CaCO3
31116	14	31495	35590	DUP	W07GR00303	Total Alkalinity as mg/L CaCO3
31116	13	31495	35590	SAMPLE	W07GR00303	Total Alkalinity as mg/L CaCO3
31116	3	31495	35590	DUP	W07P000492	Total Alkalinity as mg/L CaCO3
31056	1	31415	35622	BLANK		ICP Metals Analysis, Grd H20 P
31056	2	31415	35622	LCS		ICP Metals Analysis, Grd H20 P
31056	4	31415	35622	MS	W07GR00268	ICP Metals Analysis, Grd H20 P
31056	5	31415	35622	MSD	W07GR00268	ICP Metals Analysis, Grd H20 P
31056	5	31415	35622	SPK-RPD	W07GR00268	ICP Metals Analysis, Grd H20 P
31056	17	31415	35622	SAMPLE	W07GR00303	ICP Metals Analysis, Grd H20 P
31056	18	31415	35622	SAMPLE	W07GR00305	ICP Metals Analysis, Grd H20 P

w13qlog v4.2 21-mar-2007 07:25:21

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20070290

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
31052	1	31431	35656	BLANK		Tritium by Liq Sct column prep
31052	2	31431	35656	LCS		Tritium by Liq Sct column prep
31052	4	31431	35656	DUP	W07GR00299	Tritium by Liq Sct column prep
31052	3	31431	35656	MS	W07GR00299	Tritium by Liq Sct column prep
31052	8	31431	35656	SAMPLE	W07GR00303	Tritium by Liq Sct column prep
31052	9	31431	35656	SAMPLE	W07GR00304	Tritium by Liq Sct column prep

WSCF
METHOD REFERENCES REPORT

Department: Inorganic

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-265-403 LA-265-403: Hexavalent Chromium analysis by Spectrophotometer

EPA SW-846 7196A	HEXAVALENT CHROMIUM
HEIS 7196_CR6	Hexavalent Chromium

LA-505-411 LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE

HEIS 6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry

LA-505-412 LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY

EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
HEIS 200.8_METALS_ICPMS	Inductively Coupled Plasma - Mass Spectrometry

LA-531-411 LA-531-411: ALKALINITY (TITRIMETRIC)

EPA-600/4-79-020 310.1	ALKALINITY
HEIS 310.1_ALKALINITY	Alkalinity

LA-533-410 LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY

EPA-600/R-94-111 300.0	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY
HEIS 300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-421 LA-508-421: OPERATION OF THE TRI-CARB MODEL 2500TR LIQUID SCINTILLATION ANALYZER

HEIS	**ALPHA_LSC**	A/B Liquid Scintilillation
HEIS	**BETA_LSC**	A/B Liquid Scintilallation
HEIS	**TC99_3MDSK_LSC**	TC99 by Liquid Scintillation
HEIS	**TRITIUM_EIE_LSC**	Tritium Liquid Scintillation

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-011
Sample # W07GR00303
Client ID: B1LMH8 TRENT WSCF

Matrix: WATER

Group #: WSCF20070290
Department: Inorganic
Sampled: 02/22/07
Received: 02/22/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	B	0.0766	mg/L			1.00	6.3e-03		02/22/07
Chloride	16887-00-6	LA-533-410	D	4.97	mg/L			5.00	0.075		02/22/07
Nitrogen in Nitrite	NO2-N	LA-533-410	U	< 0.0100	mg/L			1.00	0.010		02/22/07
Bromide	24959-67-9	LA-533-410	U	< 0.0450	mg/L			1.00	0.045		02/22/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	2.10	mg/L			5.00	0.033		02/22/07
Phosphate (P) by IC	PO4-P	LA-533-410	U	< 0.0280	mg/L			1.00	0.028		02/22/07
Sulfate	14808-79-8	LA-533-410	D	23.2	mg/L			5.00	0.20		02/22/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403		2.60e-03	mg/L			1.00	2.0e-03		02/23/07
ICP Metals Analysis, Grd H20 P Prep											**02/28/07**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		814	ug/L			1.00	9.0		03/01/07
Magnesium	7439-95-4	LA-505-411		6.48e+03	ug/L			1.00	6.0		03/01/07
Potassium	7440-09-7	LA-505-411		2.18e+03	ug/L			1.00	45		03/01/07
Sodium	7440-23-5	LA-505-411		3.23e+03	ug/L			1.00	27		03/01/07
Calcium	7440-70-2	LA-505-411		3.85e+04	ug/L			1.00	34		03/01/07
ICP-200.8 MS All possible meta Prep											**03/06/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		54.7	ug/L			1.00	0.100	0.100	03/06/07
Nickel	7440-02-0	LA-505-412		1.27	ug/L			1.00	0.200	0.300	03/06/07
Silver	7440-22-4	LA-505-412	U	< 0.100	ug/L			1.00	0.100	0.200	03/06/07
Antimony	7440-36-0	LA-505-412	U	< 0.300	ug/L			1.00	0.300	1.50	03/06/07
Barium	7440-39-3	LA-505-412		36.2	ug/L			1.00	0.200	1.00	03/06/07
Beryllium	7440-41-7	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500	0.100	03/06/07

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-011
Sample # W07GR00303
Client ID: B1LMH8 TRENT WSCF

Matrix: WATER

Group #: WSCF20070290
Department: Inorganic
Sampled: 02/22/07
Received: 02/22/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100	0.200	03/06/07
Chromium	7440-47-3	LA-505-412		6.23	ug/L			1.00	0.500	3.50	03/06/07
Cobalt	7440-48-4	LA-505-412		0.944	ug/L			1.00	0.0500	0.100	03/06/07
Vanadium	7440-62-2	LA-505-412		3.63	ug/L			1.00	0.200	2.50	03/06/07
Zinc	7440-66-6	LA-505-412	C	4.36	ug/L			1.00	0.800	1.50	03/06/07
Strontium	7440-24-6	LA-505-412		110	ug/L			1.00	0.100	0.150	03/06/07
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		85.0	mg/L			1.00	1.0		03/05/07

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-011
Sample # W07GR00304
Client ID: B1LMH9 TRENT WSCF

Matrix: WATER

Group #: WSCF20070290
Department: Inorganic
Sampled: 02/22/07
Received: 02/22/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 2.00e-03	mg/L			1.00	2.0e-03		02/23/07

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-011
Sample # W07GR00305
Client ID: B1LMN9 TRENT WSCF

Matrix: WATER

Group #: WSCF20070290
Department: Inorganic
Sampled: 02/22/07
Received: 02/22/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**02/28/07**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411		15.7	ug/L			1.00	9.0		03/01/07
Magnesium	7439-95-4	LA-505-411		5.72e+03	ug/L			1.00	6.0		03/01/07
Manganese	7439-96-5	LA-505-411	U	< 4.00	ug/L			1.00	4.0		03/01/07
Potassium	7440-09-7	LA-505-411		2.04e+03	ug/L			1.00	45		03/01/07
Sodium	7440-23-5	LA-505-411		3.05e+03	ug/L			1.00	27		03/01/07
ICP-200.8 MS All possible meta Prep											**03/06/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		2.04	ug/L			1.00	0.100	0.100	03/06/07
Nickel	7440-02-0	LA-505-412		0.292	ug/L			1.00	0.200	0.300	03/06/07
Silver	7440-22-4	LA-505-412	U	< 0.100	ug/L			1.00	0.100	0.200	03/06/07
Antimony	7440-36-0	LA-505-412		0.308	ug/L			1.00	0.300	1.50	03/06/07
Barium	7440-39-3	LA-505-412		20.0	ug/L			1.00	0.200	1.00	03/06/07
Beryllium	7440-41-7	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500	0.100	03/06/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100	0.200	03/06/07
Chromium	7440-47-3	LA-505-412		2.92	ug/L			1.00	0.500	3.50	03/06/07
Cobalt	7440-48-4	LA-505-412		0.760	ug/L			1.00	0.0500	0.100	03/06/07
Vanadium	7440-62-2	LA-505-412		2.66	ug/L			1.00	0.200	2.50	03/06/07
Zinc	7440-66-6	LA-505-412	C	1.96	ug/L			1.00	0.800	1.50	03/06/07
Strontium	7440-24-6	LA-505-412		95.8	ug/L			1.00	0.100	0.150	03/06/07

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

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D - Analyte was identified at a secondary dilution factor(inorg)
C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 02/22/07
Receive Date:02/22/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR00303											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	85		RPD			0.000	20.000		03/05/07
Lab ID: W07P000492											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	141		RPD			0.712	20.000		03/05/07
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	49.22	109.866	%Recove	80.000	120.000				03/05/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 02/22/07
Receive Date:02/22/07

Lab ID: W07GR00302
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Bromide	24959-67-9	<4.5e-2		RPD			n/a	20.000	U	02/22/07
DUP	Chloride	16887-00-6	7.0838		RPD			1.329	20.000		02/22/07
DUP	Fluoride	16984-48-8	0.1554		RPD			1.342	20.000		02/22/07
DUP	Nitrogen in Nitrite	NO2-N	<1e-2		RPD			n/a	20.000	U	02/22/07
DUP	Nitrogen in Nitrate	NO3-N	2.1686		RPD			1.660	20.000		02/22/07
DUP	Phosphate (P) by IC	PO4-P	<2.8e-2		RPD			n/a	20.000	U	02/22/07
DUP	Sulfate	14808-79-8	26.868		RPD			0.504	20.000		02/22/07
MS	Bromide	24959-67-9	1.8535	93.141	% Recov	75.000	125.000				02/22/07
MS	Chloride	16887-00-6	0.93048	93.516	% Recov	75.000	125.000				02/22/07
MS	Fluoride	16984-48-8	0.4801	95.637	% Recov	75.000	125.000				02/22/07
MS	Nitrogen in Nitrite	NO2-N	0.4996	100.726	% Recov	75.000	125.000				02/22/07
MS	Nitrogen in Nitrate	NO3-N	0.46256	101.885	% Recov	75.000	125.000				02/22/07
MS	Phosphate (P) by IC	PO4-P	0.863	89.990	% Recov	75.000	125.000				02/22/07
MS	Sulfate	14808-79-8	2.0485	102.940	% Recov	75.000	125.000				02/22/07
MSD	Bromide	24959-67-9	1.9073	95.844	% Recov	75.000	125.000				02/22/07
MSD	Chloride	16887-00-6	0.98804	99.301	% Recov	75.000	125.000				02/22/07
MSD	Fluoride	16984-48-8	0.4804	95.697	% Recov	75.000	125.000				02/22/07
MSD	Nitrogen in Nitrite	NO2-N	0.4717	95.101	% Recov	75.000	125.000				02/22/07
MSD	Nitrogen in Nitrate	NO3-N	0.46782	103.044	% Recov	75.000	125.000				02/22/07
MSD	Phosphate (P) by IC	PO4-P	0.8585	89.520	% Recov	75.000	125.000				02/22/07
MSD	Sulfate	14808-79-8	2.0318	102.101	% Recov	75.000	125.000				02/22/07
SPK-RPD	Bromide	24959-67-9	95.844		RPD			2.861	20.000		02/22/07
SPK-RPD	Chloride	16887-00-6	99.301		RPD			6.001	20.000		02/22/07
SPK-RPD	Fluoride	16984-48-8	95.697		RPD			0.063	20.000		02/22/07
SPK-RPD	Nitrogen in Nitrite	NO2-N	95.101		RPD			5.745	20.000		02/22/07
SPK-RPD	Nitrogen in Nitrate	NO3-N	103.044		RPD			1.131	20.000		02/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 02/22/07
Receive Date:02/22/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Phosphate (P) by IC	PO4-P	89.520		RPD			0.524	20.000		02/22/07
SPK-RPD	Sulfate	14808-79-8	102.101		RPD			0.818	20.000		02/22/07
BATCH QC											
BLANK	Bromide	24959-67-9	<4.5e-2	n/a	mg/L	0.000	0.100			U	02/22/07
BLANK	Bromide	24959-67-9	<4.5e-2	n/a	mg/L	0.000	0.100			U	02/22/07
BLANK	Chloride	16887-00-6	<1.5e-2	n/a	mg/L	0.000	0.030			U	02/22/07
BLANK	Chloride	16887-00-6	<1.5e-2	n/a	mg/L	0.000	0.030			U	02/22/07
BLANK	Fluoride	16984-48-8	<6.3e-3	n/a	mg/L	0.000	0.030			U	02/22/07
BLANK	Fluoride	16984-48-8	<6.3e-3	n/a	mg/L	0.000	0.030			U	02/22/07
BLANK	Nitrogen in Nitrite	NO2-N	<1e-2	n/a	mg/L	0.000	0.020			U	02/22/07
BLANK	Nitrogen in Nitrite	NO2-N	<1e-2	n/a	mg/L	0.000	0.020			U	02/22/07
BLANK	Nitrogen in Nitrate	NO3-N	<6.6e-3	n/a	mg/L	0.000	0.040			U	02/22/07
BLANK	Nitrogen in Nitrate	NO3-N	<6.6e-3	n/a	mg/L	0.000	0.040			U	02/22/07
BLANK	Phosphate (P) by IC	PO4-P	<2.8e-2	n/a	mg/L	0.000	0.200			U	02/22/07
BLANK	Phosphate (P) by IC	PO4-P	<2.8e-2	n/a	mg/L	0.000	0.200			U	02/22/07
BLANK	Sulfate	14808-79-8	<4.1e-2	n/a	mg/L	0.000	0.200			U	02/22/07
BLANK	Sulfate	14808-79-8	<4.1e-2	n/a	mg/L	0.000	0.200			U	02/22/07
LCS	Bromide	24959-67-9	410.8469	102.712	% Recov	80.000	120.000				02/22/07
LCS	Chloride	16887-00-6	200.0261	100.013	% Recov	80.000	120.000				02/22/07
LCS	Fluoride	16984-48-8	103.5231	102.498	% Recov	80.000	120.000				02/22/07
LCS	Nitrogen in Nitrite	NO2-N	103.6606	104.077	% Recov	80.000	120.000				02/22/07
LCS	Nitrogen in Nitrate	NO3-N	94.1066	103.187	% Recov	80.000	120.000				02/22/07
LCS	Phosphate (P) by IC	PO4-P	192.9811	100.094	% Recov	80.000	120.000				02/22/07
LCS	Sulfate	14808-79-8	384.1288	96.032	% Recov	80.000	120.000				02/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: Hexavalent chromium

Sample Date: 02/22/07
Receive Date:02/22/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR00303											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.0026		RPD			0.000	15.000		02/23/07
MS	Hexavalent chromium	18540-29-9	0.0537	101.705	% Recov	85.000	115.000				02/23/07
MSD	Hexavalent chromium	18540-29-9	0.0537	101.705	% Recov	85.000	115.000				02/23/07
SPK-RPD	Hexavalent chromium	18540-29-9	101.705		RPD			0.000	20.000		02/23/07
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	02/23/07
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	02/23/07
LCS	Hexavalent chromium	18540-29-9	0.0497	100.000	% Recov	80.000	120.000				02/23/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 02/13/07
Receive Date:02/13/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR00268											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Calcium	7440-70-2	NA	n/a	% Recov	75.000	125.000				03/01/07
MS	Iron	7439-89-6	1002.6	100.260	% Recov	75.000	125.000				03/01/07
MS	Potassium	7440-09-7	10313	103.130	% Recov	75.000	125.000				03/01/07
MS	Magnesium	7439-95-4	NA	n/a	% Recov	75.000	125.000				03/01/07
MS	Sodium	7440-23-5	NA	n/a	% Recov	75.000	125.000				03/01/07
MSD	Calcium	7440-70-2	NA	n/a	% Recov	75.000	125.000				03/01/07
MSD	Iron	7439-89-6	1006.6	100.660	% Recov	75.000	125.000				03/01/07
MSD	Potassium	7440-09-7	10173	101.730	% Recov	75.000	125.000				03/01/07
MSD	Magnesium	7439-95-4	NA	n/a	% Recov	75.000	125.000				03/01/07
MSD	Sodium	7440-23-5	NA	n/a	% Recov	75.000	125.000				03/01/07
SPK-RPD	Calcium	7440-70-2			RPD			n/a	20.000		03/01/07
SPK-RPD	Iron	7439-89-6	100.660		RPD			0.398	20.000		03/01/07
SPK-RPD	Potassium	7440-09-7	101.730		RPD			1.367	20.000		03/01/07
SPK-RPD	Magnesium	7439-95-4			RPD			n/a	20.000		03/01/07
SPK-RPD	Sodium	7440-23-5			RPD			n/a	20.000		03/01/07
BATCH QC											
BLANK	Calcium	7440-70-2	<34	n/a	ug/L					U	03/01/07
BLANK	Iron	7439-89-6	<9	n/a	ug/L					U	03/01/07
BLANK	Potassium	7440-09-7	<45	n/a	ug/L					U	03/01/07
BLANK	Magnesium	7439-95-4	9.8	9.800	ug/L						03/01/07
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	03/01/07
BLANK	Sodium	7440-23-5	<27	n/a	ug/L					U	03/01/07
LCS	Calcium	7440-70-2	988	98.800	% Recov	80.000	120.000				03/01/07
LCS	Iron	7439-89-6	1011	101.100	% Recov	80.000	120.000				03/01/07
LCS	Potassium	7440-09-7	10670	106.700	% Recov	80.000	120.000				03/01/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Magnesium	7439-95-4	1064	106.400	% Recov	80.000	120.000				03/01/07
LCS	Manganese	7439-96-5	1038	103.800	% Recov	80.000	120.000				03/01/07
LCS	Sodium	7440-23-5	1068	106.800	% Recov	80.000	120.000				03/01/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 02/22/07
Receive Date:02/22/07

Lab ID: W07GR00303
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	Silver	7440-22-4	37.66	94.150	% Recov	70.000	130.000				03/06/07
MS	Barium	7440-39-3	37.59	93.975	% Recov	70.000	130.000				03/06/07
MS	Beryllium	7440-41-7	39.28	98.200	% Recov	70.000	130.000				03/06/07
MS	Cadmium	7440-43-9	37.35	93.375	% Recov	70.000	130.000				03/06/07
MS	Cobalt	7440-48-4	38.0565	95.141	% Recov	70.000	130.000				03/06/07
MS	Chromium	7440-47-3	38.841	97.103	% Recov	70.000	130.000				03/06/07
MS	Manganese	7439-96-5	36.9	92.250	% Recov	70.000	130.000				03/06/07
MS	Nickel	7440-02-0	38.217	95.542	% Recov	70.000	130.000				03/06/07
MS	Antimony	7440-36-0	44.36	110.900	% Recov	70.000	130.000				03/06/07
MS	Strontium	7440-24-6	35.2	88.000	% Recov	70.000	130.000				03/06/07
MS	Vanadium	7440-62-2	39.4	98.500	% Recov	70.000	130.000				03/06/07
MS	Zinc	7440-66-6	36.219	90.547	% Recov	70.000	130.000				03/06/07
MSD	Silver	7440-22-4	37.49	93.725	% Recov	70.000	130.000				03/06/07
MSD	Barium	7440-39-3	38.26	95.650	% Recov	70.000	130.000				03/06/07
MSD	Beryllium	7440-41-7	38.99	97.475	% Recov	70.000	130.000				03/06/07
MSD	Cadmium	7440-43-9	37.2	93.000	% Recov	70.000	130.000				03/06/07
MSD	Cobalt	7440-48-4	38.1765	95.441	% Recov	70.000	130.000				03/06/07
MSD	Chromium	7440-47-3	39.041	97.602	% Recov	70.000	130.000				03/06/07
MSD	Manganese	7439-96-5	38.26	95.650	% Recov	70.000	130.000				03/06/07
MSD	Nickel	7440-02-0	38.417	96.043	% Recov	70.000	130.000				03/06/07
MSD	Antimony	7440-36-0	44.03	110.075	% Recov	70.000	130.000				03/06/07
MSD	Strontium	7440-24-6	34.4	86.000	% Recov	70.000	130.000				03/06/07
MSD	Vanadium	7440-62-2	39.36	98.400	% Recov	70.000	130.000				03/06/07
MSD	Zinc	7440-66-6	36.859	92.148	% Recov	70.000	130.000				03/06/07
SPK-RPD	Silver	7440-22-4	93.725		RPD			0.452	20.000		03/06/07
SPK-RPD	Barium	7440-39-3	95.650		RPD			1.767	20.000		03/06/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 02/22/07
Receive Date:02/22/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Beryllium	7440-41-7	97.475		RPD			0.741	20.000		03/06/07
SPK-RPD	Cadmium	7440-43-9	93.000		RPD			0.402	20.000		03/06/07
SPK-RPD	Cobalt	7440-48-4	95.441		RPD			0.315	20.000		03/06/07
SPK-RPD	Chromium	7440-47-3	97.602		RPD			0.513	20.000		03/06/07
SPK-RPD	Manganese	7439-96-5	95.650		RPD			3.619	20.000		03/06/07
SPK-RPD	Nickel	7440-02-0	96.043		RPD			0.523	20.000		03/06/07
SPK-RPD	Antimony	7440-36-0	110.075		RPD			0.747	20.000		03/06/07
SPK-RPD	Strontium	7440-24-6	86.000		RPD			2.299	20.000		03/06/07
SPK-RPD	Vanadium	7440-62-2	98.400		RPD			0.102	20.000		03/06/07
SPK-RPD	Zinc	7440-66-6	92.148		RPD			1.753	20.000		03/06/07

BATCH QC

BLANK	Silver	7440-22-4	<0.1	n/a	ug/L					U	03/06/07
BLANK	Barium	7440-39-3	<0.2	n/a	ug/L					U	03/06/07
BLANK	Beryllium	7440-41-7	<5e-2	n/a	ug/L					U	03/06/07
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	03/06/07
BLANK	Cobalt	7440-48-4	<5e-2	n/a	ug/L					U	03/06/07
BLANK	Chromium	7440-47-3	<0.5	n/a	ug/L					U	03/06/07
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	03/06/07
BLANK	Nickel	7440-02-0	<0.2	n/a	ug/L					U	03/06/07
BLANK	Antimony	7440-36-0	<0.3	n/a	ug/L					U	03/06/07
BLANK	Strontium	7440-24-6	<0.1	n/a	ug/L					U	03/06/07
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L					U	03/06/07
BLANK	Zinc	7440-66-6	1.991	1.991	ug/L						03/06/07
LCS	Silver	7440-22-4	39.51	98.775	% Recov	85.000	115.000				03/06/07
LCS	Barium	7440-39-3	41.2	103.000	% Recov	85.000	115.000				03/06/07
LCS	Beryllium	7440-41-7	40.21	100.525	% Recov	85.000	115.000				03/06/07
LCS	Cadmium	7440-43-9	39.01	97.525	% Recov	85.000	115.000				03/06/07
LCS	Cobalt	7440-48-4	40.05	100.125	% Recov	85.000	115.000				03/06/07
LCS	Chromium	7440-47-3	41.24	103.100	% Recov	85.000	115.000				03/06/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20070290
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Manganese	7439-96-5	41.51	103.775	% Recov	85.000	115.000				03/06/07
LCS	Nickel	7440-02-0	41.19	102.975	% Recov	85.000	115.000				03/06/07
LCS	Antimony	7440-36-0	45.45	113.625	% Recov	85.000	115.000				03/06/07
LCS	Strontium	7440-24-6	41.26	103.150	% Recov	80.000	120.000				03/06/07
LCS	Vanadium	7440-62-2	40.62	101.550	% Recov	85.000	115.000				03/06/07
LCS	Zinc	7440-66-6	40.71	101.775	% Recov	85.000	115.000				03/06/07

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent
Project Number F07-011

Group #: WSCF20070290
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-MS: Zinc prep blank above the MDL and more than 5% of sample results. C-flag ICP-AES: High magnesium preparation blank; no flag; high sample results. Calcium, magnesium, and sodium sample results beyond effective spike range (spike results marked "NA"). High standard and check standard used to ensure linearity for calcium, magnesium, and sodium sample results because they were higher than the calibration standard.

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-011
Sample # W07GR00303
Client ID: B1LMH8 TRENT WSCF

Matrix: WATER

Group #: WSCF20070290
Department: Radiochemistry
Sampled: 02/22/07
Received: 02/22/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	110	pCi/L	+-132	pCi/L	1.00	2.1e+02		03/08/07

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
C - The Analyte was found in the Associated Blank.(inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-011
Sample # W07GR00304
Client ID: B1LMH9 TRENT WSCF

Matrix: WATER

Group #: WSCF20070290
Department: Radiochemistry
Sampled: 02/22/07
Received: 02/22/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		1.20e+03	pCi/L	+-288	pCi/L	1.00	2.1e+02		03/08/07

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
C - The Analyte was found in the Associated Blank.(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20070290
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 02/21/07
Receive Date:02/21/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR00299											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	U-5.9E+01		RPD			n/a	20.000		03/08/07
MS	Tritium	10028-17-8	8360.0	95.556	% Recov	75.000	125.000				03/08/07
BATCH QC											
BLANK	Tritium	10028-17-8	U-5.4E+01	n/a	pCi/L	-10.000	1000.000				03/08/07
LCS	Tritium	10028-17-8	1780.0	94.837	% Recov	80.000	120.000				03/08/07

M4W41-SLF-07-164

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 5 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. BOX 1970 S3-30, Richland, WA 99352
PHONE: (509) 373-7004/FAX: (509) 373-7134

File
04/05/07
tef

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Groundwater Remediation Program

Richland, WA 99354
Attn: Steve Trent

Customer Code: GPP
PO#: 122543/ES10
Group#: 20070290
Project#: F07-011
Proj Mgr: Steve Trent A0-21
Phone: 373-5869

The following samples were received from you on 02/22/07. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
W07GR00303	B1LMH8	TRENT @2008 @GPP6010 @H3-33 @IC-30 ALKALI CR+6	Water	02/22/0
W07GR00304	B1LMH9	TRENT @H3-33 CR+6	Water	02/22/0
W07GR00305	B1LMN9	TRENT @2008 @GPP6010	Water	02/22/0

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@GPP6010	ICP Metals Analysis, Grd H20 P
@H3-33	Tritium by Liq Sct column prep
@IC-30	Anions by Ion Chromatography
ALKALI	Total Alkalinity as mg/L CaCO3
CR+6	Hexavalent chromium

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope/Pfister/Hughes/Wise 04/05/07 20070290	TRENT, SJ	373-5869	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
01-M	AQUIFER TUBE SAMPLING IN THE 100-BC-5 OU		F07-011		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-451-1	122543ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	G/P	aG	G/P	P	G
NO. OF CONTAINER(S)	1	1	1	1	1
VOLUME	500mL	500mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196; *	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex;

ICED
Initial
Date

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B1LMH8 W07GR00303	WATER	2-22-07	1312	✓	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
NM Wise / Hull Pfister	2-22-07 1535	KB K Pope	2/22/07 1535
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
(1)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Beryllium, Strontium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorus in phosphate, Sulfate}

* filtered < 0.45 μm

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope/Pfister/Hughes/Wise	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
03-D	AQUIFER TUBE SAMPLING IN THE 100-BC-5 OU		F07-011		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-451-1	122543ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool 4C	None
TYPE OF CONTAINER	aG	G
NO. OF CONTAINER(S)	1	1
VOLUME	500mL	1000mL
SAMPLE ANALYSIS	Chromium Hex - 7196; *	Tritium - Ion Ex;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B1LMH9 304	WATER	2-22-07	1445	✓	✓

ICED
Date

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
WM Wise/[illegible] 2-22-07	1535	[illegible]	2/22/07 1535

SPECIAL INSTRUCTIONS
* filtered <0.45 µm

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope/Pfister/Hughes/Wise	TRENT, SJ	373-5869	TRENT, SJ	7N	
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
01-M	AQUIFER TUBE SAMPLING IN THE 100-BC-5 OU		F07-011		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-451-1	122543ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization	N/A		N/A		

MATRIX*
A=Air
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POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

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

ICED
Initial
Date

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1LMN9 305	WATER	2/22/07	13:12	1312

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature] 2-22-07	1535	[signature]	2/22/07 1535

SPECIAL INSTRUCTIONS
(1)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Cobalt, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Beryllium, Strontium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
* filtered < 0.45 µm

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