ANALYTICAL QUALITY ASSOCIATES, INC.
616 Maxine NE
Albuquerque, NM 87123
505-299-5201
www.aqainc.net

Data Validation Report for CH2M Hill Plateau Remediation Company

VSR10-014
Projects CPP 200 Area, 200 Area SGRP & 200 Area

Chemical & Radiochemical Validation - Level C

Validation Performed By: Carl Schlosser **Date:** 4-14-2010

Validation Reviewed By: Cheryl A. Schlosser **Date:** 4-14-2010

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Date: 14 April 2010
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: CPP 200 Area, 200 Area SGRP, and 200 Area
Subject: Volatile Organics - Sample Data Groups (SDGs) WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148 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
B23C91	1/13/2010	Water	C	8260B
B23CX6	2/10/2010	Water	C	8260B
B1BJC2	11/22/2004	Water	C	8260B
B1BJC9	11/22/2004	Water	C	8260B
B1BJD9	12/07/2004	Water	C	8260B
B1BJF6	12/07/2004	Water	C	8260B
B1BJH6	1/25/2005	Water	C	8260B
B1BJJ3	1/25/2005	Water	C	8260B
B1D7K5	6/01/2005	Water	C	8260B
B1D7Y4	6/01/2005	Water	C	8260B
B1JX34	10/02/2006	Water	C	8260B
B1JX48	10/02/2006	Water	C	8260B
B1L952	7/12/2007	Water	C	8260B
B1L965	8/13/2007	Water	C	8260B
B1P0W2	8/15/2007	Water	C	8260B
B1P153	8/15/2007	Water	C	8260B
B1P0L8	11/29/2007	Water	C	8260B
B1P117	11/29/2007	Water	C	8260B
B1YMF3	6/29/2009	Water	C	8260B
B21CK6	8/17/2009	Water	C	8260B
B21F31	8/18/2009	Water	C	8260B
B21F32	8/18/2009	Water	C	8260B
B21FV4	9/25/2009	Water	C	8260B

Data validation was conducted in accordance with the CHPRC validation statement of work and the following sampling and analysis plans (SAPs).

Sampling Analysis Plan for Eleven ARRA Wells to Support the 200 West Groundwater Treatment System in Fiscal Year 2010, DOE/RL-2009-95, Rev. 0.

Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network, DOE/RL-2002-17, Rev. 0.

Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant, DOE/RL-2006-19, Rev. 0.

Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006, DOE/RL-2006-46, Rev. 0.

Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit, DOE/RL-2008-57, Rev. 1.

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 volatile organics are analysis within 14 days of sample collection. Sample preservation requires chilling to 4 degrees Celsius and acid preservation with hydrochloric or sulfuric acid to pH <2.

The samples were analyzed within the prescribed holding time 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 WSCF20042209, the toluene laboratory blank result was > the MDL. The toluene result for sample B1BJC2 was a detect (SAP required detection limit not provided) <10X the blank result and should be qualified as a non-detect at the measured sample concentration and flagged "U." The toluene result for sample B1BJC9 was a non-detect and should not be qualified for the blank infraction.

For SDG WSCF20071194, the acetone laboratory blank result was > the MDL. The acetone result for sample B1L952 was a non-detect and should not be qualified for the blank infraction.

For SDG WSCF20071433, the acetone laboratory blank result was > the MDL. The acetone result for sample B1L965 was a non-detect and should not be qualified for the blank infraction.

Trip Blanks

All trip blank results were acceptable with the following exception.

For SDG WSCF20050155, carbon tetrachloride was detected in trip blank B1BJJ3.

Field Blanks

All field blank results were acceptable with the following exceptions.

For SDG WSCF20061212, acetone was detected in field blank B1JX34.

For SDG WSCF20072125, carbon tetrachloride was detected in field blank B1P0L8.

Equipment Blanks

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated by reviewing surrogate results, matrix spike sample results, and laboratory control sample results. According to SAPs DOE/RL-2009-95 and DOE/RL-2008-57, the laboratory control sample accuracy limits are 80% to 120% at a minimum, and the statistical ones established by the analytical laboratory if more stringent. The matrix spike sample accuracy limits are the ones established by the analytical laboratory. According to SAP DOE/RL-2002-17, the laboratory control sample and matrix spike accuracy limits are the ones specified in the associated U.S. EPA analytical procedures. According to SAP DOE/RL-2006-19, the laboratory control sample and matrix spike sample accuracy limits are 75% to 125%. According to SAP DOE/RL-2006-46, the laboratory control sample and matrix spike sample accuracy limits are 80% to 120%. The limits for reported analytes not listed in the SAPs are specified by the DV procedure.

Surrogates

All surrogate recoveries were acceptable.

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

For all SDGs, the only 8260B MS/MSD analytes reported were 1,1-dichloroethene, benzene, chlorobenzene, toluene and trichloroethene. Reported analytes not represented in the MS/MSDs were cis-1,3-dichloropropane, trans-1,3-dichloropropane, 4-methyl-2-pentanone (a.k.a. methyl isobutyl ketone), 2-hexanone, acetone, carbon disulfide, bromodichloromethane and 2-butanone (a.k.a. methyl ethyl ketone). These non-represented analytes should be qualified as estimates and flagged "UJ" for non-detects and "J" for detects. See the table in Appendix 2 for a listing of all affected sample results.

For SDG WSCF20051157, the trip blank was used for the MS/MSD due to the trip blank and field sample bottles being switched.

For SDG WSCF20072125, the field blank was used for the MS/MSD.

Laboratory Control Samples (LCSs)

For all SDGs, the only 8260B LCS analytes reported were 1,1-dichloroethene, benzene, chlorobenzene, toluene and trichloroethene. Reported analytes not represented in the LCSs were cis-1,3-dichloropropane, trans-1,3-dichloropropane, 4-methyl-2-pentanone (a.k.a. methyl isobutyl ketone), 2-hexanone, acetone, carbon disulfide, bromodichloromethane and 2-butanone (a.k.a. methyl ethyl ketone). These non-represented analytes should be qualified as estimates and flagged "UJ" for non-detects and "J" for detects. See the table in Appendix 2 for a listing of all affected sample results.

All LCS recoveries were acceptable with the following exceptions.

For SDG WSCF90895, the LCS recovery for 1,1-dichloroethane was below the SAP lower acceptance limit (but within laboratory limits). The represented SAP analyte chloroform was a detect in sample B21CK6 and should be qualified as an estimate and flagged "J."

For SDG WSCF90900, the LCS recovery for trichloroethene was below the SAP lower acceptance limit (but within laboratory limits). The represented SAP analytes are carbon tetrachloride and trichloroethene. For samples B21F31 and B21F32, the carbon tetrachloride results were detects and should be qualified as estimates and flagged "J," and the trichloroethene results were non-detects and should be qualified as estimates and flagged "UJ."

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to

SAPs DOE/RL-2009-95 and DOE/RL-2008-57, the relative percent difference (RPD) limits are ±20%. According to SAP DOE/RL-2002-17, the RPD limits are the ones specified in the associated U.S. EPA analytical procedures. According to SAP DOE/RL-2006-19, the RPD limits are ±25%. According to SAP DOE/RL-2006-46, the RPD limits are ±20%. 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 required detection limits with differences <1X the required detection limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD relative percent difference values were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

Field Split Samples

No field splits were submitted for analysis.

- **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 WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148 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

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.

For SDG WSCF20051157, the trip blank and field sample bottles were switched and not corrected for on the sample result forms. Results labeled as B1D7Y4 are actually results for

field sample B1D7K5. Results labeled as B1D7K5 (and hand annotated with a "-A" extension) are actually results for trip blank B1D7Y4.

REFERENCES

HNF-20433, Rev. 0, *Data Validation Procedure for Chemical Analyses*, June 2004.

DOE/RL-2009-95, Rev. 0, *Sampling Analysis Plan for Eleven ARRA Wells to Support the 200 West Groundwater Treatment System in Fiscal Year 2010*, November 2009.

DOE/RL-2002-17, Rev. 0, *Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network*, June 2002.

DOE/RL-2006-19, Rev. 0, *Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant*, March 2006.

DOE/RL-2006-46, Rev. 0, *Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006*, August 2006.

DOE/RL-2008-57, Rev. 1, *Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit*, August 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

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

- **U** — The constituent was analyzed for 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 MDL. 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.

- **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

Volatile Organics Data Qualification Summary			
SDG: See Comments	Reviewer: AQA	Project: CPP 200 Area, 200 Area SGRP, and 200 Area	Page 1 of 1
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
cis-1,3-Dichloropropene trans-1,3-Dichloropropene 4-Methyl-2-pentanone (a.k.a. Methyl isobutyl ketone) 2-Hexanone Acetone Carbon disulfide Bromodichloromethane 2-Butanone (a.k.a. Methyl ethyl ketone)	UJ	B23C91, B23CX6, B1BJC2, B1BJC9, B1BJD9, B1BJF6, B1BJH6, B1BJJ3, B1D7K5-A, B1D7Y4, B1JX48, B1L952, B1L965, B1P153, B1P0L8, B1P117, B1YMF3, B21CK6	Non-represented MS/MSD and LCS data
cis-1,3-Dichloropropene trans-1,3-Dichloropropene 4-Methyl-2-pentanone (a.k.a. Methyl isobutyl ketone) 2-Hexanone Carbon disulfide Bromodichloromethane 2-Butanone (a.k.a. Methyl ethyl ketone)	UJ	B1JX34	Non-represented MS/MSD and LCS data
Acetone	J	B1JX34	Non-represented MS/MSD and LCS data
Chloroform	J	B21CK6	Low LCS recovery
Carbon tetrachloride	J	B21F31, B21F32	Low LCS recovery
Trichloroethene	UJ	B21F31, B21F32	Low LCS recovery

Comments: SDGs WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100103

Sample # 100103001
SAF# F10-065
Sample ID B23C91

Matrix WATER
Sampled 01/13/10
Received 01/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**01/18/10**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Toluene	108-88-3	LA-523-455		71		ug/L	1	1	5	01/18/10
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	01/18/10

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

LS
4-14-2010

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100103

Sample # 100103001
SAF# F10-065
Sample ID B23C91

Matrix WATER
Sampled 01/13/10
Received 01/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455		130		ug/L	1	1	5	01/18/10
2-Hexanone	591-78-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
Acetone	67-64-1	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
Chloroform	67-66-3	LA-523-455		14		ug/L	1	1	5	01/18/10
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Chloromethane	74-87-3	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Chloroethane	75-00-3	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Carbon disulfide	75-15-0	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Bromodichloromethane	75-27-4	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1 UJ		ug/L	1	1	5	01/18/10
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	01/18/10
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	01/18/10

LS
4-14-2010

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

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100275

Sample # 100275001
SAF# F10-065
Sample ID B23CX6

Matrix WATER
Sampled 02/10/10
Received 02/10/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**02/12/10**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Trichloroethene	79-01-6	LA-523-455	J	3.8		ug/L	1	1	5	02/12/10
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1	UJ	ug/L	1	1	5	02/12/10
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1	UJ	ug/L	1	1	5	02/12/10
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1	UJ	ug/L	1	1	5	02/12/10
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	02/12/10

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

LS
4-14-2010

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100275

Sample # 100275001
SAF# F10-065
Sample ID B23CX6

Matrix WATER
Sampled 02/10/10
Received 02/10/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455		2200		ug/L	1	100	600	02/17/10
2-Hexanone	591-78-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	02/12/10
Acetone	67-64-1	LA-523-455	U	<1 UJ		ug/L	1	1	5	02/12/10
Chloroform	67-66-3	LA-523-455		6.5		ug/L	1	1	5	02/12/10
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Chloromethane	74-87-3	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Chloroethane	75-00-3	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Carbon disulfide	75-15-0	LA-523-455	U	<1 UJ		ug/L	1	1	5	02/12/10
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Bromodichloromethane	75-27-4	LA-523-455	U	<1 UJ		ug/L	1	1	5	02/12/10
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1 UJ		ug/L	1	1	5	02/12/10
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	02/12/10
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	02/12/10

LS
4-14-2010

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W040002315~~	~~B1BJC2~~	~~TRENT~~	~~91-57-6~~		~~2-Methylnaphthalene~~	~~WATER~~	~~LA-523-456~~	~~U~~	~~< 1.80~~	~~ug/L~~	~~1.00~~	~~1.8~~	~~12/02/04~~	~~11/22/04~~	~~11/22/04~~
W040002315	B1BJC2	TRENT	91-58-7		2-Chloronaphthalene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	91-94-1		3,3'-Dichlorobenzidine	WATER	LA-523-456	U	< 3.90	ug/L	1.00	3.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	95-48-7		2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	95-50-1		1,2-Dichlorobenzene	WATER	LA-523-456	U	< 4.00	ug/L	1.00	4.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	95-95-4		2,4,5-Trichlorophenol	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	98-95-3		Nitrobenzene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	99-09-2		3-Nitroaniline	WATER	LA-523-456	U	< 4.30	ug/L	1.00	4.3	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	65794-96-9		3 & 4 Methylphenol Total	WATER	LA-523-456	U	< 3.00	ug/L	1.00	3.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	67-72-1		Hexachloroethane	WATER	LA-523-456	U	< 5.20	ug/L	1.00	5.2	12/02/04	11/22/04	11/22/04
~~W040002315~~	~~B1BJC2~~	~~TRENT~~	~~88-06-2~~		~~2,4,6-Trichlorophenol~~	~~WATER~~	~~LA-523-456~~	~~U~~	~~< 2.30~~	~~ug/L~~	~~1.00~~	~~2.3~~	~~12/02/04~~	~~11/22/04~~	~~11/22/04~~
W040002315	B1BJC2	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-88-3	1.2U	Toluene	WATER	LA-523-455	BJ	1.20	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

Report WGPP/ver. 1.1
Groundwater Remediation Program

LS
4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002315	B1BJC2	TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455			670	ug/L	1.00	10	12/06/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	67-66-3		Chloroform	WATER	LA-523-455			81.0	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	79-00-5		1,1,2-Trichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	104-51-8		n-Butylbenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	156-60-5		trans-1,2-Dichloroethylene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	156-59-2		cis-1,2-Dichloroethylene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
~~W040002315~~	~~B1BJC2~~	~~TRENT~~	~~TPHDIESEL~~		~~Total Pet. Hydrocarbons Diesel~~	~~WATER~~	~~NWTPH~~	~~U~~	~~<~~	~~74.0~~	~~ug/L~~	~~1.00~~	~~74~~	~~11/30/04~~	~~11/22/04~~	~~11/22/04~~
~~W040002315~~	~~B1BJC2~~	~~TRENT~~	~~TPHKEROSENE~~		~~Kerosene~~	~~WATER~~	~~NWTPH~~	~~U~~	~~<~~	~~74.0~~	~~ug/L~~	~~1.00~~	~~74~~	~~11/30/04~~	~~11/22/04~~	~~11/22/04~~
W040002316	B1BJC9	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	108-88-3		Toluene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but >= the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result		Unit	DF	MDL	Analyze	Sample	Receive
W040002316	B1BJC9	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	67-66-3		Chloroform	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04

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RQ = Result Qualifier

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E - Analyte is an estimate, has potentially larger errors
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002316	B1BJC9	TRENT	79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT	156-59-2	cis-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but >= the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002540	B1BJD9	GRP	TRENT	91-57-6		2-Methylnaphthalene	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	91-58-7		2-Chloronaphthalene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	91-94-1		3,3'-Dichlorobenzidine	WATER	LA-523-456	U	< 3.90	ug/L	1.00	3.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	95-48-7		2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	95-50-1		1,2-Dichlorobenzene	WATER	LA-523-456	U	< 4.00	ug/L	1.00	4.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	95-95-4		2,4,5-Trichlorophenol	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	98-95-3		Nitrobenzene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	99-09-2		3-Nitroaniline	WATER	LA-523-456	U	< 4.30	ug/L	1.00	4.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	65794-96-9		3 & 4 Methylphenol Total	WATER	LA-523-456	U	< 3.00	ug/L	1.00	3.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	67-72-1		Hexachloroethane	WATER	LA-523-456	U	< 5.20	ug/L	1.00	5.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	88-06-2		2,4,6-Trichlorophenol	WATER	LA-523-456	U	< 2.30	ug/L	1.00	2.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-88-3		Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #		Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002540	B1BJD9	GRP	TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455			640	ug/L	1.00	10	12/14/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	67-66-3		Chloroform	WATER	LA-523-455			17.0	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	79-00-5		1,1,2-Trichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	104-51-8		n-Butylbenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	156-60-5		trans-1,2-Dichloroethylene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	156-59-2		cis-1,2-Dichloroethylene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
~~W040002540~~	~~B1BJD9~~	~~GRP~~	~~TRENT~~	~~TPHDIESEL~~		~~Total Pet. Hydrocarbons-Diesel~~	~~WATER~~	~~NWTPH~~	~~U~~	~~<~~	~~72.0~~	~~ug/L~~	~~1.00~~	~~72~~	~~12/07/04~~	~~12/07/04~~	~~12/07/04~~
~~W040002540~~	~~B1BJD9~~	~~GRP~~	~~TRENT~~	~~TPHKEROSENE~~		~~Kerosene~~	~~WATER~~	~~NWTPH~~	~~U~~	~~<~~	~~72.0~~	~~ug/L~~	~~1.00~~	~~72~~	~~12/07/04~~	~~12/07/04~~	~~12/07/04~~
W040002544	B1BJF6	GRP	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	108-88-3		Toluene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002544	B1BJF6	GRP	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	67-66-3		Chloroform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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Report WGPP/ver. 1.1
Groundwater Remediation Program

LS
4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002544	B1BJF6	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04

MDL=Minimum Detection Limit B - The analyte < the RDL but >= the IDL/MDL (inorganic) U - Analyzed for but not detected above limiting criteria.
RQ=Result Qualifier

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~91-57-6~~		~~2-Methylnaphthalene~~	~~WATER~~	~~LA-523-456~~	~~U~~	~~<~~	~~2.20~~	~~ug/L~~	~~1.00~~	~~2.2~~	~~02/02/05~~	~~01/25/05~~	~~01/25/05~~
W050000144	B1BJH6	TRENT	91-58-7		2-Chloronaphthalene	WATER	LA-523-456	U	<	2.70	ug/L	1.00	2.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	91-94-1		3,3'-Dichlorobenzidine	WATER	LA-523-456	U	<	4.80	ug/L	1.00	4.8	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	95-48-7		2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	<	2.70	ug/L	1.00	2.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	95-50-1		1,2-Dichlorobenzene	WATER	LA-523-456	U	<	4.90	ug/L	1.00	4.9	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	95-95-4		2,4,5-Trichlorophenol	WATER	LA-523-456	U	<	2.20	ug/L	1.00	2.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	98-95-3		Nitrobenzene	WATER	LA-523-456	U	<	2.40	ug/L	1.00	2.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	99-09-2		3-Nitroaniline	WATER	LA-523-456	U	<	5.30	ug/L	1.00	5.3	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	65794-96-9		3 & 4 Methylphenol Total	WATER	LA-523-456	U	<	3.80	ug/L	1.00	3.8	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	67-72-1		Hexachloroethane	WATER	LA-523-456	U	<	6.50	ug/L	1.00	6.5	02/02/05	01/25/05	01/25/05
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~88-06-2~~		~~2,4,6-Trichlorophenol~~	~~WATER~~	~~LA-523-456~~	~~U~~	~~<~~	~~2.00~~	~~ug/L~~	~~1.00~~	~~2.0~~	~~02/02/05~~	~~01/25/05~~	~~01/25/05~~
W050000144	B1BJH6	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455			22.0	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-88-3		Toluene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05

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RQ = Result Qualifier

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J - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
C - The Analyte was found in the Associated Blank.
U - Analyzed for but not detected above limiting criteria.

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000144	B1BJH6	TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455		1.60e+03	ug/L	1.00	20	02/08/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	67-66-3		Chloroform	WATER	LA-523-455		37.0	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	79-00-5		1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	104-51-8		n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	156-60-5		trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	156-59-2		cis-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~TPHDIESEL~~		~~Total Pet. Hydrocarbons Diesel~~	~~WATER~~	~~NWTPH~~	~~U~~	~~< 87.0~~	~~ug/L~~	~~1.00~~	~~87~~	~~02/01/05~~	~~01/25/05~~	~~01/25/05~~
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~TPHKEROSENE~~		~~Kerosene~~	~~WATER~~	~~NWTPH~~	~~U~~	~~< 87.0~~	~~ug/L~~	~~1.00~~	~~87~~	~~02/01/05~~	~~01/25/05~~	~~01/25/05~~
W050000148	B1BJJ3	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	108-88-3		Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result		Unit	DF	MDL	Analyze	Sample	Receive
W050000148	B1BJJ3	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455	J		3.70	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	67-66-3		Chloroform	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000148	B1BJJ3	TRENT	79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	156-59-2	cis-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05

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RQ=Result Qualifier

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DF=Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W050001669~~	~~B1D7K5~~	~~TRENT~~	~~91-57-6~~		~~2-Methylnaphthalene~~	~~WATER~~	~~LA-523-456~~	~~U~~	~~<~~	~~3.80~~	~~ug/L~~	~~1.00~~	~~3.8~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~
W050001669	B1D7K5	TRENT	91-58-7		2-Chloronaphthalene	WATER	LA-523-456	U	<	3.80	ug/L	1.00	3.8	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	91-94-1		3,3'-Dichlorobanzidine	WATER	LA-523-456	U	<	0.990	ug/L	1.00	0.99	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	95-48-7		2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	<	0.240	ug/L	1.00	0.24	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	95-50-1		1,2-Dichlorobenzene	WATER	LA-523-456	U	<	1.40	ug/L	1.00	1.4	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	95-95-4		2,4,5-Trichlorophenol	WATER	LA-523-456	U	<	0.780	ug/L	1.00	0.78	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	98-95-3		Nitrobenzene	WATER	LA-523-456	U	<	0.930	ug/L	1.00	0.93	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	99-09-2		3-Nitroaniline	WATER	LA-523-456	U	<	0.440	ug/L	1.00	0.44	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	65794-96-9		3 & 4 Methylphenol Total	WATER	LA-523-456	U	<	0.620	ug/L	1.00	0.62	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	67-72-1		Haxachloroethane	WATER	LA-523-456	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
~~W050001669~~	~~B1D7K5~~	~~TRENT~~	~~88-06-2~~		~~2,4,6-Trichlorophenol~~	~~WATER~~	~~LA-523-456~~	~~U~~	~~<~~	~~0.480~~	~~ug/L~~	~~1.00~~	~~0.48~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~
W050001669	B1D7K5-A	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	108-88-3		Toluene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	<	1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05

Dayes 3/2/07

MDL = Minimum Detection Limit
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REVISED Dayes 3/2/07

LS 4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID	CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050001669	B1D7K5-A TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	67-66-3		Chloroform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	79-00-5		1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	104-51-8		n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	156-60-5		trens-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A TRENT	156-59-2		cis-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
~~W050001669~~	~~B1D7K5 TRENT~~	~~TPHDIESEL~~		~~Total Pet. Hydrocarbons Diesel~~	~~WATER~~	~~NWTPH~~	~~U~~	~~< 72.0~~	~~ug/L~~	~~1.00~~	~~1.2e+02~~	~~06/09/05~~	~~06/01/05~~	~~06/01/05~~
~~W050001669~~	~~B1D7K5 TRENT~~	~~TPHKEROSENE~~		~~Kerosene~~	~~WATER~~	~~NWTPH~~	~~U~~	~~< 72.0~~	~~ug/L~~	~~1.00~~	~~1.2e+02~~	~~06/09/05~~	~~06/01/05~~	~~06/01/05~~
W050001670	B1D7Y4 TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4 TRENT	79-01-6		Trichloroethene	WATER	LA-523-455		5.40	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4 TRENT	71-43-2		Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4 TRENT	108-88-3		Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4 TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05

DNyles 3/2/07

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050001670	B1D7Y4	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	10061-01-5	UJ	cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	10061-02-6	UJ	trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	108-10-1	UJ	4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	56-23-5		Carbon tetrachloride	WATER	LA-523-455		900	ug/L	1.00	10	06/14/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	591-78-6	UJ	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	67-64-1	UJ	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	67-66-3		Chloroform	WATER	LA-523-455		13.0	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	71-55-6		1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	74-83-9		Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	79-34-5		1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	74-87-3		Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	75-00-3		Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	75-01-4		Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	75-09-2		Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	75-15-0	UJ	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	75-25-2		Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	75-27-4	UJ	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	78-87-5		1,2-Dichloropropane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	78-93-3	UJ	2-Butanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050001670	B1D7Y4	TRENT	79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	156-59-2	cis-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05

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<5
4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent A0-21
SAF Number: F06-022
Sample # W060003427
Client ID: B1JX34 TRENT WSCF

Matrix: WATER

Group #: WSCF20061212
Department: Organic
Sampled: 10/02/06
Received: 10/02/06

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection												
1,1-Dichloroethene		75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Trichloroethene		79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Benzene		71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Toluene		108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Chlorobenzene		108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,1-Dichloroethane		75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Ethylbenzene		100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Styrene		100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
cis-1,3-Dichloropropene	UJ	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
trans-1,3-Dichloropropene	UJ	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,2-Dichloroethane		107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
4-Methyl-2-Pentanone	UJ	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Dibromochloromethane		124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Tetrachloroethene		127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Xylenes (total)		1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,2-Dichloroethene(Total)		540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Carbon tetrachloride		56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
2-Hexanone	UJ	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Acetone	J	67-64-1	LA-523-455		20.0	ug/L			1.00	1.0		10/16/06
Chloroform		67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,1,1-Trichloroethane		71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Bromomethane		74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,1,2,2-Tetrachloroethane		79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Chloromethane		74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
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U - Analyzed for but not detected above limiting criteria(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent A0-21
SAF Number: F06-022
Sample # W060003427
Client ID: B1JX34 TRENT WSCF

Matrix: WATER

Group #: WSCF20061212
Department: Organic
Sampled: 10/02/06
Received: 10/02/06

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane		75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Vinyl chloride		75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Methylenechloride		75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Carbon disulfide	UJ	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Bromoform		75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Bromodichloromethane	UJ	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,2-Dichloropropane		78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
2-Butanone	UJ	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,1,2-Trichloroethane		79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06

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MDL = Minimum Detection Limit
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4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent A0-21
SAF Number: F06-022
Sample # W060003428
Client ID: B1JX48 TRENT WSCF

Matrix: WATER

Group #: WSCF20061212
Department: Organic
Sampled: 10/02/06
Received: 10/02/06

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection												
1,1-Dichloroethene		75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Trichloroethene		79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Benzene		71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Toluene		108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Chlorobenzene		108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,1-Dichloroethane		75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Ethylbenzene		100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Styrene		100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
cis-1,3-Dichloropropene	UJ	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
trans-1,3-Dichloropropene	UJ	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,2-Dichloroethane		107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
4-Methyl-2-Pentanone	UJ	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Dibromochloromethane		124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Tetrachloroethene		127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Xylenes (total)		1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,2-Dichloroethene(Total)		540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Carbon tetrachloride		56-23-5	LA-523-455		76.0	ug/L			1.00	1.0		10/16/06
2-Hexanone	UJ	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Acetone	UJ	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Chloroform		67-66-3	LA-523-455	J	4.70	ug/L			1.00	1.0		10/16/06
1,1,1-Trichloroethane		71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Bromomethane		74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,1,2,2-Tetrachloroethane		79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Chloromethane		74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06

MDL = Minimum Detection Limit
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent A0-21
SAF Number: F06-022
Sample # W060003428
Client ID: B1JX48 TRENT WSCF

Matrix: WATER

Group #: WSCF20061212
Department: Organic
Sampled: 10/02/06
Received: 10/02/06

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane		75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Vinyl chloride		75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Methylenechloride		75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Carbon disulfide	UJ	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Bromoform		75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
Bromodichloromethane	UJ	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,2-Dichloropropane		78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
2-Butanone	UJ	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06
1,1,2-Trichloroethane		79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		10/16/06

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LS
4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-006
Sample # W07GR01755
Client ID: B1L952 TRENT WSCF

Matrix: WATER

Group #: WSCF20071194
Department: Organic
Sampled: 07/12/07
Received: 07/12/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection												
1,1-Dichloroethene		75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Trichloroethene		79-01-6	LA-523-455		6.10	ug/L			1.00	1.0		07/24/07
Benzene		71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Toluene		108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Chlorobenzene		108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
1,1-Dichloroethane		75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Ethylbenzene		100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Styrene		100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
cis-1,3-Dichloropropene	UJ	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
trans-1,3-Dichloropropene	UJ	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
1,2-Dichloroethane		107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
4-Methyl-2-Pentanone	UJ	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Dibromochloromethane		124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Tetrachloroethene		127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Xylenes (total)		1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
1,2-Dichloroethene(Total)		540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Carbon tetrachloride		56-23-5	LA-523-455		1.20e+03	ug/L			1.00	10		07/26/07
2-Hexanone	UJ	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Acetone	UJ	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Chloroform		67-66-3	LA-523-455		46.0	ug/L			1.00	1.0		07/24/07
1,1,1-Trichloroethane		71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Bromomethane		74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
1,1,2,2-Tetrachloroethane		79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Chloromethane		74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07

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)
U - Analyzed for but not detected above limiting criteria.(org)
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: F07-006
Sample # W07GR01755
Client ID: B1L952 TRENT WSCF

Matrix: WATER

Group #: WSCF20071194
Department: Organic
Sampled: 07/12/07
Received: 07/12/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane		75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Vinyl chloride		75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Methylenechloride		75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Carbon disulfide	UJ	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Bromoform		75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
Bromodichloromethane	UJ	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
1,2-Dichloropropane		78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
2-Butanone	UJ	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07
1,1,2-Trichloroethane		79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		07/24/07

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4-14-2010

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L5
4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-006
Sample # W07GR02135
Client ID: B1L965 TRENT WSCF

Matrix: WATER

Group #: WSCF20071433
Department: Organic
Sampled: 08/13/07
Received: 08/13/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection												
1,1-Dichloroethene		75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Trichloroethene		79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Benzene		71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Toluene		108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Chlorobenzene		108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
1,1-Dichloroethane		75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Ethylbenzene		100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Styrene		100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
cis-1,3-Dichloropropene	UJ	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
trans-1,3-Dichloropropene	UJ	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
1,2-Dichloroethane		107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
4-Methyl-2-Pentanone	UJ	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Dibromochloromethane		124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Tetrachloroethene		127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Xylenes (total)		1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
1,2-Dichloroethene(Total)		540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Carbon tetrachloride		56-23-5	LA-523-455		8.10	ug/L			1.00	1.0		08/22/07
2-Hexanone	UJ	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Acetone	UJ	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Chloroform		67-66-3	LA-523-455	J	2.10	ug/L			1.00	1.0		08/22/07
1,1,1-Trichloroethane		71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Bromomethane		74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
1,1,2,2-Tetrachloroethane		79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Chloromethane		74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07

MDL = Minimum Detection Limit
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C - The Analyte was found in the Associated Blank.(inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-006
Sample # W07GR02135
Client ID: B1L965 TRENT WSCF

Matrix: WATER

Group #: WSCF20071433
Department: Organic
Sampled: 08/13/07
Received: 08/13/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane		75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Vinyl chloride		75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Methylenechloride		75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Carbon disulfide	UJ	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Bromoform		75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
Bromodichloromethane	UJ	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
1,2-Dichloropropane		78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
2-Butanone	UJ	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07
1,1,2-Trichloroethane		79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/22/07

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4-14-2010

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR02158
Client ID: B1P0W2 TRENT WSCF

Matrix: WATER

Group #: WSCF20071455
Department: Organic
Sampled: 08/15/07
Received: 08/15/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Chloroform	67-66-3	LA-523-455	J	1.30	ug/L			1.00	1.0		08/16/07

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

LS
4-14-2010

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR02159
Client ID: B1P153 TRENT WSCF

Matrix: WATER

Group #: WSCF20071455
Department: Organic
Sampled: 08/15/07
Received: 08/15/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection												
1,1-Dichloroethene		75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Trichloroethene		79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Benzene		71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Toluene		108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Chlorobenzene		108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
1,1-Dichloroethane		75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Ethylbenzene		100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Styrene		100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
cis-1,3-Dichloropropene	UJ	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
trans-1,3-Dichloropropene	UJ	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
1,2-Dichloroethane		107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
4-Methyl-2-Pentanone	UJ	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Dibromochloromethane		124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Tetrachloroethene		127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Xylenes (total)		1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
1,2-Dichloroethene(Total)		540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Carbon tetrachloride		56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
2-Hexanone	UJ	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Acetone	UJ	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Chloroform		67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
1,1,1-Trichloroethane		71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Bromomethane		74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
1,1,2,2-Tetrachloroethane		79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Chloromethane		74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR02159
Client ID: B1P153 TRENT WSCF

Matrix: WATER

Group #: WSCF20071455
Department: Organic
Sampled: 08/15/07
Received: 08/15/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane		75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Vinyl chloride		75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Methylenechloride		75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Carbon disulfide	UJ	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Bromoform		75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
Bromodichloromethane	UJ	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
1,2-Dichloropropane		78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
2-Butanone	UJ	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07
1,1,2-Trichloroethane		79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		08/16/07

LS
4-14-2010

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

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<2S
4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR03134
Client ID: B1P0L8 TRENT WSCF

Matrix: WATER

Group #: WSCF20072125
Department: Organic
Sampled: 11/29/07
Received: 11/29/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection												
1,1-Dichloroethene		75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Trichloroethene		79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Benzene		71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Toluene		108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Chlorobenzene		108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,1-Dichloroethane		75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Ethylbenzene		100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Styrene		100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
cis-1,3-Dichloropropene	UJ	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
trans-1,3-Dichloropropene	UJ	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,2-Dichloroethane		107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
4-Methyl-2-Pentanone	UJ	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Dibromochloromethane		124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Tetrachloroethene		127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Xylenes (total)		1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,2-Dichloroethene(Total)		540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Carbon tetrachloride		56-23-5	LA-523-455	J	1.90	ug/L			1.00	1.0		12/05/07
2-Hexanone	UJ	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Acetone	UJ	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Chloroform		67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,1,1-Trichloroethane		71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Bromomethane		74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,1,2,2-Tetrachloroethane		79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Chloromethane		74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
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: F07-052
Sample # W07GR03134
Client ID: B1P0L8 TRENT WSCF

Matrix: WATER

Group #: WSCF20072125
Department: Organic
Sampled: 11/29/07
Received: 11/29/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane		75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Vinyl chloride		75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Methylenechloride		75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Carbon disulfide	UJ	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Bromoform		75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Bromodichloromethane	UJ	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,2-Dichloropropane		78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
2-Butanone	UJ	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,1,2-Trichloroethane		79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07

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4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier
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4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR03135
Client ID: B1P117 TRENT WSCF

Matrix: WATER

Group #: WSCF20072125
Department: Organic
Sampled: 11/29/07
Received: 11/29/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection												
1,1-Dichloroethene		75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Trichloroethene		79-01-6	LA-523-455	J	2.10	ug/L			1.00	1.0		12/05/07
Benzene		71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Toluene		108-88-3	LA-523-455	J	1.40	ug/L			1.00	1.0		12/05/07
Chlorobenzene		108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,1-Dichloroethane		75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Ethylbenzene		100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Styrene		100-42-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
cis-1,3-Dichloropropene	UJ	10061-01-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
trans-1,3-Dichloropropene	UJ	10061-02-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,2-Dichloroethane		107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
4-Methyl-2-Pentanone	UJ	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Dibromochloromethane		124-48-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Tetrachloroethene		127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Xylenes (total)		1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,2-Dichloroethene(Total)		540-59-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Carbon tetrachloride		56-23-5	LA-523-455		1.10e+03	ug/L			1.00	25		12/10/07
2-Hexanone	UJ	591-78-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Acetone	UJ	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Chloroform		67-66-3	LA-523-455		11.0	ug/L			1.00	1.0		12/05/07
1,1,1-Trichloroethane		71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Bromomethane		74-83-9	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,1,2,2-Tetrachloroethane		79-34-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Chloromethane		74-87-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07

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)
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR03135
Client ID: B1P117 TRENT WSCF

Matrix: WATER

Group #: WSCF20072125
Department: Organic
Sampled: 11/29/07
Received: 11/29/07

Test Performed		CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Chloroethane		75-00-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Vinyl chloride		75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Methylenechloride		75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Carbon disulfide	UJ	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Bromoform		75-25-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
Bromodichloromethane	UJ	75-27-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,2-Dichloropropane		78-87-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
2-Butanone	UJ	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07
1,1,2-Trichloroethane		79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		12/05/07

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4-14-2010

MDL=Minimum Detection Limit
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U - Analyzed for but not detected above limiting criteria(inorg)

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WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90678
Project Number F09-009

Sample # 90678001
SAF# F09-009
Sample ID B1YMF3

Matrix WATER
Sampled 06/29/09
Received 06/29/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**06/30/09**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Trichloroethene	79-01-6	LA-523-455	J	4.0		ug/L	1	1	5	06/30/09
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1	UJ	ug/L	1	1	5	06/30/09
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1	UJ	ug/L	1	1	5	06/30/09
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1	UJ	ug/L	1	1	5	06/30/09
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Tetrachloroethene	127-18-4	LA-523-455	J	1.3		ug/L	1	1	5	06/30/09
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	06/30/09

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

LS 4-14-2010

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90678
Project Number F09-009

Sample # 90678001
SAF# F09-009
Sample ID B1YMF3

Matrix WATER
Sampled 06/29/09
Received 06/29/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455		940		ug/L	1	10	50	07/01/09
2-Hexanone	591-78-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	06/30/09
Acetone	67-64-1	LA-523-455	U	<1 UJ		ug/L	1	1	5	06/30/09
Chloroform	67-66-3	LA-523-455		120		ug/L	1	1	5	06/30/09
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Chloromethane	74-87-3	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Chloroethane	75-00-3	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Methylene chloride	75-09-2	LA-523-455	J	2.8		ug/L	1	1	5	06/30/09
Carbon disulfide	75-15-0	LA-523-455	U	<1 UJ		ug/L	1	1	5	06/30/09
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Bromodichloromethane	75-27-4	LA-523-455	U	<1 UJ		ug/L	1	1	5	06/30/09
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1 UJ		ug/L	1	1	5	06/30/09
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	06/30/09
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	06/30/09

LS
4-14-2010

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90895

Sample # 90895001
SAF# F09-043
Sample ID B21CK6

Matrix WATER
Sampled 08/17/09
Received 08/17/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**08/19/09**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Trichloroethene	79-01-6	LA-523-455	J	3.0		ug/L	1	1	5	08/20/09
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
1,1-Dichloroethane	75-34-3	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Styrene	100-42-5	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
cis-1,3-Dichloropropene	10061-01-5	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
trans-1,3-Dichloropropene	10061-02-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
1,2-Dichloroethane	107-06-2	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Methyl isobutyl ketone	108-10-1	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
Dibromochloromethane	124-48-1	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Tetrachloroethene	127-18-4	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Total 1,2-Dichloroethene	540-59-0	LA-523-455	U	<1		ug/L	1	1	5	08/20/09

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

LS
4-14-2010

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90895

Sample # 90895001
SAF# F09-043
Sample ID B21CK6

Matrix WATER
Sampled 08/17/09
Received 08/17/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Carbon tetrachloride	56-23-5	LA-523-455		740		ug/L	1	20	100	08/24/09
2-Hexanone	591-78-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
Acetone	67-64-1	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
Chloroform	67-66-3	LA-523-455		7.8 J		ug/L	1	1	5	08/20/09
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Bromomethane	74-83-9	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Chloromethane	74-87-3	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Chloroethane	75-00-3	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Vinyl chloride	75-01-4	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Methylene chloride	75-09-2	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Carbon disulfide	75-15-0	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
Bromoform	75-25-2	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Bromodichloromethane	75-27-4	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
1,2-Dichloropropane	78-87-5	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
Methyl ethyl ketone	78-93-3	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/20/09
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	<1		ug/L	1	1	5	08/20/09
1,1,2,2-Tetrachloroethane	79-34-5	LA-523-455	U	<1		ug/L	1	1	5	08/20/09

LS
4-14-2010

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90900
Project Number F09-043

Sample # 90900001
SAF# F09-043
Sample ID B21F31

Matrix WATER
Sampled 08/18/09
Received 08/18/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**08/18/09**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Trichloroethene	79-01-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/18/09
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Carbon tetrachloride	56-23-5	LA-523-455		230 J		ug/L	1	5	20	08/19/09
Chloroform	67-66-3	LA-523-455		8.6		ug/L	1	1	5	08/18/09

LS
4-14-2010

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90900
Project Number F09-043

Sample # 90900002
SAF# F09-043
Sample ID B21F32

Matrix WATER
Sampled 08/18/09
Received 08/18/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**08/18/09**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Trichloroethene	79-01-6	LA-523-455	U	<1 UJ		ug/L	1	1	5	08/18/09
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	08/18/09
Carbon tetrachloride	56-23-5	LA-523-455		280 J		ug/L	1	5	20	08/19/09
Chloroform	67-66-3	LA-523-455		7.7		ug/L	1	1	5	08/18/09

LS
4-14-2010

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF91148

Sample # 91148001
SAF# F09-043
Sample ID B21FV4

Matrix WATER
Sampled 09/25/09
Received 09/25/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**09/25/09**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	09/25/09
Trichloroethene	79-01-6	LA-523-455	J	1.4		ug/L	1	1	5	09/25/09
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	09/25/09
Toluene	108-88-3	LA-523-455	J	2.3		ug/L	1	1	5	09/25/09
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	09/25/09
Carbon tetrachloride	56-23-5	LA-523-455		330		ug/L	1	10	50	09/29/09
Chloroform	67-66-3	LA-523-455		82		ug/L	1	1	5	09/25/09

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
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumptive compound based on MS Library search.

T - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 2
Narrative
WSCF100103

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on January 13, 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, 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.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 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):

- QC Batch 84788 analyzed on sample# B22FC6
    - Manganese – Matrix Spike RPD outside established range. No flags assigned.

All other QC controls are within the established limits.

Attachment 2
Narrative
WSCF100103

Organic Comments

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

All QC controls are within the established limits.

Radiochemistry Comments

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

All 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** — **F10-065-029** — **PAGE 1 OF 1**

COLLECTOR HEUNZ, MORGAN	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL
SAMPLING LOCATION EW-7 (C7022, 299-W11-90); I-001	**PROJECT DESIGNATION** ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		**SAF NO.** F10-065
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-585	**ACTUAL SAMPLE DEPTH** 29.6	**COA** 300194ES10
SHIPPED TO Waste Sampling & Characterization 00103	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 7N — **AIR QUALITY** ☐ — **DATA TURNAROUND** 45 Days / 45 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	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	None
TYPE OF CONTAINER	aCe*	G/P	G
NO. OF CONTAINER(S)	3	1	1
VOLUME	40mL	500mL	250mL
SAMPLE ANALYSIS	VOA - (26/20 (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Tph Li (Tritium)

SAMPLE NO.	**MATRIX***	**SAMPLE DATE**	**SAMPLE TIME**
B23C91 X 003 001	WATER	1/13/10	1145

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. Morgan	1/13/10 1315	TA FRAZIER	1/13/10 1315

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Aluminum, Barium, Chromium, Cobalt, Cadmium, Copper, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium}

☐ ORIGINAL

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF100275

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on February 10th, 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, 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,* pages 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
WSCF100275

- Batch QC 89175 analyzed on sample# B23MT6
- At the time of analysis, the analyst was "diluting" the LCS to mimic the dilution factor performed on client samples. A "D" flag was applied to the LCS in the final report.
    - Strontium – exceeded spiking levels by a factor of 4. Spike recoveries are not valid.

All other QC controls are within the established limits.

Organic Comments

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

All QC controls are within the established limits.

Radiochemistry Comments

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

All 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

F10-065-158

PAGE 1 OF 1

COLLECTOR: MUELER / HELMS

COMPANY CONTACT: DYEKMAN, DL

TELEPHONE NO.: 373-2530

PROJECT COORDINATOR: DYEKMAN, DL

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

SAMPLING LOCATION: FW-12 (C7019, 299-W11-49); I-003

PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water

SAF NO.: F10-065

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-585 8

ACTUAL SAMPLE DEPTH: 320'

COA: 300194ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

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

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

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

PRESERVATION	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	None
TYPE OF CONTAINER	aG*	G/P	G
NO. OF CONTAINER(S)	1	1	1
VOLUME	40mL	500mL	250mL
SAMPLE ANALYSIS	VOA 8260B (HCL)	SEE TRM (1) IN SPECIAL INSTRUCTIONS	Tritium - Low Ev (Tritium)

SPECIAL HANDLING AND/OR STORAGE: 100275

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B23CX6	WATER	2/10/10	1220

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. Mueller / Helms	2/10/10 1255	V. Chu / Chu	2/10/10 1255
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) (Aluminum, Barium, Chromium, Cobalt, Cadmium, Copper, Manganese, Nickel, Vanadium) ICP/MS - 200.8 (Add-on) (Arsenic, Lead, Strontium, Uranium)

☐ ORIGINAL

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

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

A-6003-618(01/05)

Wednesday, February 10, 2010 7:15:03 PM
Page 2 of 2

ChemVare

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042209**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4303, 240' – 250', GRP samples (B1BJC2 and B1BJC9) were received at the WSCF Laboratory on November 22, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx/Gx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Strontium-89/90 and Technetium-99) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 13 through 14 for QC details. Analytical Note:

- Nitrite - Sample B1BJC2 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 20 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Selenium – The analyte was detected in the associated preparation Blank sample and evaluated. Sample B1BJC2 result was C-flagged.
- Silver – Matrix Spike and Matrix Spike Duplicate recovery were below established laboratory limits. Sample B1BJC2 was E (estimate) flagged.
- Calcium, Magnesium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 21 through 28 for QC details. Analytical Notes:

- Preparation Date: 10-dec-2004.
- Barium, Manganese, Strontium and Zinc - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Mercury – The Laboratory Control Sample recovery was below established laboratory limits. Sample B1BJC2 result was below the detection limit and not flagged.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 29 for QC details. Analytical Note:

- Duplicate QC sample was analyzed on sample# PFP04-243-93 (SDG# 20042218, a non GPP group). pH QC samples are analyzed for laboratory controls only.

All other laboratory QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 40 for QC details. Analytical Notes:

- Preparation Date: 29-nov-2004.

- Terphenyl-d14 (surrogate) – Matrix Spike Duplicate recovery was below established laboratory limits and Matrix Spike/Spike Duplicate Relative Percent Difference exceeded the laboratory limits. The sample results were not flagged.

- 2-Fluorophenol, Terphenyl-d14 and 2,4,6-Tribromophenol (surrogates) were below established limits. The Matrix Spike and Matrix Spike Duplicate were analyzed on B1BJC2 and since no target compounds were detected, the sample was not re-analyzed or flagged.

All other QC controls are within the established limits.

TPHD-WA- The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 41 for QC details. Analytical Notes:

- Preparation Date: 24-nov-2004.

- Kerosene - Matrix Spike Duplicate Relative Percent Difference exceeded established laboratory limits. All other QC control samples were within limits and sample B1BJC2 result was not flagged.

All other QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 42 through 44 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9W0 (SDG# 20042208, SAF# F03-019).

- Toluene - sample B1BJC2 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

- Toluene - sample B1BJC2 result was B; analyte was detected in the associated Blank QC sample.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 46 through 51 for QC details. Analytical Note:

- Neptunium-237 – The Laboratory Control Sample recovery was below established laboratory limits. The sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	84.4
LCS		Sr-85	96.3
B1BJC2	W040002315	Sr-85	103.1
DUPLICATE	W040002315	Sr-85	85.0

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 1 OF 3
COLLECTOR: Alexander/Gent/Thomas M Alwood 11/22	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; ~~220~~ ft. open hole 240-250 ft RJG 11-18-04	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.: GPP-03-017	FIELD LOGBOOK NO.: — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.:	BILL OF LADING/AIR BILL NO.:	

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

SPECIAL HANDLING AND/OR STORAGE: 20042209

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL RJG 11-9-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC2	WATER	11/22/04	10:00	✓✓✓	✓	✓	✓	✓	✓	✓	✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: M Alwood	DATE/TIME: 11/22/04 12:30	RECEIVED BY/STORED IN: RBabe RBabe	DATE/TIME: 11/22/04 1230
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-001	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N **AIR QUALITY** ☐	**DATA TURNAROUND** **45 Days**
SAMPLING LOCATION 200-ZP-1, C4303; ~~220 ft~~ open hole 240-250ft	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032		
ICE CHEST NO. GPP-03-017	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas Mahoud	COMPANY CONTACT: TRENT, SJ; TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N; AIR QUALITY: ☐; DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; 220 ft. GPP-03-017	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	
ICE CHEST NO.	FIELD LOGBOOK NO.; COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None
TYPE OF CONTAINER	P	P	P	P
NO. OF CONTAINER(S)	1	2	2	1
VOLUME	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B1BJC2	WATER	11/22/04	10:00	✓	✓✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Rowlaiwat	11/22/4 12/35	KBeebe KBeebe	11/22/04 1730
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: Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-008	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas Mahood	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4303;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
GPP-03-017		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC9	WATER	11/22/04	10:00	✓									
2004000236													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. L. Mahood	11/22/04 12:30	[illegible]	11/22/04 1230
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

Filtered

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042338**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater, C4301, 270', GRP samples (B1BJD9 and B1BJF6) were received at the WSCF Laboratory on December 07, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.

- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium), GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. Analytical Notes:

- Nitrite - Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrite – The Duplicate Relative Percent Difference exceeded established laboratory limits. The RPD criterion is not applicable to sample results less than ten times the Method Detection Limit.

All other QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 26 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC3 (Lab Sample# W040002529, SDG# 20042296, SAF# F04-032).
- Manganese and Strontium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Matrix Spike precision was evaluated on sample# B19386 (SDG# 20042408, SAF# F04-014.)
- Calcium, Iron and Magnesium - The analytes detected in the associated preparation Blank. Sample was evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 27 for QC details. Laboratory Control samples and Duplicate samples were analyzed as per the GRP Letter of Instruction. Analytical Note:

- Sample Duplicate was analyzed on Sample #PFF-04-243-97 (non GRP sample).

All laboratory QC controls for the method were within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 09-dec-2004.
- Terphenyl-d14 (surrogate) – The Matrix Spike and Sample B1BJD9 surrogate recovery were less than the established laboratory limits. The Matrix Spike Relative Percent Difference exceeds established laboratory limits. Sample results were not flagged.

All other QC controls are within the established limits.

TPHD–WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike, Laboratory Control Sample and Laboratory Control Sample Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 39 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Matrix Spike QC sample was analyzed on sample# B1BJC3 (SDG# 20042296, SAF# F04-032).
- Precision was evaluated on the Laboratory Sample and Laboratory Sample Duplicate.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 42 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BRB2 (SDG# 20042308, SAF# F04-006).

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Matrix Spike (Technetium-99 only), Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 44 through 48 for QC details. Analytical Note:

- Technetium-99 - Matrix Spike and Duplicate QC samples were analyzed on sample# B1BXJ0 (SDG# 20042328, SAF# F04-006).

- Neptunium-237 – Laboratory Control Sample recovery was below established laboratory limits. Sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
BLANK		Sr-85	92.8
LCS		Sr-85	108.2
B1BJD9	W040002540	Sr-85	33.0
DUPLICATE	W040002540	Sr-85	38.0

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.

Herlene S. Rich
WSCF Production Control

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

1/4-05

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 1 OF 3

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240ft~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days / 45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE 20042338

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL RJA	~~150mL~~ 250mL 1-10-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJD9 W04002540	WATER	12/7/04	0930	X3	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT	12/7/04 12:15	Victor Bins	12/07/04 12:15
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

FILTERED @ 0.45 µM

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-030	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240 ft.~~ 270' 12/7/04 PMG	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium}
ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 3 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4301; 240 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None								
TYPE OF CONTAINER	P	P	P	P								
NO. OF CONTAINER(S)	1	2	2	1								
VOLUME	1000mL	1000mL	1000mL	500mL								
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;								

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJD9	WATER	12/7/04	0930	X	X	X	X							

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	FILTERED @ 0.45 µm
PMGENT	12/7/04 12:15	Victor Sims	12/7/04 12:15	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-049	PAGE 1 OF 1

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301 ~~X240 R~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C												
TYPE OF CONTAINER	aGs*												
NO. OF CONTAINER(S)	3												
VOLUME	40mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJF6 W04002344	WATER	12/7/04	0830	X										

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM AMGENT/	DATE/TIME 12/7/04	RECEIVED BY/STORED IN Victor Sims	DATE/TIME 12/7/04 12:15
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20050155**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4302, 235' GRP samples (B1BJH6 and B1BJJ3) were received at the WSCF Laboratory on January 25, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Acknowledgement of Samples Received are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Note:

- Sample B1BJH6 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold time for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 09-feb-2005.
- Calcium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Silver, Calcium and Lithium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results, with the following exceptions: Sample B1BJH6 result was C-flagged for Lithium.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 24 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

pH - The hold time for this analysis was met. Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 25 for QC details. Analytical Note:

- Duplicate QC samples were analyzed on sample# B1C371 (SDG# 20050167, SAF# F02-001).

All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 32 through 37 for QC details. Analytical Notes:

- Preparation Date: 31-jan-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9N2 (SDG# 20050186, SAF# F03-019).
- Terphenyl-d14 (surrogate) – Matrix and Matrix Spike Duplicate recoveries were below established laboratory limits. Surrogate recovery for the sample was within limits and the sample B1BJH6 results were not flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 38 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 39 through 41 for QC details. Analytical Note:

- Carbon Tetrachloride - sample B1BJJ3 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 43 through 47 for QC details. Analytical Notes:

- Strontium-89/90 - Duplicate QC samples was analyzed on sample# B1BRC5 (SDG# 20050180, SAF# F02-003).

- Neptunium-237 – Duplicate Relative Percent Difference exceeded established laboratory limit and the Laboratory Control Sample recovery was below established laboratory limits. Sample result was X-flagged.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	69.0
LCS		Sr-85	101.4
B1BRC5	W050000169	Sr-85	69.6
DUPLICATE		Sr-85	80.6

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1BRC6	W050000170	Sr-85	71.0
B1BJH6	W050000144	Sr-85	76.8

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc. 2/24	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 1 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302; 235 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

20050155

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJH6	WATER	1/25/05	0745	X	X	X	X	X	X	X	X	X	X
W05000144													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RMGENT/[illegible]	1/25/05 1040	[illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-059	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4302; 235 ft.	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4302; 235 ft.	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO. — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None	
TYPE OF CONTAINER	P	P	P	P	
NO. OF CONTAINER(S)	1	2	2	1	
VOLUME	1000mL	1000mL	1000mL	500mL	
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJH6	WATER	1/25/05	0745	X	X	X	X						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: PMGENT/	DATE/TIME: 1/25/05 1640	RECEIVED BY/STORED IN: KBarber	DATE/TIME: 1/25/05 1640	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-078	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJJ3	WATER	1/25/05	0845	X									
W05C000148													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT/	1/25/05 1040		1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20051157, Rev. 1**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4694 (I-1), samples (B1D7K5 and B1D7Y4) were received at the WSCF Laboratory on June 1, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

Compliant to GRP direction on December 9, 2005, uranium analysis was performed on sample B1D7Y4. The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 47 through 48, for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).
- Sample B1D7K5 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

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1/3/06

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide – Sample was not analyzed for cyanide. Since the pH of the sample was less than 12, the analysis was cancelled.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 16 through 17 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Aluminum, Calcium and Magnesium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.
- Calcium, Magnesium and Sodium – Due to insufficient spike concentration, Matrix Spike Matrix Spike Duplicate and Spike Relative Percent Difference results are reported as "n/a".
- Aluminum – The Matrix Spike and Matrix Spike Duplicate recoveries are biased low. Sample B1D7K5 result is potentially biased low.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. For the uranium analysis, a Blank, Laboratory Control Sample and Duplicate QC samples were analyzed. There was not enough sample material for a Matrix Spike or Matrix Spike Duplicate Analysis. See pages 18 through 21a for QC details. Analytical Notes:

- Preparation Date: 13-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7K0 (SDG# 20051190, SAF# F04-032) for all metals except uranium.
- Strontium – Due to high sample concentrations, the Matrix Spike and Matrix Spike recoveries are reported as "n/a".
- Uranium Analysis – Added per client request on December 9, 2005. A Duplicate QC sample was analyzed on sample# B1D7K5.

All other QC controls are within the established limits.

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pH - The hold time for this analysis was met. A Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 22 for QC details. All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 29 through 34 for QC details. Analytical Notes:

- Preparation Date: 06-jun-2005.
- Bis (2-ethylhexyl) phthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was B flagged.
- Diethylphthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was less than the reportable detection limit, but greater than or equal to the method detection limit. Sample B1D7K5 result was BJ flagged.
- Phenol-5d (surrogate) – recovery was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.
- Pentachlorophenol – Laboratory Control Sample result was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 35 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 38 for QC details.

All QC controls are within the established limits.

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Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate QC

samples were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 44 for QC details. Analytical Note:

- Strontium-89/90 - Duplicate QC sample was analyzed on sample# B1CWD7 (SDG# 20051152, SAF# F02-003).

All QC controls are within the established limits.

- Uranium-234 and Uranium-235 - Additional Batch QC Data are summarized below:

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
Uranium-234/ Uranium-235				
BLANK		U-234	5.428E-02	
BLANK		U-235	2.232E-02	
B1D7K5	W050001669	U-234	1.182E+00	
DUPLICATE	W050001669	U-234	1.227E+00	3.7%
B1D7K5	W050001669	U-235	4.361E-02	
DUPLICATE	W050001669	U-235	4.716E-02	7.8%

- Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontrium-85			
BLANK		Sr-85	95.9%
LCS		Sr-85	89.6%
B1CWD7	W050001657	Sr-85	93.8%
DUPLICATE	W050001657	Sr-85	93.1%
B1D7K5	W050001669	Sr-85	81.6%

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Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Uranium-232			
BLANK		U-232	74.8%
LCS		U-232	70.4%
B1D7K5	W050001669	U-232	91.2%
DUPLICATE	W050001669	U-232	86.2%

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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1/3/06

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 | PAGE 1 OF 2

COLLECTOR: Alexander/Gent/Mahood

COMPANY CONTACT: TRENT, SJ

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: TRENT, SJ

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

AIR QUALITY: ☐

SAMPLING LOCATION: 200-ZP-1, C4694, I-1

PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater

SAF NO.: F04-032

ICE CHEST NO.:

FIELD LOGBOOK NO.:

COA: 119325ES10

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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

2005157

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	G/P	P	G/P	G/P	G/P	G/P	aG	G/P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	5/26/05 ~~60mL~~ 125mL Rem	5/26/05 ~~150mL~~ 125mL Rem	5/26/05 ~~120mL~~ 125mL Rem	500mL	1000mL PDW P.O.Mu 6/29/2005	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	1210	3 ✓	4 ✓	✓	✓	✓	✓	✓	2 ✓	✓

W5000469

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.O. Mahood/Richard O. Mahood	6/1/5 1415	[illegible]	6/1/5 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {3+4 Methylphenol (cresol, m+p)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010B (TAL) {Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium} ICP Metals - 6010B (Add-On) {Boron, Lithium, Phosphorus, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

LABORATORY SECTION — RECEIVED BY | TITLE | DATE/TIME

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

REVISED R Dayes 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 | PAGE 2 OF 2

COLLECTOR Alexander/Gent/Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 7N	**DATA TURNAROUND** 45 Days / 45 Days	**AIR QUALITY** [ ]	
SAMPLING LOCATION 200-ZP-1, C4694, I-1	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	None	None	~~HCl to pH <2 CSSI~~			
TYPE OF CONTAINER	G/P	G/P	P	~~40m~~ ~~Rem 5/26/05~~ As			
NO. OF CONTAINER(S)	2	2	1	3			
VOLUME	1000mL	1000mL	500mL	~~40mL~~		Add	
SAMPLE ANALYSIS	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	~~Special Instructions~~ ~~All pH < 2~~ Rem	5/31/05	Uranium - Isotopic PDhi P.O.Mix 6/18/2005	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	12:10	2✓	2✓	✓						
~~B1D7K5-A~~	~~WATER~~ Rem 5/31/05								Add Uranium analysis - ICP-MS PDhi P.O.Mix 12/22/2005			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Mahood/Robert D. McLeod	6/1/5 1415	[illegible]	6/1/05 1415
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

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

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A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-169	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Mahood	TRENT, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
200-ZP-1, C4694, I-B1 Rem 6/1/05	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1D7Y4	WATER	6-1-5	1210	3 ✓									
[illegible]													

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Richard C. Mahood / R.C. Mahood	6/1/05 1415	[illegible]	6/1/05 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

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1/3/06

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20061212**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F06-022**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 / 200-UP-1 RI Sampling and Analysis (Laundry Facility) Groundwater samples (B1JX34 and B1JX48) were received at the WSCF Laboratory on October 2, 2006. 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 (GRP) – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

It should be noted that the attached chain of custody was stamped "iced", initialed and dated 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,* page 12, page 22 and page 28, for a complete listing of approved analytical methods

Inorganic Comments

Anions - Hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 9 for QC details.

All QC controls are within the established limits.

Hexavalent Chromium - The hold time for this analysis was met. A Blank, Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 10 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 11 for QC details. Analytical Notes:

- Preparation Date: 03-oct-2006.
- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX20 (SDG# 20061146, SAF# F06-022).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 18 through 20 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX35 (SDG# 20061236, SAF# F06-022).
- Chloroform- sample B1JX48 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF's radiochemical methods. A Blank, Duplicate QC, Matrix Spike (Technetium only) and a Laboratory Control Sample were analyzed with this delivery group. See pages 24 and 26 for QC details. Analytical Note:

- Strontium-90 – Batch QC was performed on a non-GRP (Sample# S667124, SDG# 20061204). Refer to table below for Batch QC detail.

Batch QC Data (Results) - Based on SDG# 20061204				
Sample Number	**Lab Sample ID**	**Isotope**	**QC**	
			Results (pCi/L)	**RPD %**
Strontium-90				
S667124	W060003424	Sr-90	3.100E+00	
DUPLICATE	W060003424	Sr-90	3.050E+00	1.6%

All QC controls are within the established limits.

Strontium-85 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery**
Strontium-85			
BLANK		Sr-85	94.3%
LCS		Sr-85	96.8%
S667124	W060003424	Sr-85	83.5%
DUPLICATE	W060003424	Sr-85	80.7%
B1JX48	W060003428	Sr-85	88.5%

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

11/01/06

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F06-022-110 PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes 20061212	BYRNES, ME	373-3996	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	**45 Days / 45 Days**
C5103 (299-W14-72), I-1 FB 2941	200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		F06-022		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121075~~ES20	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE: TIE to: B1J X39

PRESERVATION	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1JX34 W06000342 7	WATER	10-2-06	1340	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [signature] 11-2-06	1415	K Bates [signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

ICED
KB Initial
10/2/06 Date

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

Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F06-022-129 | PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes	BYRNES, ME	373-3996	TRENT, SJ		
SAMPLING LOCATION C5103 (299-W14-72), I-1 294'	**PROJECT DESIGNATION** 200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		**SAF NO.** F06-022	**AIR QUALITY** ☐	**45 Days / 45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121875~~ES20 10-2-06	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

TIE TO : B1JX39

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	P	P	P	P	P
NO. OF CONTAINER(S)	3	1	1	1	2	2
VOLUME	40mL	~~120~~mL 125	125mL	500mL	1L	1L
SAMPLE ANALYSIS	VOA - 8260B (TCL);	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Strontium-89,90 -- Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1JX48 W06000342 8	WATER	10-2-06	1325	X	X	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope/ [signature] 10-2-06	1415	[signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
VB Initial
10/2/06 Date

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

Sample Delivery Group	**WSCF20071194**
Sample Matrix	**Water**
Data Deliverable	**Summary Report**

Introduction

One (1) groundwater sample was received at the WSCF Laboratory on July 12, 2007. Sample was 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 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 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 13 through 15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Sample Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Note(s):

- Nitrite Sample Duplicate RPD above laboratory acceptance limit, however the Matrix Spike/Matrix Spike Duplicate RPD is within acceptance limits.

All other QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21 through 22 for QC details. Analytical Note(s):

- Iron preparation Blank is high resulting in a "C" flag.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23 through 26 for QC details. Analytical Note(s):

- Chromium preparation Blank positive, however the value is so low in comparison to the sample result no impact evident, no flag applied.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31 through 33 for QC details. Analytical Note:

- Acetone preparation Blank was high, however sample result is "<" therefore no impact to the sample.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 36 through 37 for QC details. All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

for Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John Trechter John Trechter
for Pauline Mix
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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071194	ROHAY, VJ	373-3807	TRENT, SJ	7N	
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	45 Days / 45 Days
C5244 - 1-42 222.3'	T4/T5 Well Installation Characterization - Groundwater		F07-006	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L952 W076R01755	WATER	7.12.07	1155	X	X	X	X	X	X	X	X		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [illegible]	7.12.07 1530	TA Frazier [illegible]	7-12-07 1530

SPECIAL INSTRUCTIONS

** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

ICED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	**WSCF20071433**
Sample Matrix	**Water**
Data Deliverable	**Summary Report**

Introduction

One groundwater sample was received at the WSCF Laboratory on August 13, 2007. Sample was 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18-19 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF21 (SDG# 20071437, SAF# F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. Analytical Note(s):

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1PCL9 (SDG# 20071438, SAF# F02-013).

All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21-22 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).
- Iron contamination detected in the Blank was evaluated and sample result was C flagged.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23-26 for QC details. Analytical Note(s):

- Tc-99 via ICP-MS – Developmental result included in this SDG.
- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).
- Arsenic (B1P3V9) – Spike Relative Percent Difference (RPD) slightly exceeded established laboratory standards. Sample result was E flagged.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. Analytical Note(s):

- Duplicate was analyzed on sample# B1P3W1 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31-33 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.
- Acetone contamination detected in the Blank was evaluated and there was no affect on sample result.

All other QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 35-36 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Tritium – Duplicate and Matrix Spike were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071433	ROHAY, VJ	373-3807	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	
C5244 - 1-53 381	T4/T5 Well Installation Characterization - Groundwater		F07-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L965 W07GR02135	WATER	8-13-07	0935	✓	✓	✓	✓	✓	✓	✓	✓		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Mowder Bruk	8/13/7 1025	TA Frazier Teresa Frazier	8/13/07 1025

SPECIAL INSTRUCTIONS

** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

NCED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	WSCF20071455
Sample Matrix	Water
Data Deliverable	Summary Report

Introduction

Three (3) groundwater samples were received at the WSCF Laboratory on August 15, 2007. 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 17 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 18 for QC details.

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All 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 per the GRP Letter of Instruction. See pages 19-20 for QC details. Analytical Note(s):

- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24-26 for QC details. Analytical Note(s):

- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 29-31 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope, Pfister, Moekler, Julian 20071455	Trent, SJ	373-5869	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
C5574, I-2 326'	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None	
TYPE OF CONTAINER	P	G/P	aG	G/P	G/P	G/P	
NO. OF CONTAINER(S)	1	1	1	1	2	2	
VOLUME	120mL	125mL	500mL	500mL	1L	1L	
SAMPLE ANALYSIS	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy {Cesium-137}	Strontium-89,90 – Total Sr;	Technetium-99 {Technetium-99}	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1P0X1 W076R0215 7	WATER	8-15-07	1125	✓	✓	✓	✓	✓	✓			
				025886	025886	W2213020	024618	024186				

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.D. Julian	8-15-07 1225	TA Frazier / Frazier	8/15/07 1225
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) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
Initial
Date

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julin	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 ~~0~~ Days / ~~0~~ 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		DJa 8-3-07
C5574, I-2 326'	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO DJa 8-3-07 ~~Field Analysis Activities~~ WSCF	**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=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	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P0W2 Q158	WATER	8-15-07	1125	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julin / [illegible] 8-15-07	1225	TA Pfnazhier / [illegible]	8/15/07 1225

SPECIAL INSTRUCTIONS
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform}

ICED
Initial
Date

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julian	Trent, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION C5574, I-2-FB 8-15-07 ~~2975'~~ 326'	**PROJECT DESIGNATION** 200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		**SAF NO.** F07-052	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597ES10	**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=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	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P153 2159	WATER	8-15-07	1057	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.D. Pfister	8-15-07 1225	TA FRAZIER / Jerex Frazier	8/15/07 1225

SPECIAL INSTRUCTIONS

ICED
Initial
Date

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF20072125

Introduction

Three groundwater sample was received at the WSCF Laboratory on November 29, 2007. Sample was 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 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 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 14, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 16 for QC details.

- Matrix Spike, Matrix Spike Duplicate and Sample Duplicate analyzed on sample # B1R0R0 (SDG 20072127, SAF F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The holding time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 17 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The holding time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 18 through 19 for QC details.

- Matrix Spike and Matrix Spike Duplicate analyzed on samples # B1PLB6 (SDG 20072033, SAF F07-030) and B1PLD2 (SDG 20072034, SAF F07-076).

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF20072125

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24 through 26 for QC details.

All QC controls are within the established limits.

Radiochemistry Comments

There are no holding times associated with WSCF's radiochemical methods.

A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction, including Matrix Spike on Tc-99. See pages 28 through 30 for QC details.

- Technetium – 99 Duplicate and Matrix Spike analyzed on sample # B1RF77 (SDG 20072108, SAF F08-014).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John E. Trechter
WSCF Client Services

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY	☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**			
C5572, I-1	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052			
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**			
		122597ES10	GOVERNMENT VEHICLE			
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**			
Waste Sampling & Characterization 20072125	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None
TYPE OF CONTAINER	P	~~G~~/P	aG	~~G~~/P	~~G~~/P	~~G~~/P
NO. OF CONTAINER(S)	1	1	1	1	2	2
VOLUME	120mL	125mL	500mL	500mL	1L	1L
SAMPLE ANALYSIS	IC Anions - 300.0 (Fluoride, Nitrogen in Nitrate)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 – Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1P0M7 W07GR0313 3	WATER	11/29/7	1250	✓	✓	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	11/29/7 1410	TA Frazier [illegible]	11/29/07 1410

SPECIAL INSTRUCTIONS
(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1-FB	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HCl ~~or H2SO4~~ to pH <2/Cool 4C 11-5-07
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1P0L8 3134	WATER	11/29/7	1245

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature] 11/29/7	1410	TA Pnazim [signature]	11/25/07 1410
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

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 1A	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	24 hours ~~0 Days~~ / ~~0~~ 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
~~Field Analysis Activities~~ WSCF	N/A		N/A		

ajl 11-5-07

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
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	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)	**PRESERVATION**	HCl to pH <2/Cool 4C
		TYPE OF CONTAINER	aGs*
		NO. OF CONTAINER(S)	3
		VOLUME	40mL
	SPECIAL HANDLING AND/OR STORAGE	**SAMPLE ANALYSIS**	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P117 313S	WATER	11/29/7	1250	\

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	11/29/7 1410	TA FIZAZIRI [signature]	11/29/07 1410
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)~~VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride, Chloroform)~~

8260_VOA_GCMS ajl 11-5-07

ICED

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF90678

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on June 29, 2009. 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

ICP-MS Metals – The hold time requirements (28 days [Hg] and 6 months) 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):

- Uranium – Sample concentration is more than 4X the spike amount. Matrix Spike / Matrix Spike Duplicate recovery information not valid.

All other QC controls are within the established limits.

Organic Comments

Attachment 2
Narrative
WSCF90678

VOA – The hold time requirement (14 days) for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – A Duplicate, Matrix Spike (Matrix Spikes apply only to Tritium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gamma Energy Analysis – Duplicate Relative Percent Difference(s) (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity. No flags issued.

All other 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** — F09-009-115 — PAGE 1 OF 1

COLLECTOR: J Rolw	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 7N	DATA TURNAROUND: 45 Days / 45 Days		
SAMPLING LOCATION: C7018; EW2-019	PROJECT DESIGNATION: 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO.: F09-009	AIR QUALITY
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-585-3 pg 2	ACTUAL SAMPLE DEPTH: 310'	COA: 300194ES10
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=Vegitation, 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: RADIOACTIVE TIE TO: B1YH73

90678

PRESERVATION	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	G/P	G
NO. OF CONTAINER(S)	4	1	1	1
VOLUME	40ml	500ml	500ml	250ml
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - 906.0 (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B1YMF3 0001	WATER	6/29/09	08:51	✓	✓	✓	✓

ICED

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	6/29/09 0950	[illegible]	6/29/09 0950
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Chromium} ICP/MS - 200.8 (Add-on) {Uranium}
(2)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

FILTERED PER FWS 6/29/09
DWB

Attachment 2
Narrative
WSCF90895

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on August 17, 2009. This 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 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):

All QC controls are within the established limits.

Organic Comments

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

Attachment 2
Narrative
WSCF90895

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC Analyzed On Sample B21CK5 – Gamma Energy Analysis (GEA) – Duplicate Relative Percent Difference (RPD) did not meet established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity.

All other 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			F09-043-036	PAGE 1 OF 1
COLLECTOR: White / Turner	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 7N	DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: C7024 (299-W14-74); EW4-003	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-585-9	ACTUAL SAMPLE DEPTH: 336'	COA: 302022ES10	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)

90895

SPECIAL HANDLING AND/OR STORAGE: RADIOACTIVE TIE TO: B21CJ8

PRESERVATION	HNO3 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	G/P	G
NO. OF CONTAINER(S)	3	1	1	1
VOLUME	40mL	500mL	500mL	250mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B21CK6	WATER	8-17-09	1026	✓	✓	✓	✓

ICED

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
MA White MA White	8-17-09 1105	Victor Sims	8/17/09 1105
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Chromium} ICP/MS - 200.8 (Add-on) {Uranium}
(2)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

ORIGINAL

Attachment 2
Narrative
WSCF90900

Introduction

Two (2) S&GRP samples were received at the WSCF Laboratory on August 18, 2009. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

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

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

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

All QC controls are within the established limits.

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

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF90900

Organic Comments

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

- The additional chemicals are a part of the QC and spike controls and cannot be removed from the report menu.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

All 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			F09-043-061	PAGE 1 OF 1
COLLECTOR: Mokler / Brotheson	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND
SAMPLING LOCATION: C7027 (299-W12-2); EWS-002	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	24 Hours / 15 Days
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-585-8	ACTUAL SAMPLE DEPTH: 385.5'	COA: 302022ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization 90900	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	HNO3 to pH <2(UI:TREX)	HCl to pH <2/Cool~4C
TYPE OF CONTAINER	aG	P	Nalgene	aGs*
NO. OF CONTAINER(S)	1	1	1	3
VOLUME	500mL	500mL	500mL	40mL
SAMPLE ANALYSIS	Chromium hex - 7196;	IC Anions - 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B21F31 001	WATER	8/18/09	08:13	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Brotheson	DATE/TIME: 8/18/09 0925	RECEIVED BY/STORED IN: TA Frazier	DATE/TIME: 8/18/09 0925
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride, Chloroform, Trichloroethene)

F. Clifford per FWS B. Orth

ORIGINAL

ICED

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F09-043-062	PAGE 1 OF 1
COLLECTOR: Mokler / Brotherton	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND
SAMPLING LOCATION: C7027 (299-W17-2); EW5-002D	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	24 Hours / 15 Days
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-585-8	ACTUAL SAMPLE DEPTH: 325.5	COA: 302022ES10	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	HNO3 to pH <2(ULTREX)	HCl to pH <2/Cool~4C						
TYPE OF CONTAINER	aG	P	Nalgene	aGs*						
NO. OF CONTAINER(S)	1	1	1	3						
VOLUME	500mL	500mL	500mL	40mL						
SAMPLE ANALYSIS	Chromium Hex - 7196	IC Anions 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS						

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B21F32 002	WATER	8/18/09	08:13	✓	✓	✓	✓						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Brotherton	DATE/TIME: 8/13/09 0725	RECEIVED BY/STORED IN: T A Frazier	DATE/TIME: 8/18/09 0725
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene}

FILTERED PER PWS BOTH

☐ ORIGINAL

ICED

Wednesday, August 19, 2009 1:06:59 AM
Page 3 of 3

ChemWare

Attachment 2
Narrative
WSCF91148

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on September 25, 2009. 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

All QC controls are within the established limits.

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

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF91148

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

All QC controls are within the established limits.

Organic Comments

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

All 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			F09-043-154	PAGE 1 OF 1
COLLECTOR: BAILEY	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND: 24 Hours / 15 Days
SAMPLING LOCATION: C7029 (299-W12-4); EW19-005	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-5858	ACTUAL SAMPLE DEPTH: 357	COA: 302022ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization 91148	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	HNO3 to pH <2(Lt TREX)	HCl to pH <2/Cool~4C
TYPE OF CONTAINER	aG	P	Nalgene	aGa*
NO. OF CONTAINER(S)	1	1	1	3
VOLUME	500mL	500mL	500mL	40mL
SAMPLE ANALYSIS	Chromium Hex 7196;	IC Anions 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B21FV4 001	WATER	9-25-09	0750	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JK BAILEY / [signature]	9-25-09 0840	T A Frazier [signature]	9-25-09 0840
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene}

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

A-6003-618(01/06)

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: CPP 200 Area, 200 Area SGRP, 200 Area			DATA PACKAGE: VSR10-014		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 4-14-2010	
			SDG: See below*		
ANALYSES PERFORMED					
SW-846 8260 X		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX Water samples

SDG WSCF100103: B23C91
SDG WSCF20042209: B1BJC2, B1BJC9
SDG WSCF20050155: B1BJH6, B1BJJ3
SDG WSCF20061212: B1JX34, B1JX48
SDG WSCF20071433: B1L965
SDG WSCF20072125: B1P0L8, B1P117
SDG WSCF90895: B21CK6
SDG WSCF91148: B21FV4
SDG WSCF100275: B23CX6
SDG WSCF20042338: B1BJD9, B1BJF6
SDG WSCF20051157: B1D7K5, B1D7Y4
SDG WSCF20071194: B1L952
SDG WSCF20071455: B1P0W2, B1P153
SDG WSCF90678: B1YMF3
SDG WSCF90900: B21F31, B21F32

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

WSCF20051157: The VOA bottles were switched and not corrected for on sample result forms. Results labeled as B1D7Y4 are actually results for field sample B1D7K5. Results labeled as B1D7K5 (and hand annotated with a "-A" extension) are actually results for trip blank B1D7Y4.

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? ..... Yes No (N/A)

Initial calibrations acceptable? ..... Yes No (N/A)

Continuing calibrations 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:

*WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 & WSCF91148

GC/MS ORGANIC DATA VALIDATION CHECKLIST

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

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank 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/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A

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

Comments:

WSCF20042209: MB detect - toluene 1.2 ug/L
WSCF20050155: Trip blank B1BJJ3 detect - carbon tetrachloride 3.70 ug/L
WSCF20061212: Field blank B1JX34 detect - acetone 20 ug/L
WSCF20071194: MB detect - acetone 7.2 ug/L
WSCF20071433: MB detect - acetone 7.4 ug/L
WSCF20072125: Field blank B1P0L8 detect - carbon tetrachloride 1.90 ug/L

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

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A

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

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

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? (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:

WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895: LCS and MS/MSD spiked with five common analytes only. Eight target analytes not represented.

WSCF20051157: Due to VOA bottles being switched, the trip blank was used for the MS/MSD.
WSCF20072125: Field blank B1P0L8 used for MS/MSD
WSCF90895: 1,1-Dichloroethane LCS %R = 79% - represents SAP analyte chloroform
WSCF90900: Trichloroethene LCS %R = 78% - represents SAP analytes carbon tetrachloride & trichloroethene

GC/MS ORGANIC DATA VALIDATION CHECKLIST

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

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

MS/MSD RPD values acceptable? ..... Yes No N/A

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

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

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

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

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

Comments: None

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? ..... Yes No N/A

Iinternal standard areas acceptable? ..... Yes No N/A

Internal standard retention times 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

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ..... Yes No N/A

Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A

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

Laboratory properly identified and coded all TIC? (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

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? ..... Yes No N/A

GPC check performed? ..... Yes No N/A

GPC check recoveries acceptable? ..... Yes No N/A

GPC calibration performed? ..... Yes No N/A

GPC calibration check performed? ..... Yes No N/A

GPC calibration check retention times acceptable? ..... Yes No N/A

Check/calibration materials traceable? ..... Yes No N/A

Check/calibration materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments:

Appendix 6

Additional Documentation Requested By Client

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100103

QC Batch 84275
Associated Samples 100103001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #22296**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	01/18/10
Trichloroethene	79-01-6		<1	ug/L					U	01/18/10
Benzene	71-43-2		<1	ug/L					U	01/18/10
Toluene	108-88-3		<1	ug/L					U	01/18/10
Chlorobenzene	108-90-7		<1	ug/L					U	01/18/10
1,1-Dichloroethane	75-34-3		<1	ug/L					U	01/18/10
Ethylbenzene	100-41-4		<1	ug/L					U	01/18/10
Styrene	100-42-5		<1	ug/L					U	01/18/10
cis-1,3-Dichloropropene	10061-01-5		<1	ug/L					U	01/18/10
trans-1,3-Dichloropropene	10061-02-6		<1	ug/L					U	01/18/10
1,2-Dichloroethane	107-06-2		<1	ug/L					U	01/18/10
Methyl isobutyl ketone	108-10-1		<1	ug/L					U	01/18/10
Dibromochloromethane	124-48-1		<1	ug/L					U	01/18/10
Tetrachloroethene	127-18-4		<1	ug/L					U	01/18/10
Total Xylenes	1330-20-7		<1	ug/L					U	01/18/10
Total 1,2-Dichloroethene	540-59-0		<1	ug/L					U	01/18/10
Carbon tetrachloride	56-23-5		<1	ug/L					U	01/18/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100103

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
2-Hexanone	591-78-6		<1	ug/L					U	01/18/10
Acetone	67-64-1		<1	ug/L					U	01/18/10
Chloroform	67-66-3		<1	ug/L					U	01/18/10
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	01/18/10
Bromomethane	74-83-9		<1	ug/L					U	01/18/10
Chloromethane	74-87-3		<1	ug/L					U	01/18/10
Chloroethane	75-00-3		<1	ug/L					U	01/18/10
Vinyl chloride	75-01-4		<1	ug/L					U	01/18/10
Methylene chloride	75-09-2		<1	ug/L					U	01/18/10
Carbon disulfide	75-15-0		<1	ug/L					U	01/18/10
Bromoform	75-25-2		<1	ug/L					U	01/18/10
Bromodichloromethane	75-27-4		<1	ug/L					U	01/18/10
1,2-Dichloropropane	78-87-5		<1	ug/L					U	01/18/10
Methyl ethyl ketone	78-93-3		<1	ug/L					U	01/18/10
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	01/18/10
1,1,2,2-Tetrachloroethane	79-34-5		<1	ug/L					U	01/18/10
LCS			**QC Sample #22297**							
1,1-Dichloroethene	75-35-4		25	ug/L	98.6	75 - 125				01/18/10
Trichloroethene	79-01-6		23	ug/L	92.2	75 - 125				01/18/10
Benzene	71-43-2		24	ug/L	94.7	75 - 125				01/18/10
Toluene	108-88-3		24	ug/L	97.3	75 - 125				01/18/10
Chlorobenzene	108-90-7		25	ug/L	100.9	75 - 125				01/18/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100103

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #22298**							
			Original 100102001							
1,1-Dichloroethene	75-35-4		24	ug/L	97.4	75 - 125				01/18/10
Trichloroethene	79-01-6		25	ug/L	99.7	75 - 125				01/18/10
Benzene	71-43-2		25	ug/L	101.4	75 - 125				01/18/10
Toluene	108-88-3		27	ug/L	108	75 - 125				01/18/10
Chlorobenzene	108-90-7		27	ug/L	109.7	75 - 125				01/18/10
MSD			**QC Sample #22299**							
			Original 100102001					**Paired**	**22298**	
1,1-Dichloroethene	75-35-4		24	ug/L	96.5	75 - 125	0.90	20		01/18/10
Trichloroethene	79-01-6		25	ug/L	98.8	75 - 125	0.90	20		01/18/10
Benzene	71-43-2		25	ug/L	100.9	75 - 125	0.50	20		01/18/10
Toluene	108-88-3		27	ug/L	107.7	75 - 125	0.30	20		01/18/10
Chlorobenzene	108-90-7		27	ug/L	106.2	75 - 125	3.20	20		01/18/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100103

QC Batch 84275
Associated Samples 100103001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #100103001**							
1,2-Dichloroethane-d4	17060-07-0				115	75 - 125				01/18/10
Toluene-d8	2037-26-5				110.8	75 - 125				01/18/10
4-Bromofluorobenzene	460-00-4				113	75 - 125				01/18/10
BLANK			**QC Sample #22296**							
1,2-Dichloroethane-d4	17060-07-0				112.6	75 - 125				01/18/10
Toluene-d8	2037-26-5				102.7	75 - 125				01/18/10
4-Bromofluorobenzene	460-00-4				111.1	75 - 125				01/18/10
LCS			**QC Sample #22297**							
1,2-Dichloroethane-d4	17060-07-0				114.3	75 - 125				01/18/10
Toluene-d8	2037-26-5				104.4	75 - 125				01/18/10
4-Bromofluorobenzene	460-00-4				113	75 - 125				01/18/10
MS			**QC Sample #22298**							
			Original 100102001							
1,2-Dichloroethane-d4	17060-07-0				114.2	75 - 125				01/18/10
Toluene-d8	2037-26-5				106.4	75 - 125				01/18/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100103

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				112.3	75 - 125				01/18/10
MSD			**QC Sample #22299**							
			Original	**100102001**				**Paired**	**22298**	
1,2-Dichloroethane-d4	17060-07-0				111.3	75 - 125	2.60	20		01/18/10
Toluene-d8	2037-26-5				105.1	75 - 125	1.20	20		01/18/10
4-Bromofluorobenzene	460-00-4				112.7	75 - 125	0.40	20		01/18/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100275

QC Batch 88378
Associated Samples 100275001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #23429**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	02/12/10
Trichloroethene	79-01-6		<1	ug/L					U	02/12/10
Benzene	71-43-2		<1	ug/L					U	02/12/10
Toluene	108-88-3		<1	ug/L					U	02/12/10
Chlorobenzene	108-90-7		<1	ug/L					U	02/12/10
1,1-Dichloroethane	75-34-3		<1	ug/L					U	02/12/10
Ethylbenzene	100-41-4		<1	ug/L					U	02/12/10
Styrene	100-42-5		<1	ug/L					U	02/12/10
cis-1,3-Dichloropropene	10061-01-5		<1	ug/L					U	02/12/10
trans-1,3-Dichloropropene	10061-02-6		<1	ug/L					U	02/12/10
1,2-Dichloroethane	107-06-2		<1	ug/L					U	02/12/10
Methyl isobutyl ketone	108-10-1		<1	ug/L					U	02/12/10
Dibromochloromethane	124-48-1		<1	ug/L					U	02/12/10
Tetrachloroethene	127-18-4		<1	ug/L					U	02/12/10
Total Xylenes	1330-20-7		<1	ug/L					U	02/12/10
Total 1,2-Dichloroethene	540-59-0		<1	ug/L					U	02/12/10
Carbon tetrachloride	56-23-5		<1	ug/L					U	02/12/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100275

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
2-Hexanone	591-78-6		<1	ug/L					U	02/12/10
Acetone	67-64-1		<1	ug/L					U	02/12/10
Chloroform	67-66-3		<1	ug/L					U	02/12/10
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	02/12/10
Bromomethane	74-83-9		<1	ug/L					U	02/12/10
Chloromethane	74-87-3		<1	ug/L					U	02/12/10
Chloroethane	75-00-3		<1	ug/L					U	02/12/10
Vinyl chloride	75-01-4		<1	ug/L					U	02/12/10
Methylene chloride	75-09-2		<1	ug/L					U	02/12/10
Carbon disulfide	75-15-0		<1	ug/L					U	02/12/10
Bromoform	75-25-2		<1	ug/L					U	02/12/10
Bromodichloromethane	75-27-4		<1	ug/L					U	02/12/10
1,2-Dichloropropane	78-87-5		<1	ug/L					U	02/12/10
Methyl ethyl ketone	78-93-3		<1	ug/L					U	02/12/10
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	02/12/10
1,1,2,2-Tetrachloroethane	79-34-5		<1	ug/L					U	02/12/10
LCS			**QC Sample #23430**							
1,1-Dichloroethene	75-35-4		21	ug/L	84.6	75 - 125				02/12/10
Trichloroethene	79-01-6		20	ug/L	78.4	75 - 125				02/12/10
Benzene	71-43-2		20	ug/L	78.7	75 - 125				02/12/10
Toluene	108-88-3		19	ug/L	77.9	75 - 125				02/12/10
Chlorobenzene	108-90-7		21	ug/L	82.3	75 - 125				02/12/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100275

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MS			**QC Sample #23431**							
			Original 100260001							
1,1-Dichloroethene	75-35-4		19	ug/L	75.7	75 - 125				02/12/10
Trichloroethene	79-01-6		20	ug/L	78	75 - 125				02/12/10
Benzene	71-43-2		21	ug/L	82.1	75 - 125				02/12/10
Toluene	108-88-3		19	ug/L	76.7	75 - 125				02/12/10
Chlorobenzene	108-90-7		21	ug/L	82.2	75 - 125				02/12/10
MSD			**QC Sample #23432**							
			Original 100260001						**Paired 23431**	
1,1-Dichloroethene	75-35-4		20	ug/L	79.2	75 - 125	4.50	20		02/12/10
Trichloroethene	79-01-6		19	ug/L	77.5	75 - 125	0.60	20		02/12/10
Benzene	71-43-2		21	ug/L	84.1	75 - 125	2.40	20		02/12/10
Toluene	108-88-3		19	ug/L	76.3	75 - 125	0.50	20		02/12/10
Chlorobenzene	108-90-7		21	ug/L	82.6	75 - 125	0.50	20		02/12/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100275

QC Batch 88378
Associated Samples 100275001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #100275001**							
1,2-Dichloroethane-d4	17060-07-0				106.9	75 - 125				02/12/10
Toluene-d8	2037-26-5				87.5	75 - 125				02/12/10
4-Bromofluorobenzene	460-00-4				78.2	75 - 125				02/12/10
BLANK			**QC Sample #23429**							
1,2-Dichloroethane-d4	17060-07-0				96.7	75 - 125				02/12/10
Toluene-d8	2037-26-5				86	75 - 125				02/12/10
4-Bromofluorobenzene	460-00-4				83.6	75 - 125				02/12/10
LCS			**QC Sample #23430**							
1,2-Dichloroethane-d4	17060-07-0				98.5	75 - 125				02/12/10
Toluene-d8	2037-26-5				85	75 - 125				02/12/10
4-Bromofluorobenzene	460-00-4				83.8	75 - 125				02/12/10
MS			**QC Sample #23431**							
			Original 100260001							
1,2-Dichloroethane-d4	17060-07-0				96	75 - 125				02/12/10
Toluene-d8	2037-26-5				84	75 - 125				02/12/10

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF100275

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				81.4	75 - 125				02/12/10
MSD			**QC Sample #23432**							
			Original	**100260001**				**Paired**	**23431**	
1,2-Dichloroethane-d4	17060-07-0				101.8	75 - 125	5.90	20		02/12/10
Toluene-d8	2037-26-5				85.4	75 - 125	1.70	20		02/12/10
4-Bromofluorobenzene	460-00-4				78.4	75 - 125	3.80	20		02/12/10

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

Lab ID: W040002314
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,1-Dichloroethene	75-35-4	24.280	97.100	% Recov	12/02/04	63.000	117.000	
MS	Benzene	71-43-2	29.350	117.000	% Recov	12/02/04	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	49.810	99.600	% Recov	12/02/04	84.000	116.000	
MS	Chlorobenzene	108-90-7	29.250	117.000	% Recov	12/02/04	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	59.720	119.000	% Recov	12/02/04	82.000	136.000	
MS	Toluene-d8	2037-26-5	53.030	106.000	% Recov	12/02/04	89.000	119.000	
MS	Toluene	108-88-3	28.271	113.000	% Recov	12/02/04	76.000	120.000	
MS	Trichloroethene	79-01-6	26.810	107.000	% Recov	12/02/04	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	22.320	89.300	% Recov	12/02/04	63.000	117.000	
MSD	Benzene	71-43-2	28.330	113.000	% Recov	12/02/04	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	49.320	98.600	% Recov	12/02/04	84.000	116.000	
MSD	Chlorobenzene	108-90-7	28.310	113.000	% Recov	12/02/04	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	58.640	117.000	% Recov	12/02/04	82.000	136.000	
MSD	Toluene-d8	2037-26-5	54.760	110.000	% Recov	12/02/04	89.000	119.000	
MSD	Toluene	108-88-3	27.471	110.000	% Recov	12/02/04	76.000	120.000	
MSD	Trichloroethene	79-01-6	26.150	105.000	% Recov	12/02/04	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	89.300	8.369	RPD	12/02/04	0.000	10.000	
SPK-RPD	Benzene	71-43-2	113.000	3.478	RPD	12/02/04	0.000	10.000	
SPK-RPD	Chlorobenzene	108-90-7	113.000	3.478	RPD	12/02/04	0.000	10.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	117.000	1.695	RPD	12/02/04	0.000	25.000	
SPK-RPD	Toluene-d8	2037-26-5	110.000	3.704	RPD	12/02/04	0.000	25.000	
SPK-RPD	Toluene	108-88-3	110.000	2.691	RPD	12/02/04	0.000	10.000	
SPK-RPD	Trichloroethene	79-01-6	105.000	1.887	RPD	12/02/04	0.000	10.000	

Lab ID: W040002315
BATCH QC ASSOCIATED WITH SAMPLE

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	4-Bromofluorobenzene	460-00-4	50.170	100.000	% Recov	12/02/04	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	59.530	119.000	% Recov	12/02/04	82.000	136.000	
SURR	Toluene-d8	2037-26-5	53.390	107.000	% Recov	12/02/04	89.000	119.000	

Lab ID: W040002316
BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene	460-00-4	49.490	99.000	% Recov	12/02/04	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	58.580	117.000	% Recov	12/02/04	82.000	136.000	
SURR	Toluene-d8	2037-26-5	54.190	108.000	% Recov	12/02/04	89.000	119.000	

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L	12/02/04			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L	12/02/04			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L	12/02/04			U
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	12/02/04	0.000	5.000	U
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L	12/02/04			U
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L	12/02/04			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L	12/02/04			U
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L	12/02/04			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L	12/02/04			U
BLANK	4-Bromofluorobenzene	460-00-4	49.300	98.600	% Recov	12/02/04	84.000	116.000	
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L	12/02/04			U
BLANK	n-Butylbenzene	104-51-8	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L	12/02/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L	12/02/04			U
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L	12/02/04			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L	12/02/04			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	58.300	117.000	% Recov	12/02/04	82.000	136.000	
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L	12/02/04			U
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L	12/02/04			U
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	12/02/04	0.000	5.000	U
BLANK	Toluene-d8	2037-26-5	53.700	107.000	% Recov	12/02/04	89.000	119.000	
BLANK	Toluene	108-88-3	1.2	1.200	ug/L	12/02/04			
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L	12/02/04			U
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L	12/02/04			U
LCS	1,1-Dichloroethene	75-35-4	24.100	96.400	% Recov	12/02/04	70.000	130.000	
LCS	Benzene	71-43-2	28.470	114.000	% Recov	12/02/04	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	50.750	102.000	% Recov	12/02/04	84.000	116.000	
LCS	Chlorobenzene	108-90-7	29.180	117.000	% Recov	12/02/04	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	59.210	118.000	% Recov	12/02/04	82.000	136.000	
LCS	Toluene-d8	2037-26-5	53.690	107.000	% Recov	12/02/04	89.000	119.000	
LCS	Toluene	108-88-3	28.450	114.000	% Recov	12/02/04	70.000	130.000	
LCS	Trichloroethene	79-01-6	27.680	111.000	% Recov	12/02/04	70.000	130.000	
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L	12/06/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 12/02/04
Receive Date:12/02/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002535									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	1,1-Dichloroethene	75-35-4	22.110	88.400	% Recov	12/13/04	63.000	117.000	
MS	Benzene	71-43-2	24.300	97.200	% Recov	12/13/04	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	49.380	98.800	% Recov	12/13/04	84.000	116.000	
MS	Chlorobenzene	108-90-7	26.840	107.000	% Recov	12/13/04	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	56.510	113.000	% Recov	12/13/04	82.000	136.000	
MS	Toluene-d8	2037-26-5	51.880	104.000	% Recov	12/13/04	89.000	119.000	
MS	Toluene	108-88-3	24.978	99.900	% Recov	12/13/04	76.000	120.000	
MS	Trichloroethene	79-01-6	24.031	96.100	% Recov	12/13/04	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	21.340	85.400	% Recov	12/13/04	63.000	117.000	
MSD	Benzene	71-43-2	25.820	103.000	% Recov	12/13/04	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	49.100	98.200	% Recov	12/13/04	84.000	116.000	
MSD	Chlorobenzene	108-90-7	27.660	111.000	% Recov	12/13/04	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	59.200	118.000	% Recov	12/13/04	82.000	136.000	
MSD	Toluene-d8	2037-26-5	52.910	106.000	% Recov	12/13/04	89.000	119.000	
MSD	Toluene	108-88-3	25.798	103.000	% Recov	12/13/04	76.000	120.000	
MSD	Trichloroethene	79-01-6	24.891	99.600	% Recov	12/13/04	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	85.400	3.452	RPD	12/13/04	0.000	10.000	
SPK-RPD	Benzene	71-43-2	103.000	5.794	RPD	12/13/04	0.000	10.000	
SPK-RPD	Chlorobenzene	108-90-7	111.000	3.670	RPD	12/13/04	0.000	10.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	118.000	4.329	RPD	12/13/04	0.000	25.000	
SPK-RPD	Toluene-d8	2037-26-5	106.000	1.905	RPD	12/13/04	0.000	25.000	
SPK-RPD	Toluene	108-88-3	103.000	3.056	RPD	12/13/04	0.000	10.000	
SPK-RPD	Trichloroethene	79-01-6	99.600	3.577	RPD	12/13/04	0.000	10.000	

Lab ID: W040002540
BATCH QC ASSOCIATED WITH SAMPLE

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	4-Bromofluorobenzene	460-00-4	49.420	98.800	% Recov	12/13/04	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	59.430	119.000	% Recov	12/13/04	82.000	136.000	
SURR	Toluene-d8	2037-26-5	53.560	107.000	% Recov	12/13/04	89.000	119.000	

Lab ID: W040002544
BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene	460-00-4	48.720	97.400	% Recov	12/13/04	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	57.080	114.000	% Recov	12/13/04	82.000	136.000	
SURR	Toluene-d8	2037-26-5	53.510	107.000	% Recov	12/13/04	89.000	119.000	

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L	12/13/04			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L	12/13/04			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L	12/13/04			U
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	12/13/04	0.000	5.000	U
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L	12/13/04			U
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L	12/13/04			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L	12/13/04			U
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L	12/13/04			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L	12/13/04			U
BLANK	4-Bromofluorobenzene	460-00-4	49.930	99.900	% Recov	12/13/04	84.000	116.000	
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L	12/13/04			U
BLANK	n-Butylbenzene	104-51-8	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L	12/13/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L	12/13/04			U
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L	12/13/04			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L	12/13/04			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	55.570	111.000	% Recov	12/13/04	82.000	136.000	
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L	12/13/04			U
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L	12/13/04			U
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	12/13/04	0.000	5.000	U
BLANK	Toluene-d8	2037-26-5	52.730	105.000	% Recov	12/13/04	89.000	119.000	
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L	12/13/04			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L	12/13/04			U
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L	12/13/04			U
LCS	1,1-Dichloroethene	75-35-4	22.100	88.400	% Recov	12/13/04	70.000	130.000	
LCS	Benzene	71-43-2	27.450	110.000	% Recov	12/13/04	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	51.210	102.000	% Recov	12/13/04	84.000	116.000	
LCS	Chlorobenzene	108-90-7	28.390	114.000	% Recov	12/13/04	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	59.850	120.000	% Recov	12/13/04	82.000	136.000	
LCS	Toluene-d8	2037-26-5	53.790	108.000	% Recov	12/13/04	89.000	119.000	
LCS	Toluene	108-88-3	27.340	109.000	% Recov	12/13/04	70.000	130.000	
LCS	Trichloroethene	79-01-6	25.200	101.000	% Recov	12/13/04	70.000	130.000	
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L	12/14/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	1,1-Dichloroethene	75-35-4	26.470	106.000	% Recov	02/07/05	63.000	117.000	
MS	Benzene	71-43-2	27.430	110.000	% Recov	02/07/05	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	55.920	112.000	% Recov	02/07/05	84.000	116.000	
MS	Chlorobenzene	108-90-7	28.180	113.000	% Recov	02/07/05	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	55.740	111.000	% Recov	02/07/05	82.000	136.000	
MS	Toluene	108-88-3	26.790	107.000	% Recov	02/07/05	76.000	120.000	
MS	Trichloroethene	79-01-6	26.990	108.000	% Recov	02/07/05	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	25.240	101.000	% Recov	02/07/05	63.000	117.000	
MSD	Benzene	71-43-2	27.210	109.000	% Recov	02/07/05	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	56.580	113.000	% Recov	02/07/05	84.000	116.000	
MSD	Chlorobenzene	108-90-7	28.350	113.000	% Recov	02/07/05	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	56.950	114.000	% Recov	02/07/05	82.000	136.000	
MSD	Toluene	108-88-3	26.380	106.000	% Recov	02/07/05	76.000	120.000	
MSD	Trichloroethene	79-01-6	24.450	97.800	% Recov	02/07/05	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	101.000	4.831	RPD	02/07/05	0.000	10.000	
SPK-RPD	Benzene	71-43-2	109.000	0.913	RPD	02/07/05	0.000	10.000	
SPK-RPD	Chlorobenzene	108-90-7	113.000	0.000	RPD	02/07/05	0.000	10.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	114.000	2.667	RPD	02/07/05	0.000	25.000	
SPK-RPD	Toluene	108-88-3	106.000	0.939	RPD	02/07/05	0.000	10.000	
SPK-RPD	Trichloroethene	79-01-6	97.800	9.913	RPD	02/07/05	0.000	10.000	
SURR	4-Bromofluorobenzene	460-00-4	56.310	113.000	% Recov	02/07/05	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	54.120	108.000	% Recov	02/07/05	82.000	136.000	
Lab ID: W050000148									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	4-Bromofluorobenzene	460-00-4	57.020	114.000	% Recov	02/07/05	84.000	116.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	1,2-Dichloroethane-d4	17060-07-0	54.840	110.000	% Recov	02/07/05	82.000	136.000	
SURR	Toluene-d8	2037-26-5	53.900	108.000	% Recov	02/07/05	89.000	119.000	

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L	02/07/05			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L	02/07/05			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L	02/07/05			U
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	02/07/05	0.000	5.000	U
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L	02/07/05			U
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L	02/07/05			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L	02/07/05			U
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L	02/07/05			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L	02/07/05			U
BLANK	4-Bromofluorobenzene	460-00-4	56.740	113.000	% Recov	02/07/05	84.000	116.000	
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L	02/07/05			U
BLANK	n-Butylbenzene	104-51-8	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L	02/07/05			U
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L	02/07/05			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L	02/07/05			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	55.230	110.000	% Recov	02/07/05	82.000	136.000	
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L	02/07/05			U
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L	02/07/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L	02/07/05			U
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	02/07/05	0.000	5.000	U
BLANK	Toluene-d8	2037-26-5	53.040	106.000	% Recov	02/07/05	89.000	119.000	
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L	02/07/05			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L	02/07/05			U
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L	02/07/05			U
LCS	1,1-Dichloroethene	75-35-4	24.020	96.100	% Recov	02/08/05	70.000	130.000	
LCS	Benzene	71-43-2	26.440	106.000	% Recov	02/08/05	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	57.280	115.000	% Recov	02/08/05	84.000	116.000	
LCS	Chlorobenzene	108-90-7	28.580	114.000	% Recov	02/08/05	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	57.570	115.000	% Recov	02/08/05	82.000	136.000	
LCS	Toluene-d8	2037-26-5	55.220	110.000	% Recov	02/08/05	89.000	119.000	
LCS	Toluene	108-88-3	27.780	111.000	% Recov	02/08/05	70.000	130.000	
LCS	Trichloroethene	79-01-6	27.600	110.000	% Recov	02/08/05	70.000	130.000	

Lab ID: W050000144
BATCH QC ASSOCIATED WITH SAMPLE

SURR	Toluene-d8	2037-26-5	1057.0	106.000	% Recov	02/08/05	89.000	119.000	

BATCH QC

BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L	02/08/05			U
BLANK	Toluene-d8	2037-26-5	53.160	106.000	% Recov	02/08/05	89.000	119.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

Lab ID: W050001669
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,1-Dichloroethene	75-35-4	22.690	90.800	% Recov	06/13/05	63.000	117.000	
MS	Benzene	71-43-2	23.590	94.400	% Recov	06/13/05	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	51.370	103.000	% Recov	06/13/05	84.000	116.000	
MS	Chlorobenzene	108-90-7	25.500	102.000	% Recov	06/13/05	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	49.110	98.200	% Recov	06/13/05	82.000	136.000	
MS	Toluene-d8	2037-26-5	52.560	105.000	% Recov	06/13/05	89.000	119.000	
MS	Toluene	108-88-3	25.840	103.000	% Recov	06/13/05	76.000	120.000	
MS	Trichloroethene	79-01-6	24.300	97.200	% Recov	06/13/05	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	22.680	90.700	% Recov	06/13/05	63.000	117.000	
MSD	Benzene	71-43-2	23.340	93.400	% Recov	06/13/05	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	51.080	102.000	% Recov	06/13/05	84.000	116.000	
MSD	Chlorobenzene	108-90-7	24.560	98.200	% Recov	06/13/05	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	47.840	95.700	% Recov	06/13/05	82.000	136.000	
MSD	Toluene-d8	2037-26-5	52.730	105.000	% Recov	06/13/05	89.000	119.000	
MSD	Toluene	108-88-3	25.420	102.000	% Recov	06/13/05	76.000	120.000	
MSD	Trichloroethene	79-01-6	23.220	92.900	% Recov	06/13/05	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	90.700	0.110	RPD	06/13/05	0.000	20.000	
SPK-RPD	Benzene	71-43-2	93.400	1.065	RPD	06/13/05	0.000	20.000	
SPK-RPD	Chlorobenzene	108-90-7	98.200	3.796	RPD	06/13/05	0.000	20.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	95.700	2.579	RPD	06/13/05	0.000	20.000	
SPK-RPD	Toluene-d8	2037-26-5	105.000	0.000	RPD	06/13/05	0.000	20.000	
SPK-RPD	Toluene	108-88-3	102.000	0.976	RPD	06/13/05	0.000	20.000	
SPK-RPD	Trichloroethene	79-01-6	92.900	4.524	RPD	06/13/05	0.000	20.000	
SURR	4-Bromofluorobenzene	460-00-4	51.180	102.000	% Recov	06/13/05	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	46.830	93.700	% Recov	06/13/05	82.000	136.000	
SURR	Toluene-d8	2037-26-5	52.860	106.000	% Recov	06/13/05	89.000	119.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

Lab ID: W050001670

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	4-Bromofluorobenzene	460-00-4	50.230	100.000	% Recov	06/13/05	84.000	116.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	49.030	98.100	% Recov	06/13/05	82.000	136.000	
SURR	Toluane-d8	2037-26-5	52.110	104.000	% Recov	06/13/05	89.000	119.000	

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L	06/13/05			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L	06/13/05			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L	06/13/05			U
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	06/13/05	0.000	5.000	U
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L	06/13/05			U
BLANK	1,2-Dichloroathane	107-06-2	< 1.0	n/a	ug/L	06/13/05			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L	06/13/05			U
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L	06/13/05			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Bromodichloromethana	75-27-4	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L	06/13/05			U
BLANK	4-Bromofluorobenzene	460-00-4	50.920	102.000	% Recov	06/13/05	84.000	116.000	
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L	06/13/05			U
BLANK	n-Butylbenzene	104-51-8	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L	06/13/05			U
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L	06/13/05			U
BLANK	cis-1,3-Dichloropropane	10061-01-5	< 1.0	n/a	ug/L	06/13/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L	06/13/05			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	48.680	97.400	% Recov	06/13/05	82.000	136.000	
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L	06/13/05			U
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L	06/13/05			U
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	06/13/05	0.000	5.000	U
BLANK	Toluene-d8	2037-26-5	52.370	105.000	% Recov	06/13/05	89.000	119.000	
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L	06/13/05			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L	06/13/05			U
LCS	1,1-Dichloroethene	75-35-4	22.850	91.400	% Recov	06/13/05	70.000	130.000	
LCS	Benzene	71-43-2	25.060	100.000	% Recov	06/13/05	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	51.250	102.000	% Recov	06/13/05	84.000	116.000	
LCS	Chlorobenzene	108-90-7	25.460	102.000	% Recov	06/13/05	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	49.730	99.500	% Recov	06/13/05	82.000	136.000	
LCS	Toluene-d8	2037-26-5	53.290	107.000	% Recov	06/13/05	89.000	119.000	
LCS	Toluene	108-88-3	26.680	107.000	% Recov	06/13/05	70.000	130.000	
LCS	Trichloroethene	79-01-6	24.670	98.700	% Recov	06/13/05	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20061212
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 10/02/06
Receive Date:10/02/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W060003427											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	56.060	112.000	% Recov	84.000	116.000				10/16/06
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	50.040	100.000	% Recov	82.000	136.000				10/16/06
SURR	Toluene-d8(Surr)	2037-26-5	54.080	108.000	% Recov	89.000	119.000				10/16/06
Lab ID: W060003428											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	57.820	116.000	% Recov	84.000	116.000				10/16/06
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	55.740	111.000	% Recov	82.000	136.000				10/16/06
SURR	Toluene-d8(Surr)	2037-26-5	54.310	109.000	% Recov	89.000	119.000				10/16/06
Lab ID: W060003462											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	1,1-Dichloroethene	75-35-4	26.340	105.000	% Recov	63.000	117.000				10/16/06
MS	Benzene	71-43-2	25.900	104.000	% Recov	75.000	129.000				10/16/06
MS	4-Bromofluorobenzene(Surr)	460-00-4	56.890	114.000	% Recov	84.000	116.000				10/16/06
MS	Chlorobenzene	108-90-7	27.460	110.000	% Recov	79.000	119.000				10/16/06
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	55.150	110.000	% Recov	82.000	136.000				10/16/06
MS	Toluene-d8(Surr)	2037-26-5	52.820	106.000	% Recov	89.000	119.000				10/16/06
MS	Toluene	108-88-3	27.410	110.000	% Recov	76.000	120.000				10/16/06
MS	Trichloroethene	79-01-6	25.440	102.000	% Recov	73.000	123.000				10/16/06
MSD	1,1-Dichloroethene	75-35-4	27.840	111.000	% Recov	63.000	117.000				10/16/06
MSD	Benzene	71-43-2	25.910	104.000	% Recov	75.000	129.000				10/16/06
MSD	4-Bromofluorobenzene(Surr)	460-00-4	57.400	115.000	% Recov	84.000	116.000				10/16/06
MSD	Chlorobenzene	108-90-7	26.830	107.000	% Recov	79.000	119.000				10/16/06
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.910	106.000	% Recov	82.000	136.000				10/16/06
MSD	Toluene-d8(Surr)	2037-26-5	54.930	110.000	% Recov	89.000	119.000				10/16/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20061212
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 10/04/06
Receive Date:10/05/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Toluene	108-88-3	27.610	110.000	% Recov	76.000	120.000				10/16/06
MSD	Trichloroethene	79-01-6	25.900	104.000	% Recov	73.000	123.000				10/16/06
SPK-RPD	1,1-Dichloroethene	75-35-4	111.000		RPD			5.556	20.000		10/16/06
SPK-RPD	Benzene	71-43-2	104.000		RPD			0.000	20.000		10/16/06
SPK-RPD	Chlorobenzene	108-90-7	107.000		RPD			2.765	20.000		10/16/06
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	106.000		RPD			3.704	20.000		10/16/06
SPK-RPD	Toluene-d8(Surr)	2037-26-5	110.000		RPD			3.704	20.000		10/16/06
SPK-RPD	Toluene	108-88-3	110.000		RPD			0.000	20.000		10/16/06
SPK-RPD	Trichloroethene	79-01-6	104.000		RPD			1.942	20.000		10/16/06

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	10/16/06
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	10/16/06
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	10/16/06
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	0.000	5.000			U	10/16/06
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	10/16/06
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	10/16/06
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L					U	10/16/06
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L					U	10/16/06
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	10/16/06
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	56.350	113.000	% Recov	84.000	116.000				10/16/06
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	10/16/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20061212
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L					U	10/16/06
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.580	105.000	% Recov	82.000	136.000				10/16/06
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L					U	10/16/06
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	10/16/06
BLANK	Toluene-d8(Surr)	2037-26-5	54.300	109.000	% Recov	89.000	119.000				10/16/06
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	10/16/06
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	10/16/06
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	10/16/06
LCS	1,1-Dichloroethene	75-35-4	25.880	104.000	% Recov	70.000	130.000				10/16/06
LCS	Benzene	71-43-2	26.250	105.000	% Recov	70.000	130.000				10/16/06
LCS	4-Bromofluorobenzene(Surr)	460-00-4	57.340	115.000	% Recov	84.000	116.000				10/16/06
LCS	Chlorobenzene	108-90-7	26.980	108.000	% Recov	70.000	130.000				10/16/06
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	53.570	107.000	% Recov	82.000	136.000				10/16/06
LCS	Toluene-d8(Surr)	2037-26-5	55.100	110.000	% Recov	89.000	119.000				10/16/06
LCS	Toluene	108-88-3	27.730	111.000	% Recov	70.000	130.000				10/16/06
LCS	Trichloroethene	79-01-6	25.500	102.000	% Recov	70.000	130.000				10/16/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071194
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 07/12/07
Receive Date:07/12/07

Lab ID: W07GR01755
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	1,1-Dichloroethene	75-35-4	27.950	112.000	% Recov	63.000	117.000				07/24/07
MS	Benzene	71-43-2	26.940	108.000	% Recov	75.000	129.000				07/24/07
MS	4-Bromofluorobenzene(Surr)	460-00-4	47.940	95.900	% Recov	84.000	116.000				07/24/07
MS	Chlorobenzene	108-90-7	20.890	83.600	% Recov	79.000	119.000				07/24/07
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	45.030	90.100	% Recov	82.000	136.000				07/24/07
MS	Toluene-d8(Surr)	2037-26-5	53.320	107.000	% Recov	89.000	119.000				07/24/07
MS	Toluene	108-88-3	25.700	103.000	% Recov	76.000	120.000				07/24/07
MS	Trichloroethene	79-01-6	24.338	97.400	% Recov	73.000	123.000				07/24/07
MSD	1,1-Dichloroethene	75-35-4	28.920	116.000	% Recov	63.000	117.000				07/24/07
MSD	Benzene	71-43-2	27.140	109.000	% Recov	75.000	129.000				07/24/07
MSD	4-Bromofluorobenzene(Surr)	460-00-4	47.870	95.700	% Recov	84.000	116.000				07/24/07
MSD	Chlorobenzene	108-90-7	21.220	84.900	% Recov	79.000	119.000				07/24/07
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	45.000	90.000	% Recov	82.000	136.000				07/24/07
MSD	Toluene-d8(Surr)	2037-26-5	52.710	105.000	% Recov	89.000	119.000				07/24/07
MSD	Toluene	108-88-3	26.070	104.000	% Recov	76.000	120.000				07/24/07
MSD	Trichloroethene	79-01-6	24.458	97.800	% Recov	73.000	123.000				07/24/07
SPK-RPD	1,1-Dichloroethene	75-35-4	116.000		RPD			3.509	20.000		07/24/07
SPK-RPD	Benzene	71-43-2	109.000		RPD			0.922	20.000		07/24/07
SPK-RPD	Chlorobenzene	108-90-7	84.900		RPD			1.543	20.000		07/24/07
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	90.000		RPD			0.111	20.000		07/24/07
SPK-RPD	Toluene-d8(Surr)	2037-26-5	105.000		RPD			1.887	20.000		07/24/07
SPK-RPD	Toluene	108-88-3	104.000		RPD			0.966	20.000		07/24/07
SPK-RPD	Trichloroethene	79-01-6	97.800		RPD			0.410	20.000		07/24/07
SURR	4-Bromofluorobenzene(Surr)	460-00-4	48.230	96.500	% Recov	84.000	116.000				07/24/07
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	45.290	90.600	% Recov	82.000	136.000				07/24/07
SURR	Toluene-d8(Surr)	2037-26-5	52.230	104.000	% Recov	89.000	119.000				07/24/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071194
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 07/12/07
Receive Date:07/12/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	07/24/07
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	07/24/07
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	07/24/07
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	0.000	5.000			U	07/24/07
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	07/24/07
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	07/24/07
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L					U	07/24/07
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L					U	07/24/07
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Acetone	67-64-1	7.2	7.200	ug/L						07/24/07
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	07/24/07
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	48.520	97.000	% Recov	84.000	116.000				07/24/07
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	07/24/07
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L					U	07/24/07
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	43.980	88.000	% Recov	82.000	136.000				07/24/07
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L					U	07/24/07
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	07/24/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071194
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	07/24/07
BLANK	Toluene-d8(Surr)	2037-26-5	51.430	103.000	% Recov	89.000	119.000				07/24/07
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	07/24/07
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	07/24/07
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	07/24/07
LCS	1,1-Dichloroethene	75-35-4	27.130	109.000	% Recov	70.000	130.000				07/24/07
LCS	Benzene	71-43-2	27.980	112.000	% Recov	70.000	130.000				07/24/07
LCS	4-Bromofluorobenzene(Surr)	460-00-4	48.060	96.100	% Recov	84.000	116.000				07/24/07
LCS	Chlorobenzene	108-90-7	22.150	88.600	% Recov	70.000	130.000				07/24/07
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	45.030	90.100	% Recov	82.000	136.000				07/24/07
LCS	Toluene-d8(Surr)	2037-26-5	53.440	107.000	% Recov	89.000	119.000				07/24/07
LCS	Toluene	108-88-3	26.710	107.000	% Recov	70.000	130.000				07/24/07
LCS	Trichloroethene	79-01-6	21.680	86.700	% Recov	70.000	130.000				07/24/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071433
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/09/07
Receive Date:08/09/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02091											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	1,1-Dichloroethene	75-35-4	27.540	110.000	% Recov	63.000	117.000				08/22/07
MS	Benzene	71-43-2	25.370	101.000	% Recov	75.000	129.000				08/22/07
MS	4-Bromofluorobenzene(Surr)	460-00-4	48.320	96.600	% Recov	84.000	116.000				08/22/07
MS	Chlorobenzene	108-90-7	21.690	86.800	% Recov	79.000	119.000				08/22/07
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	42.840	85.700	% Recov	82.000	136.000				08/22/07
MS	Toluene-d8(Surr)	2037-26-5	48.740	97.500	% Recov	89.000	119.000				08/22/07
MS	Toluene	108-88-3	25.250	101.000	% Recov	76.000	120.000				08/22/07
MS	Trichloroethene	79-01-6	23.987	95.900	% Recov	73.000	123.000				08/22/07
MSD	1,1-Dichloroethene	75-35-4	25.310	101.000	% Recov	63.000	117.000				08/22/07
MSD	Benzene	71-43-2	24.810	99.200	% Recov	75.000	129.000				08/22/07
MSD	4-Bromofluorobenzene(Surr)	460-00-4	48.040	96.100	% Recov	84.000	116.000				08/22/07
MSD	Chlorobenzene	108-90-7	21.000	84.000	% Recov	79.000	119.000				08/22/07
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	43.080	86.200	% Recov	82.000	136.000				08/22/07
MSD	Toluene-d8(Surr)	2037-26-5	49.630	99.300	% Recov	89.000	119.000				08/22/07
MSD	Toluene	108-88-3	24.760	99.000	% Recov	76.000	120.000				08/22/07
MSD	Trichloroethene	79-01-6	23.467	93.900	% Recov	73.000	123.000				08/22/07
SPK-RPD	1,1-Dichloroethene	75-35-4	101.000		RPD			8.531	20.000		08/22/07
SPK-RPD	Benzene	71-43-2	99.200		RPD			1.798	20.000		08/22/07
SPK-RPD	Chlorobenzene	108-90-7	84.000		RPD			3.279	20.000		08/22/07
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	86.200		RPD			0.582	20.000		08/22/07
SPK-RPD	Toluene-d8(Surr)	2037-26-5	99.300		RPD			1.829	20.000		08/22/07
SPK-RPD	Toluene	108-88-3	99.000		RPD			2.000	20.000		08/22/07
SPK-RPD	Trichloroethene	79-01-6	93.900		RPD			2.107	20.000		08/22/07

Lab ID: W07GR02135
BATCH QC ASSOCIATED WITH SAMPLE

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071433
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/13/07
Receive Date:08/13/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SURR	4-Bromofluorobenzene(Surr)	460-00-4	47.830	95.700	% Recov	84.000	116.000				08/22/07
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	41.940	83.900	% Recov	82.000	136.000				08/22/07
SURR	Toluene-d8(Surr)	2037-26-5	52.320	105.000	% Recov	89.000	119.000				08/22/07
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	08/22/07
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	08/22/07
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	08/22/07
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	0.000	5.000			U	08/22/07
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	08/22/07
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	08/22/07
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L					U	08/22/07
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L					U	08/22/07
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Acetone	67-64-1	7.4	7.400	ug/L						08/22/07
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	08/22/07
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	48.670	97.300	% Recov	84.000	116.000				08/22/07
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	08/22/07
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L					U	08/22/07
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	41.740	83.500	% Recov	82.000	136.000				08/22/07
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L					U	08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071433
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L					U	08/22/07
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	08/22/07
BLANK	Toluene-d8(Surr)	2037-26-5	49.770	99.500	% Recov	89.000	119.000				08/22/07
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	08/22/07
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	08/22/07
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	08/22/07
LCS	1,1-Dichloroethene	75-35-4	24.110	96.400	% Recov	70.000	130.000				08/23/07
LCS	Benzene	71-43-2	25.640	103.000	% Recov	70.000	130.000				08/23/07
LCS	4-Bromofluorobenzene(Surr)	460-00-4	47.620	95.200	% Recov	84.000	116.000				08/23/07
LCS	Chlorobenzene	108-90-7	21.500	86.000	% Recov	70.000	130.000				08/23/07
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	41.840	83.700	% Recov	82.000	136.000				08/23/07
LCS	Toluene-d8(Surr)	2037-26-5	51.230	102.000	% Recov	89.000	119.000				08/23/07
LCS	Toluene	108-88-3	25.930	104.000	% Recov	70.000	130.000				08/23/07
LCS	Trichloroethene	79-01-6	20.400	81.600	% Recov	70.000	130.000				08/23/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071455
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/15/07
Receive Date:08/15/07

Lab ID: W07GR02158
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	1,1-Dichloroethene	75-35-4	26.930	108.000	% Recov	63.000	117.000				08/16/07
MS	Benzene	71-43-2	24.870	99.500	% Recov	75.000	129.000				08/16/07
MS	4-Bromofluorobenzene(Surr)	460-00-4	47.330	94.700	% Recov	84.000	116.000				08/16/07
MS	Chlorobenzene	108-90-7	21.460	85.800	% Recov	79.000	119.000				08/16/07
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	42.080	84.200	% Recov	82.000	136.000				08/16/07
MS	Toluene-d8(Surr)	2037-26-5	49.370	98.700	% Recov	89.000	119.000				08/16/07
MS	Toluene	108-88-3	25.250	101.000	% Recov	76.000	120.000				08/16/07
MS	Trichloroethene	79-01-6	21.570	86.300	% Recov	73.000	123.000				08/16/07
MSD	1,1-Dichloroethene	75-35-4	26.070	104.000	% Recov	63.000	117.000				08/16/07
MSD	Benzene	71-43-2	25.000	100.000	% Recov	75.000	129.000				08/16/07
MSD	4-Bromofluorobenzene(Surr)	460-00-4	47.810	95.600	% Recov	84.000	116.000				08/16/07
MSD	Chlorobenzene	108-90-7	21.170	84.700	% Recov	79.000	119.000				08/16/07
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	43.020	86.000	% Recov	82.000	136.000				08/16/07
MSD	Toluene-d8(Surr)	2037-26-5	51.890	104.000	% Recov	89.000	119.000				08/16/07
MSD	Toluene	108-88-3	25.280	101.000	% Recov	76.000	120.000				08/16/07
MSD	Trichloroethene	79-01-6	20.540	82.200	% Recov	73.000	123.000				08/16/07
SPK-RPD	1,1-Dichloroethene	75-35-4	104.000		RPD			3.774	20.000		08/16/07
SPK-RPD	Benzene	71-43-2	100.000		RPD			0.501	20.000		08/16/07
SPK-RPD	Chlorobenzene	108-90-7	84.700		RPD			1.290	20.000		08/16/07
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	86.000		RPD			2.115	20.000		08/16/07
SPK-RPD	Toluene-d8(Surr)	2037-26-5	104.000		RPD			5.229	20.000		08/16/07
SPK-RPD	Toluene	108-88-3	101.000		RPD			0.000	20.000		08/16/07
SPK-RPD	Trichloroethene	79-01-6	82.200		RPD			4.866	20.000		08/16/07
SURR	4-Bromofluorobenzene(Surr)	460-00-4	48.160	96.300	% Recov	84.000	116.000				08/16/07
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	42.730	85.500	% Recov	82.000	136.000				08/16/07
SURR	Toluene-d8(Surr)	2037-26-5	49.760	99.500	% Recov	89.000	119.000				08/16/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071455
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/15/07
Receive Date:08/15/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02159											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	48.070	96.100	% Recov	84.000	116.000				08/16/07
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	42.200	84.400	% Recov	82.000	136.000				08/16/07
SURR	Toluene-d8(Surr)	2037-26-5	51.100	102.000	% Recov	89.000	119.000				08/16/07
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	08/16/07
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	08/16/07
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	08/16/07
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	0.000	5.000			U	08/16/07
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	08/16/07
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	08/16/07
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L					U	08/16/07
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L					U	08/16/07
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	08/16/07
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	47.720	95.400	% Recov	84.000	116.000				08/16/07
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	08/16/07
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L					U	08/16/07
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	42.650	85.300	% Recov	82.000	136.000				08/16/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20071455
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L					U	08/16/07
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	08/16/07
BLANK	Toluene-d8(Surr)	2037-26-5	48.620	97.200	% Recov	89.000	119.000				08/16/07
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	08/16/07
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	08/16/07
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	08/16/07
LCS	1,1-Dichloroethene	75-35-4	26.850	107.000	% Recov	70.000	130.000				08/16/07
LCS	Benzene	71-43-2	25.720	103.000	% Recov	70.000	130.000				08/16/07
LCS	4-Bromofluorobenzene(Surr)	460-00-4	47.370	94.700	% Recov	84.000	116.000				08/16/07
LCS	Chlorobenzene	108-90-7	22.120	88.500	% Recov	70.000	130.000				08/16/07
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	42.220	84.400	% Recov	82.000	136.000				08/16/07
LCS	Toluene-d8(Surr)	2037-26-5	49.570	99.100	% Recov	89.000	119.000				08/16/07
LCS	Toluene	108-88-3	25.600	102.000	% Recov	70.000	130.000				08/16/07
LCS	Trichloroethene	79-01-6	21.350	85.400	% Recov	70.000	130.000				08/16/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20072125
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 11/29/07
Receive Date:11/29/07

Lab ID: W07GR03134
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	1,1-Dichloroethene	75-35-4	20.230	80.900	% Recov	63.000	117.000				12/05/07
MS	Benzene	71-43-2	25.750	103.000	% Recov	75.000	129.000				12/05/07
MS	4-Bromofluorobenzene(Surr)	460-00-4	51.780	104.000	% Recov	75.000	125.000				12/05/07
MS	Chlorobenzene	108-90-7	26.220	105.000	% Recov	79.000	119.000				12/05/07
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	51.640	103.000	% Recov	75.000	125.000				12/05/07
MS	Toluene-d8(Surr)	2037-26-5	51.180	102.000	% Recov	75.000	125.000				12/05/07
MS	Toluene	108-88-3	25.780	103.000	% Recov	76.000	120.000				12/05/07
MS	Trichloroethene	79-01-6	19.050	76.200	% Recov	73.000	123.000				12/05/07
MSD	1,1-Dichloroethene	75-35-4	20.820	83.300	% Recov	63.000	117.000				12/05/07
MSD	Benzene	71-43-2	25.730	103.000	% Recov	75.000	129.000				12/05/07
MSD	4-Bromofluorobenzene(Surr)	460-00-4	50.600	101.000	% Recov	75.000	125.000				12/05/07
MSD	Chlorobenzene	108-90-7	26.900	108.000	% Recov	79.000	119.000				12/05/07
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	50.980	102.000	% Recov	75.000	125.000				12/05/07
MSD	Toluene-d8(Surr)	2037-26-5	51.520	103.000	% Recov	75.000	125.000				12/05/07
MSD	Toluene	108-88-3	25.620	102.000	% Recov	76.000	120.000				12/05/07
MSD	Trichloroethene	79-01-6	19.410	77.600	% Recov	73.000	123.000				12/05/07
SPK-RPD	1,1-Dichloroethene	75-35-4	83.300		RPD			2.923	20.000		12/05/07
SPK-RPD	Benzene	71-43-2	103.000		RPD			0.000	20.000		12/05/07
SPK-RPD	Chlorobenzene	108-90-7	108.000		RPD			2.817	20.000		12/05/07
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	102.000		RPD			0.976	20.000		12/05/07
SPK-RPD	Toluene-d8(Surr)	2037-26-5	103.000		RPD			0.976	20.000		12/05/07
SPK-RPD	Toluene	108-88-3	102.000		RPD			0.976	20.000		12/05/07
SPK-RPD	Trichloroethene	79-01-6	77.600		RPD			1.821	20.000		12/05/07
SURR	4-Bromofluorobenzene(Surr)	460-00-4	51.860	104.000	% Recov	75.000	125.000				12/05/07
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.070	104.000	% Recov	75.000	125.000				12/05/07
SURR	Toluene-d8(Surr)	2037-26-5	52.030	104.000	% Recov	75.000	125.000				12/05/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20072125
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 11/29/07
Receive Date:11/29/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR03135											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	51.540	103.000	% Recov	75.000	125.000				12/05/07
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.610	105.000	% Recov	75.000	125.000				12/05/07
SURR	Toluene-d8(Surr)	2037-26-5	51.660	103.000	% Recov	75.000	125.000				12/05/07
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	12/05/07
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	12/05/07
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	12/05/07
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 1.0	n/a	ug/L	0.000	5.000			U	12/05/07
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	12/05/07
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	12/05/07
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 1.0	n/a	ug/L					U	12/05/07
BLANK	2-Hexanone	591-78-6	< 1.0	n/a	ug/L					U	12/05/07
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Acetone	67-64-1	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Bromodichloromethane	75-27-4	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	12/05/07
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	53.670	107.000	% Recov	75.000	125.000				12/05/07
BLANK	Bromoform	75-25-2	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Dibromochloromethane	124-48-1	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	12/05/07
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Chloroethane	75-00-3	< 1.0	n/a	ug/L					U	12/05/07
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.610	105.000	% Recov	75.000	125.000				12/05/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20072125
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	1,2-Dichloropropane	78-87-5	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Bromomethane	74-83-9	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Chloromethane	74-87-3	< 1.0	n/a	ug/L					U	12/05/07
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Methylenechloride	75-09-2	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Styrene	100-42-5	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	12/05/07
BLANK	Toluene-d8(Surr)	2037-26-5	50.760	102.000	% Recov	75.000	125.000				12/05/07
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	12/05/07
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	12/05/07
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	12/05/07
LCS	1,1-Dichloroethene	75-35-4	19.610	78.400	% Recov	75.000	125.000				12/06/07
LCS	Benzene	71-43-2	26.470	106.000	% Recov	75.000	125.000				12/06/07
LCS	4-Bromofluorobenzene(Surr)	460-00-4	52.610	105.000	% Recov	75.000	125.000				12/06/07
LCS	Chlorobenzene	108-90-7	27.770	111.000	% Recov	75.000	125.000				12/06/07
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	50.070	100.000	% Recov	75.000	125.000				12/06/07
LCS	Toluene-d8(Surr)	2037-26-5	50.410	101.000	% Recov	75.000	125.000				12/06/07
LCS	Toluene	108-88-3	26.530	106.000	% Recov	75.000	125.000				12/06/07
LCS	Trichloroethene	79-01-6	19.500	78.000	% Recov	75.000	125.000				12/06/07

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90678
Project Number F09-009

QC Batch 53858
Associated Samples 90678001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #10848**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	06/30/09
Trichloroethene	79-01-6		<1	ug/L					U	06/30/09
Benzene	71-43-2		<1	ug/L					U	06/30/09
Toluene	108-88-3		<1	ug/L					U	06/30/09
Chlorobenzene	108-90-7		<1	ug/L					U	06/30/09
1,1-Dichloroethane	75-34-3		<1	ug/L					U	06/30/09
Ethylbenzene	100-41-4		<1	ug/L					U	06/30/09
Styrene	100-42-5		<1	ug/L					U	06/30/09
cis-1,3-Dichloropropene	10061-01-5		<1	ug/L					U	06/30/09
trans-1,3-Dichloroprope	10061-02-6		<1	ug/L					U	06/30/09
1,2-Dichloroethane	107-06-2		<1	ug/L					U	06/30/09
Methyl isobutyl ketone	108-10-1		<1	ug/L					U	06/30/09
Dibromochloromethane	124-48-1		<1	ug/L					U	06/30/09
Tetrachloroethene	127-18-4		<1	ug/L					U	06/30/09
Total Xylenes	1330-20-7		<1	ug/L					U	06/30/09
Total	540-59-0		<1	ug/L					U	06/30/09
Carbon tetrachloride	56-23-5		<1	ug/L					U	06/30/09
2-Hexanone	591-78-6		<1	ug/L					U	06/30/09
Acetone	67-64-1		<1	ug/L					U	06/30/09
Chloroform	67-66-3		<1	ug/L					U	06/30/09
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	06/30/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90678
Project Number F09-009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Bromomethane	74-83-9		<1	ug/L					U	06/30/09
Chloromethane	74-87-3		<1	ug/L					U	06/30/09
Chloroethane	75-00-3		<1	ug/L					U	06/30/09
Vinyl chloride	75-01-4		<1	ug/L					U	06/30/09
Methylene chloride	75-09-2		<1	ug/L					U	06/30/09
Carbon disulfide	75-15-0		<1	ug/L					U	06/30/09
Bromoform	75-25-2		<1	ug/L					U	06/30/09
Bromodichloromethane	75-27-4		<1	ug/L					U	06/30/09
1,2-Dichloropropane	78-87-5		<1	ug/L					U	06/30/09
Methyl ethyl ketone	78-93-3		<1	ug/L					U	06/30/09
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	06/30/09
1,1,2,2-Tetrachloroetha	79-34-5		<1	ug/L					U	06/30/09
LCS			**QC Sample #10849**							
1,1-Dichloroethene	75-35-4		20	ug/L	81.4	75 - 125				06/30/09
Trichloroethene	79-01-6		21	ug/L	82.6	75 - 125				06/30/09
Benzene	71-43-2		24	ug/L	96.9	75 - 125				06/30/09
Toluene	108-88-3		25	ug/L	99.2	75 - 125				06/30/09
Chlorobenzene	108-90-7		25	ug/L	98.2	75 - 125				06/30/09
MS			**QC Sample #10850**							
			Original 90678001							
1,1-Dichloroethene	75-35-4	<1	23	ug/L	92.4	75 - 125				06/30/09
Trichloroethene	79-01-6	4.0	24	ug/L	95	75 - 125				06/30/09
Benzene	71-43-2	<1	24	ug/L	97	75 - 125				06/30/09
Toluene	108-88-3	<1	25	ug/L	101.4	75 - 125				06/30/09
Chlorobenzene	108-90-7	<1	24	ug/L	97.4	75 - 125				06/30/09
MSD			**QC Sample #10851**							
			Original 90678001					**Paired 10850**		

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90678
Project Number F09-009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
1,1-Dichloroethene	75-35-4	<1	23	ug/L	92.8	75 - 125	0.40	20		06/30/09
Trichloroethene	79-01-6	4.0	24	ug/L	96.7	75 - 125	1.80	20		06/30/09
Benzene	71-43-2	<1	24	ug/L	97.7	75 - 125	0.70	20		06/30/09
Toluene	108-88-3	<1	25	ug/L	101.4	75 - 125	0.00	20		06/30/09
Chlorobenzene	108-90-7	<1	25	ug/L	100.7	75 - 125	3.30	20		06/30/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90678
Project Number F09-009

QC Batch 53858
Associated Samples 90678001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #10848**							
1,2-Dichloroethane-d4	17060-07-0				109.1	75 - 125				06/30/09
Toluene-d8	2037-26-5				98.3	75 - 125				06/30/09
4-Bromofluorobenzene	460-00-4				97.7	75 - 125				06/30/09
LCS			**QC Sample #10849**							
1,2-Dichloroethane-d4	17060-07-0				110.2	75 - 125				06/30/09
Toluene-d8	2037-26-5				98.6	75 - 125				06/30/09
4-Bromofluorobenzene	460-00-4				97.3	75 - 125				06/30/09
MS			**QC Sample #10850**							
			Original 90678001							
1,2-Dichloroethane-d4	17060-07-0				113.2	75 - 125				06/30/09
Toluene-d8	2037-26-5				98.9	75 - 125				06/30/09
4-Bromofluorobenzene	460-00-4				97.6	75 - 125				06/30/09
MSD			**QC Sample #10851**							
			Original 90678001					**Paired**	**10850**	
1,2-Dichloroethane-d4	17060-07-0				115.6	75 - 125	2.10	20		06/30/09
Toluene-d8	2037-26-5				99.3	75 - 125	0.40	20		06/30/09
4-Bromofluorobenzene	460-00-4				98.5	75 - 125	0.90	20		06/30/09
SAMPLE			**Sample #90678001**							
1,2-Dichloroethane-d4	17060-07-0				113.3	75 - 125				06/30/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90678
Project Number F09-009

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				99.6	75 - 125				06/30/09
4-Bromofluorobenzene	460-00-4				97.4	75 - 125				06/30/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90895

QC Batch 58440
Associated Samples 90895001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13392**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	08/20/09
Trichloroethene	79-01-6		<1	ug/L					U	08/20/09
Benzene	71-43-2		<1	ug/L					U	08/20/09
Toluene	108-88-3		<1	ug/L					U	08/20/09
Chlorobenzene	108-90-7		<1	ug/L					U	08/20/09
1,1-Dichloroethane	75-34-3		<1	ug/L					U	08/20/09
Ethylbenzene	100-41-4		<1	ug/L					U	08/20/09
Styrene	100-42-5		<1	ug/L					U	08/20/09
cis-1,3-Dichloropropene	10061-01-5		<1	ug/L					U	08/20/09
trans-1,3-Dichloroprope	10061-02-6		<1	ug/L					U	08/20/09
1,2-Dichloroethane	107-06-2		<1	ug/L					U	08/20/09
Methyl isobutyl ketone	108-10-1		<1	ug/L					U	08/20/09
Dibromochloromethane	124-48-1		<1	ug/L					U	08/20/09
Tetrachloroethene	127-18-4		<1	ug/L					U	08/20/09
Total Xylenes	1330-20-7		<1	ug/L					U	08/20/09
Total	540-59-0		<1	ug/L					U	08/20/09
Carbon tetrachloride	56-23-5		<1	ug/L					U	08/20/09
2-Hexanone	591-78-6		<1	ug/L					U	08/20/09
Acetone	67-64-1		<1	ug/L					U	08/20/09
Chloroform	67-66-3		<1	ug/L					U	08/20/09
1,1,1-Trichloroethane	71-55-6		<1	ug/L					U	08/20/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90895

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Bromomethane	74-83-9		<1	ug/L					U	08/20/09
Chloromethane	74-87-3		<1	ug/L					U	08/20/09
Chloroethane	75-00-3		<1	ug/L					U	08/20/09
Vinyl chloride	75-01-4		<1	ug/L					U	08/20/09
Methylene chloride	75-09-2		<1	ug/L					U	08/20/09
Carbon disulfide	75-15-0		<1	ug/L					U	08/20/09
Bromoform	75-25-2		<1	ug/L					U	08/20/09
Bromodichloromethane	75-27-4		<1	ug/L					U	08/20/09
1,2-Dichloropropane	78-87-5		<1	ug/L					U	08/20/09
Methyl ethyl ketone	78-93-3		<1	ug/L					U	08/20/09
1,1,2-Trichloroethane	79-00-5		<1	ug/L					U	08/20/09
1,1,2,2-Tetrachloroetha	79-34-5		<1	ug/L					U	08/20/09
LCS			**QC Sample #13393**							
1,1-Dichloroethene	75-35-4		20	ug/L	78.7	75 - 125				08/20/09
Trichloroethene	79-01-6		21	ug/L	82.4	75 - 125				08/20/09
Benzene	71-43-2		20	ug/L	79.4	75 - 125				08/20/09
Toluene	108-88-3		22	ug/L	87.6	75 - 125				08/20/09
Chlorobenzene	108-90-7		25	ug/L	100.8	75 - 125				08/20/09
MS			**QC Sample #13394**							
			Original 90887042							
1,1-Dichloroethene	75-35-4		19	ug/L	77.8	75 - 125				08/20/09
Trichloroethene	79-01-6		21	ug/L	82.5	75 - 125				08/20/09
Benzene	71-43-2		19	ug/L	77.7	75 - 125				08/20/09
Toluene	108-88-3		21	ug/L	85.9	75 - 125				08/20/09
Chlorobenzene	108-90-7		24	ug/L	97.4	75 - 125				08/20/09
MSD			**QC Sample #13395**							
			Original 90887042					**Paired 13394**		

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90895

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
1,1-Dichloroethene	75-35-4		19	ug/L	75.9	75 - 125	2.50	20		08/20/09
Trichloroethene	79-01-6		21	ug/L	82.2	75 - 125	0.40	20		08/20/09
Benzene	71-43-2		19	ug/L	77.3	75 - 125	0.50	20		08/20/09
Toluene	108-88-3		21	ug/L	85.4	75 - 125	0.60	20		08/20/09
Chlorobenzene	108-90-7		24	ug/L	96.5	75 - 125	0.90	20		08/20/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90895

QC Batch 58440
Associated Samples 90895001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13392**							
1,2-Dichloroethane-d4	17060-07-0				81.6	75 - 125				08/20/09
Toluene-d8	2037-26-5				93.3	75 - 125				08/20/09
4-Bromofluorobenzene	460-00-4				90.9	75 - 125				08/20/09
LCS			**QC Sample #13393**							
1,2-Dichloroethane-d4	17060-07-0				83.3	75 - 125				08/20/09
Toluene-d8	2037-26-5				93.4	75 - 125				08/20/09
4-Bromofluorobenzene	460-00-4				90.6	75 - 125				08/20/09
MS			**QC Sample #13394**							
			Original 90887042							
1,2-Dichloroethane-d4	17060-07-0				82.7	75 - 125				08/20/09
Toluene-d8	2037-26-5				93.6	75 - 125				08/20/09
4-Bromofluorobenzene	460-00-4				91.7	75 - 125				08/20/09
MSD			**QC Sample #13395**							
			Original 90887042					**Paired**	**13394**	
1,2-Dichloroethane-d4	17060-07-0				83.1	75 - 125	0.50	20		08/20/09
Toluene-d8	2037-26-5				93.6	75 - 125	0.00	20		08/20/09
4-Bromofluorobenzene	460-00-4				91.4	75 - 125	0.30	20		08/20/09
SAMPLE			**Sample #90895001**							
1,2-Dichloroethane-d4	17060-07-0				85	75 - 125				08/20/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90895

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				93.9	75 - 125				08/20/09
4-Bromofluorobenzene	460-00-4				91.4	75 - 125				08/20/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90900
Project Number F09-043

QC Batch 57737
Associated Samples 90900001, 90900002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13330**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	08/18/09
Trichloroethene	79-01-6		<1	ug/L					U	08/18/09
Benzene	71-43-2		<1	ug/L					U	08/18/09
Toluene	108-88-3		<1	ug/L					U	08/18/09
Chlorobenzene	108-90-7		<1	ug/L					U	08/18/09
Carbon tetrachloride	56-23-5		<1	ug/L					U	08/18/09
Chloroform	67-66-3		<1	ug/L					U	08/18/09
LCS			**QC Sample #13331**							
1,1-Dichloroethene	75-35-4		20	ug/L	80.8	75 - 125				08/18/09
Trichloroethene	79-01-6		19	ug/L	77.6	75 - 125				08/18/09
Benzene	71-43-2		21	ug/L	85.1	75 - 125				08/18/09
Toluene	108-88-3		20	ug/L	79	75 - 125				08/18/09
Chlorobenzene	108-90-7		22	ug/L	90	75 - 125				08/18/09
MS			**QC Sample #13332**							
			Original 90889001							
1,1-Dichloroethene	75-35-4		19	ug/L	75.9	75 - 125				08/18/09
Trichloroethene	79-01-6		21	ug/L	82.5	75 - 125				08/18/09
Benzene	71-43-2		20	ug/L	78.2	75 - 125				08/18/09
Toluene	108-88-3		21	ug/L	83	75 - 125				08/18/09
Chlorobenzene	108-90-7		24	ug/L	94.5	75 - 125				08/18/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90900
Project Number F09-043

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MSD			**QC Sample #13333**							
			Original 90889001						**Paired 13332**	
1,1-Dichloroethene	75-35-4		19	ug/L	75.3	75 - 125	0.80	20		08/18/09
Trichloroethene	79-01-6		21	ug/L	83	75 - 125	0.60	20		08/18/09
Benzene	71-43-2		19	ug/L	76.1	75 - 125	2.70	20		08/18/09
Toluene	108-88-3		21	ug/L	83.9	75 - 125	1.10	20		08/18/09
Chlorobenzene	108-90-7		24	ug/L	96	75 - 125	1.60	20		08/18/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90900
Project Number F09-043

QC Batch 57737
Associated Samples 90900001, 90900002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13330**							
1,2-Dichloroethane-d4	17060-07-0				82.1	75 - 125				08/18/09
Toluene-d8	2037-26-5				91.9	75 - 125				08/18/09
4-Bromofluorobenzene	460-00-4				93.4	75 - 125				08/18/09
LCS			**QC Sample #13331**							
1,2-Dichloroethane-d4	17060-07-0				82.9	75 - 125				08/18/09
Toluene-d8	2037-26-5				92.2	75 - 125				08/18/09
4-Bromofluorobenzene	460-00-4				94	75 - 125				08/18/09
MS			**QC Sample #13332**							
			Original 90889001							
1,2-Dichloroethane-d4	17060-07-0				83	75 - 125				08/18/09
Toluene-d8	2037-26-5				92.6	75 - 125				08/18/09
4-Bromofluorobenzene	460-00-4				92.2	75 - 125				08/18/09
MSD			**QC Sample #13333**							
			Original 90889001					**Paired**	**13332**	
1,2-Dichloroethane-d4	17060-07-0				83.1	75 - 125	0.10	20		08/18/09
Toluene-d8	2037-26-5				92.8	75 - 125	0.20	20		08/18/09
4-Bromofluorobenzene	460-00-4				92	75 - 125	0.20	20		08/18/09
SAMPLE			**Sample #90900001**							
1,2-Dichloroethane-d4	17060-07-0				85.6	75 - 125				08/18/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF90900
Project Number F09-043

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				93.3	75 - 125				08/18/09
4-Bromofluorobenzene	460-00-4				91.6	75 - 125				08/18/09
SAMPLE			**Sample #90900002**							
1,2-Dichloroethane-d4	17060-07-0				85.7	75 - 125				08/18/09
Toluene-d8	2037-26-5				93.2	75 - 125				08/18/09
4-Bromofluorobenzene	460-00-4				93.5	75 - 125				08/18/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF91148

QC Batch 64469
Associated Samples 91148001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #15667**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	09/25/09
Trichloroethene	79-01-6		<1	ug/L					U	09/25/09
Benzene	71-43-2		<1	ug/L					U	09/25/09
Toluene	108-88-3		<1	ug/L					U	09/25/09
Chlorobenzene	108-90-7		<1	ug/L					U	09/25/09
Carbon tetrachloride	56-23-5		<1	ug/L					U	09/25/09
Chloroform	67-66-3		<1	ug/L					U	09/25/09
LCS			**QC Sample #15668**							
1,1-Dichloroethene	75-35-4		29	ug/L	116.3	75 - 125				09/25/09
Trichloroethene	79-01-6		22	ug/L	89.8	75 - 125				09/25/09
Benzene	71-43-2		24	ug/L	97.5	75 - 125				09/25/09
Toluene	108-88-3		24	ug/L	97.4	75 - 125				09/25/09
Chlorobenzene	108-90-7		24	ug/L	95.6	75 - 125				09/25/09
MS			**QC Sample #15669**							
			Original 91123001							
1,1-Dichloroethene	75-35-4		21	ug/L	84.1	75 - 125				09/25/09
Trichloroethene	79-01-6		20	ug/L	80.8	75 - 125				09/25/09
Benzene	71-43-2		22	ug/L	88.9	75 - 125				09/25/09
Toluene	108-88-3		22	ug/L	89.8	75 - 125				09/25/09
Chlorobenzene	108-90-7		23	ug/L	92.8	75 - 125				09/25/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF91148

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
MSD			**QC Sample #15670**							
			Original 91123001						**Paired 15669**	
1,1-Dichloroethene	75-35-4		22	ug/L	87	75 - 125	3.40	20		09/25/09
Trichloroethene	79-01-6		20	ug/L	81.6	75 - 125	1.00	20		09/25/09
Benzene	71-43-2		23	ug/L	90.4	75 - 125	1.70	20		09/25/09
Toluene	108-88-3		23	ug/L	91.4	75 - 125	1.80	20		09/25/09
Chlorobenzene	108-90-7		24	ug/L	94.4	75 - 125	1.70	20		09/25/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF91148

QC Batch 64469
Associated Samples 91148001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #15667**							
1,2-Dichloroethane-d4	17060-07-0				78.7	75 - 125				09/25/09
Toluene-d8	2037-26-5				97.7	75 - 125				09/25/09
4-Bromofluorobenzene	460-00-4				98.6	75 - 125				09/25/09
LCS			**QC Sample #15668**							
1,2-Dichloroethane-d4	17060-07-0				80	75 - 125				09/25/09
Toluene-d8	2037-26-5				97.2	75 - 125				09/25/09
4-Bromofluorobenzene	460-00-4				98.6	75 - 125				09/25/09
MS			**QC Sample #15669**							
			Original	**91123001**						
1,2-Dichloroethane-d4	17060-07-0				79.5	75 - 125				09/25/09
Toluene-d8	2037-26-5				99.4	75 - 125				09/25/09
4-Bromofluorobenzene	460-00-4				99.1	75 - 125				09/25/09
MSD			**QC Sample #15670**							
			Original	**91123001**					**Paired**	**15669**
1,2-Dichloroethane-d4	17060-07-0				80	75 - 125	0.60	20		09/25/09
Toluene-d8	2037-26-5				99.6	75 - 125	0.20	20		09/25/09
4-Bromofluorobenzene	460-00-4				99.2	75 - 125	0.10	20		09/25/09
SAMPLE			**Sample #91148001**							
1,2-Dichloroethane-d4	17060-07-0				80.3	75 - 125				09/25/09

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF91148

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				99.6	75 - 125				09/25/09
4-Bromofluorobenzene	460-00-4				99.4	75 - 125				09/25/09

Date: 14 April 2010
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: CPP 200 Area, 200 Area SGRP, and 200 Area
Subject: Semivolatile Organics - Sample Data Groups (SDGs) WSCF20042209, WSCF20042338, WSCF20050155 and WSCF20051157

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF20042209, WSCF20042338, WSCF20050155 and WSCF20051157 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
B1BJC2	11/22/2004	Water	C	8270C & WTPH-D
B1BJD9	12/07/2004	Water	C	8270C & WTPH-D
B1BJH6	1/25/2005	Water	C	8270C & WTPH-D
B1D7K5	6/01/2005	Water	C	8270C & WTPH-D

Data validation was conducted in accordance with the CHPRC validation statement of work and the Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network, DOE/RL-2002-17, Rev. 0 (SAP).

Appendices 1 through 6 provide the following information as indicated below:

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

DATA QUALITY OBJECTIVES

- **Holding Times and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirements for semivolatile organics are extraction within 7 days of sample collection and analysis within 40 days of sample extraction. Sample preservation requires chilling to 4 degrees Celsius. The holding time requirements for WTPH-D are extraction within 14 days of sample collection and analysis within 40 days of sample extraction. Sample preservation requires chilling to 4 degrees Celsius and acid preservation with hydrochloric acid to pH <2.

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 with the following exceptions.

For SDG WSCF20051157, the bis(2-ethylhexyl)phthalate and diethylphthalate laboratory blank results were > the method detection limits (MDLs). The associated results for sample B1D7K5 were detects (SAP required detection limits not provided) <5X the blank results and would be qualified as non-detects at the measured sample concentrations and flagged "U," but were further flagged "UJ" due to a low surrogate recovery.

Trip Blanks

No trip blanks were submitted for analysis.

Field Blanks

No field blanks were submitted for analysis.

Equipment Blanks

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated by reviewing surrogate results, matrix spike sample results, and laboratory control sample results. According to the SAP, the laboratory control sample and matrix spike accuracy limits are the ones specified in the associated U.S. EPA analytical procedures. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

Surrogates

All surrogate recoveries were acceptable with the following exceptions.

For SDG WSCF20042209, the 2-fluorophenol, 2,4,6-tribromophenol and terphenyl-d14 recoveries for sample B1BJC2 were below the lower acceptance limits but >10%. The class of reported sample results associated with these three surrogates were all 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 WSCF20042338, the terphenyl-d14 recovery for sample B1BJD9 was below the lower acceptance limit but >10%. The class of reported sample results associated with this surrogate were all 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 WSCF20051157, the phenol-d5 recovery for sample B1D7K5 was below the lower acceptance limit but >10%. The class of reported sample results associated with this surrogate were all 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.

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

All MS/MSD recoveries were acceptable.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exception.

For SDG WSCF20051157, the LCS recovery for pentachlorophenol was below the lower acceptance limit. The pentachlorophenol, 2,4,5-trichlorophenol and 2,4,6-trichlorophenol results for sample B1D7K5 were non-detects and should be qualified as estimates and flagged "UJ."

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the RPD limits are the ones specified in the associated U.S. EPA analytical procedures. 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 required detection limits with differences <1X the required detection limits no precision infraction occurred.

MS/MSD Samples

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

For SDG WSCF20042209, the kerosene RPD was above the upper acceptance limit. The diesel and kerosene results for sample B1BJC2 were non-detects and should be qualified as estimates and flagged "UJ."

Field Duplicate Samples

No field duplicates were submitted for analysis.

Field Split Samples

No field splits were submitted for analysis.

- **Detection Limits**

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

For SDGs WSCF20042209, WSCF20042338, WSCF20050155 and WSCF20051157, SVOA and WTPH-D CRDLs were not provided in the SAP.

- **Completeness**

SDGs WSCF20042209, WSCF20042338, WSCF20050155 and WSCF20051157 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

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.

For SDGs WSCF20042209, WSCF20042338 and WSCF20050155, COC-requested analyte 3-methylphenol was not reported for samples B1BJC2, B1BJD9 and B1BJH6.

REFERENCES

HNF-20433, Rev. 0, *Data Validation Procedure for Chemical Analyses*, June 2004.

DOE/RL-2002-17, Rev. 0, *Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network*, June 2002.

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 MDL. 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.

- **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

Semivolatile Organics Data Qualification Summary			
SDG: See Comments	Reviewer: AQA	Project: CPP 200 Area, 200 Area SGRP, and 200 Area	Page 1 of 2
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
2-Chlorophenol 2,4-Dichlorophenol 4-Chloro-3-methylphenol 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol Pentachlorophenol Bis(2-chloroethyl)ether Bis(2-chloro-1-methylethyl)ether Bis(2-chloroethoxy)methane 4-Chlorophenylphenyl ether 4-Bromophenylphenyl ether Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene	UJ	B1BJC2	Low surrogate recoveries
Diesel Kerosene	UJ	B1BJC2	Poor MS/MSD precision

Semivolatile Organics Data Qualification Summary			
SDG: See Comments	Reviewer: AQA	Project: CPP 200 Area, 200 Area SGRP, and 200 Area	Page 2 of 2
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene	UJ	B1BJD9	Low surrogate recoveries
Bis(2-ethylhexyl)phthalate	2.8UJ	B1D7K5	Laboratory blank contamination and low surrogate recovery
Diethyl phthalate	0.61UJ	B1D7K5	Laboratory blank contamination and low surrogate recovery
Pentachlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	UJ	B1D7K5	Low LCS recovery
Phenol 2-Methylphenol 3+4 Methylphenol total 2,4-dimethylphenol 2-Nitrophenol 4-Nitrophenol 2,4-Dinitrophenol Dimethyl phthalate Di-n-butyl phthalate Butylbenzylphthalate Di-n-octylphthalate Isophorone Dibenzofuran	UJ	B1D7K5	Low surrogate recovery

Comments: SDGs WSCF20042209, WSCF20042338, WSCF20050155 and WSCF20051157

Appendix 3

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic															
W040002315	B1BJC2	TRENT	100-02-7		4-Nitrophenol	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	106-46-7		1,4-Dichlorobenzene	WATER	LA-523-456	U	< 4.80	ug/L	1.00	4.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-95-2		Phenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	120-82-1		1,2,4-Trichlorobenzene	WATER	LA-523-456	U	< 2.90	ug/L	1.00	2.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	121-14-2		2,4-Dinitrotoluene	WATER	LA-523-456	U	< 1.70	ug/L	1.00	1.7	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	129-00-0	UJ	Pyrene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	59-50-7	UJ	4-Chloro-3-methylphenol	WATER	LA-523-456	U	< 1.20	ug/L	1.00	1.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	621-64-7		N-Nitrosodi-n-dipropylamine	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	83-32-9	UJ	Acenaphthene	WATER	LA-523-456	U	< 2.30	ug/L	1.00	2.3	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	87-86-5	UJ	Pentachlorophenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	95-57-8	UJ	2-Chlorophenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	100-01-6		4-Nitroaniline	WATER	LA-523-456	U	< 2.80	ug/L	1.00	2.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	101-55-3	UJ	4-Bromophenylphenyl ether	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	105-67-9		2,4-Dimethylphenol	WATER	LA-523-456	U	< 4.10	ug/L	1.00	4.1	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	106-47-8		4-Chloroaniline	WATER	LA-523-456	U	< 6.90	ug/L	1.00	6.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-60-1	UJ	Bis(2-chloro-1-methylethyl)eth	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	111-44-4	UJ	Bis(2-chloroethyl) ether	WATER	LA-523-456	U	< 3.20	ug/L	1.00	3.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	111-91-1	UJ	Bis(2-Chloroethoxy)methane	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	117-81-7		Bis(2-ethylhexyl) phthalate	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	117-84-0		Di-n-octylphthalate	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	118-74-1		Hexachlorobenzene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	120-12-7	UJ	Anthracene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	120-83-2	UJ	2,4-Dichlorophenol	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	131-11-3		Dimethyl phthalate	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	132-64-9		Dibenzofuran	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	191-24-2	UJ	Benzo(ghi)perylene	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	12/02/04	11/22/04	11/22/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002315	B1BJC2	TRENT	193-39-5	UJ	Indeno(1,2,3-cd)pyrene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	205-99-2	UJ	Benzo(b)fluoranthene	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	206-44-0	UJ	Fluoranthene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	207-08-9	UJ	Benzo(k)fluoranthene	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	208-96-8	UJ	Acenaphthylene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	218-01-9	UJ	Chrysene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	50-32-8	UJ	Benzo(a)pyrene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	51-28-5		2,4-Dinitrophenol	WATER	LA-523-456	U	< 3.10	ug/L	1.00	3.1	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	53-70-3		Dibenz[a,h]anthracene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	534-52-1		4,6-Dinitro-2-methylphenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	541-73-1		1,3-Dichlorobenzene	WATER	LA-523-456	U	< 5.00	ug/L	1.00	5.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	56-55-3	UJ	Benzo(a)anthracene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	606-20-2		2,6-Dinitrotoluene	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7005-72-3	UJ	4-Chlorophenylphenyl ether	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	77-47-4		Hexachlorocyclopentadiene	WATER	LA-523-456	U	< 7.40	ug/L	1.00	7.4	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	78-59-1		Isophorone	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	84-66-2		Diethylphthalate	WATER	LA-523-456	U	< 6.00	ug/L	1.00	6.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	84-74-2		Di-n-butylphthalate	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	85-01-8	UJ	Phenanthrene	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	85-68-7		Butylbenzylphthalate	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	86-30-6		N-Nitrosodiphenylamine	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	86-73-7	UJ	Fluorene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	86-74-8		Carbazole	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	87-68-3		Hexachlorobutadiene	WATER	LA-523-456	U	< 3.40	ug/L	1.00	3.4	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	88-74-4		2-Nitroaniline	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	88-75-5		2-Nitrophenol	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	91-20-3	UJ	Naphthalene	WATER	LA-523-456	U	< 2.30	ug/L	1.00	2.3	12/02/04	11/22/04	11/22/04

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E - Analyte is an estimate, has potentially larger errors
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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002315	B1BJC2	TRENT	91-57-6		2-Methylnaphthalene	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	91-58-7		2-Chloronaphthalene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	91-94-1		3,3'-Dichlorobenzidine	WATER	LA-523-456	U	< 3.90	ug/L	1.00	3.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	95-48-7		2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	95-50-1		1,2-Dichlorobenzene	WATER	LA-523-456	U	< 4.00	ug/L	1.00	4.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	95-95-4	UJ	2,4,5-Trichlorophenol	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	98-95-3		Nitrobenzene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	99-09-2		3-Nitroaniline	WATER	LA-523-456	U	< 4.30	ug/L	1.00	4.3	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	65794-96-9		3 & 4 Methylphenol Total	WATER	LA-523-456	U	< 3.00	ug/L	1.00	3.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	67-72-1		Hexachloroethane	WATER	LA-523-456	U	< 5.20	ug/L	1.00	5.2	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	88-06-2	UJ	2,4,6-Trichlorophenol	WATER	LA-523-456	U	< 2.30	ug/L	1.00	2.3	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-35-4		1,1-Dichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-88-3		Toluene	WATER	LA-523-455	BJ	1.20	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	10061-01-5		cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	10061-02-6		trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	108-10-1		4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	540-59-0		1,2-Dichloroethene(Total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W040002315~~	~~B1BJC2~~	~~TRENT~~		~~56-23-5~~	~~Carbon tetrachloride~~	~~WATER~~	~~LA-523-455~~		~~670~~	~~ug/L~~	~~1.00~~	~~10~~	~~12/06/04~~	~~11/22/04~~	~~11/22/04~~
W040002315	B1BJC2	TRENT		591-78-6	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		67-64-1	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		67-66-3	Chloroform	WATER	LA-523-455		81.0	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		71-55-6	1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		74-83-9	Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		79-34-5	1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		74-87-3	Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		75-00-3	Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		75-01-4	Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		75-09-2	Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	LS	75-15-0	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	4-14-2010	75-25-2	Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		75-27-4	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		78-87-5	1,2-Dichloropropane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		78-93-3	2-Butanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT		156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
~~W040002315~~	~~B1BJC2~~	~~TRENT~~		~~156-59-2~~	~~cis-1,2-Dichloroethylene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~12/02/04~~	~~11/22/04~~	~~11/22/04~~
W040002315	B1BJC2	TRENT	UJ	TPHDIESEL	Total Pet. Hydrocarbons Diesel	WATER	NWTPH	U	< 74.0	ug/L	1.00	74	11/30/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	UJ	TPHKEROSENE	Kerosene	WATER	NWTPH	U	< 74.0	ug/L	1.00	74	11/30/04	11/22/04	11/22/04
~~W040002316~~	~~B1BJC9~~	~~TRENT~~		~~75-35-4~~	~~1,1-Dichloroethene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~12/02/04~~	~~11/22/04~~	~~11/22/04~~
W040002316	B1BJC9	TRENT		79-01-6	Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT		71-43-2	Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
W040002316	B1BJC9	TRENT		108-88-3	Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/02/04	11/22/04	11/22/04
~~W040002316~~	~~B1BJC9~~	~~TRENT~~		~~108-90-7~~	~~Chlorobenzene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~12/02/04~~	~~11/22/04~~	~~11/22/04~~

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic																
W040002540	B1BJD9	GRP	TRENT	100-02-7		4-Nitrophenol	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	106-46-7		1,4-Dichlorobenzene	WATER	LA-523-456	U	< 4.80	ug/L	1.00	4.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-95-2		Phenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	120-82-1		1,2,4-Trichlorobenzene	WATER	LA-523-456	U	< 2.90	ug/L	1.00	2.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	121-14-2		2,4-Dinitrotoluene	WATER	LA-523-456	U	< 1.70	ug/L	1.00	1.7	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	129-00-0	UJ	Pyrene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	59-50-7		4-Chloro-3-methylphenol	WATER	LA-523-456	U	< 1.20	ug/L	1.00	1.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	621-64-7		N-Nitrosodi-n-dipropylamine	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	83-32-9	UJ	Acenaphthene	WATER	LA-523-456	U	< 2.30	ug/L	1.00	2.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	87-86-5		Pentachlorophenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	95-57-8		2-Chlorophenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	100-01-6		4-Nitroaniline	WATER	LA-523-456	U	< 2.80	ug/L	1.00	2.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	101-55-3		4-Bromophenylphenyl ether	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	105-67-9		2,4-Dimethylphenol	WATER	LA-523-456	U	< 4.10	ug/L	1.00	4.1	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	106-47-8		4-Chloroaniline	WATER	LA-523-456	U	< 6.90	ug/L	1.00	6.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-60-1		Bis(2-chloro-1-methylethyl)eth	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	111-44-4		Bis(2-chloroethyl) ether	WATER	LA-523-456	U	< 3.20	ug/L	1.00	3.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	111-91-1		Bis(2-Chloroethoxy)methane	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	117-81-7		Bis(2-ethylhexyl) phthalate	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	117-84-0		Di-n-octylphthalate	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	118-74-1		Hexachlorobenzene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	120-12-7	UJ	Anthracene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	120-83-2		2,4-Dichlorophenol	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	131-11-3		Dimethyl phthalate	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	132-64-9		Dibenzofuran	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	191-24-2	UJ	Benzo(ghi)perylene	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	12/13/04	12/07/04	12/07/04

MDL = Minimum Detection Limit B - The analyte < the RDL but > = the IDL/MDL (inorganic) U - Analyzed for but not detected above limiting criteria.
RQ = Result Qualifier

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002540	B1BJD9	GRP	TRENT	193-39-5	UJ	Indeno(1,2,3-cd)pyrene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	205-99-2	UJ	Benzo(b)fluoranthene	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	206-44-0	UJ	Fluoranthene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	207-08-9	UJ	Benzo(k)fluoranthene	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	208-96-8	UJ	Acenaphthylene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	218-01-9	UJ	Chrysene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	50-32-8	UJ	Benzo(a)pyrene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	51-28-5		2,4-Dinitrophenol	WATER	LA-523-456	U	< 3.10	ug/L	1.00	3.1	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	53-70-3		Dibenz[a,h]anthracene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	534-52-1		4,6-Dinitro-2-methylphenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	541-73-1		1,3-Dichlorobenzene	WATER	LA-523-456	U	< 5.00	ug/L	1.00	5.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	56-55-3	UJ	Benzo(a)anthracene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	606-20-2		2,6-Dinitrotoluene	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7005-72-3		4-Chlorophenylphenyl ether	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	77-47-4		Hexachlorocyclopentadiene	WATER	LA-523-456	U	< 7.40	ug/L	1.00	7.4	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	78-59-1		Isophorone	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	84-66-2		Diethylphthalate	WATER	LA-523-456	U	< 6.00	ug/L	1.00	6.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	84-74-2		Di-n-butylphthalate	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	85-01-8	UJ	Phenanthrene	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	85-68-7		Butylbenzylphthalate	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	86-30-6		N-Nitrosodiphenylamine	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	86-73-7	UJ	Fluorene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	86-74-8		Carbazole	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	87-68-3		Hexachlorobutadiene	WATER	LA-523-456	U	< 3.40	ug/L	1.00	3.4	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	88-74-4		2-Nitroaniline	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	88-75-5		2-Nitrophenol	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	91-20-3	UJ	Naphthalene	WATER	LA-523-456	U	< 2.30	ug/L	1.00	2.3	12/13/04	12/07/04	12/07/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

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U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002540	B1BJD9	GRP	TRENT	91-57-6	2-Methylnaphthalene	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	91-58-7	2-Chloronaphthalene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	91-94-1	3,3'-Dichlorobenzidine	WATER	LA-523-456	U	< 3.90	ug/L	1.00	3.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	95-48-7	2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	95-50-1	1,2-Dichlorobenzene	WATER	LA-523-456	U	< 4.00	ug/L	1.00	4.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	95-95-4	2,4,5-Trichlorophenol	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	98-95-3	Nitrobenzene	WATER	LA-523-456	U	< 1.90	ug/L	1.00	1.9	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	99-09-2	3-Nitroaniline	WATER	LA-523-456	U	< 4.30	ug/L	1.00	4.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	65794-96-9	3 & 4 Methylphenol Total	WATER	LA-523-456	U	< 3.00	ug/L	1.00	3.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	67-72-1	Hexachloroethane	WATER	LA-523-456	U	< 5.20	ug/L	1.00	5.2	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	88-06-2	2,4,6-Trichlorophenol	WATER	LA-523-456	U	< 2.30	ug/L	1.00	2.3	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-35-4	1,1-Dichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	79-01-6	Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	71-43-2	Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-88-3	Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-90-7	Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-34-3	1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	100-41-4	Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	100-42-5	Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	107-06-2	1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	124-48-1	Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	127-18-4	Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	1330-20-7	Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04

LS
4-14-2010

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RQ = Result Qualifier

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002540	B1BJD9	GRP	TRENT	56-23-5	Carbon tetrachloride	WATER	LA-523-455		840	ug/L	1.00	10	12/14/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	591-78-6	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	67-64-1	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	67-66-3	Chloroform	WATER	LA-523-455		17.0	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	74-83-9	Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	74-87-3	Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-00-3	Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-01-4	Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-09-2	Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-15-0	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-25-2	Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	75-27-4	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	78-87-5	1,2-Dichloropropane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	78-93-3	2-Butanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	WATER	NWTPH	U	< 72.0	ug/L	1.00	72	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	TPHKEROSENE	Kerosene	WATER	NWTPH	U	< 72.0	ug/L	1.00	72	12/07/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	75-35-4	1,1-Dichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	79-01-6	Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	71-43-2	Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	108-88-3	Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04
W040002544	B1BJF6	GRP	TRENT	108-90-7	Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	12/13/04	12/07/04	12/07/04

LS 4-14-2010

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic														
W050000144	B1BJH6	TRENT	100-02-7	4-Nitrophenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	106-46-7	1,4-Dichlorobenzene	WATER	LA-523-456	U	< 5.90	ug/L	1.00	5.9	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-95-2	Phenol	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	120-82-1	1,2,4-Trichlorobenzene	WATER	LA-523-456	U	< 3.50	ug/L	1.00	3.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	121-14-2	2,4-Dinitrotoluene	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	129-00-0	Pyrene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	59-50-7	4-Chloro-3-methylphenol	WATER	LA-523-456	U	< 1.50	ug/L	1.00	1.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	83-32-9	Acenaphthene	WATER	LA-523-456	U	< 2.80	ug/L	1.00	2.8	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	87-86-5	Pentachlorophenol	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	95-57-8	2-Chlorophenol	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	100-01-6	4-Nitroaniline	WATER	LA-523-456	U	< 3.40	ug/L	1.00	3.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	101-55-3	4-Bromophenylphenyl ether	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	105-67-9	2,4-Dimethylphenol	WATER	LA-523-456	U	< 5.10	ug/L	1.00	5.1	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	106-47-8	4-Chloroaniline	WATER	LA-523-456	U	< 8.50	ug/L	1.00	8.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-60-1	Bis(2-chloro-1-methylethyl)eth	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	111-44-4	Bis(2-chloroethyl) ether	WATER	LA-523-456	U	< 4.00	ug/L	1.00	4.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	111-91-1	Bis(2-Chloroethoxy)methane	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	117-81-7	Bis(2-ethylhexyl) phthalate	WATER	LA-523-456	U	< 3.10	ug/L	1.00	3.1	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	117-84-0	Di-n-octylphthalate	WATER	LA-523-456	U	< 2.90	ug/L	1.00	2.9	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	118-74-1	Hexachlorobenzene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	120-12-7	Anthracene	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	120-83-2	2,4-Dichlorophenol	WATER	LA-523-456	U	< 1.60	ug/L	1.00	1.6	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	131-11-3	Dimethyl phthalate	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	132-64-9	Dibenzofuran	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	191-24-2	Benzo(ghi)perylene	WATER	LA-523-456	U	< 2.90	ug/L	1.00	2.9	02/02/05	01/25/05	01/25/05

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000144	B1BJH6	TRENT	193-39-5	Indeno(1,2,3-cd)pyrene	WATER	LA-523-456	U	< 3.10	ug/L	1.00	3.1	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	205-99-2	Benzo(b)fluoranthene	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	206-44-0	Fluoranthene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	207-08-9	Benzo(k)fluoranthene	WATER	LA-523-456	U	< 3.30	ug/L	1.00	3.3	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	208-96-8	Acenaphthylene	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	218-01-9	Chrysene	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	50-32-8	Benzo(a)pyrene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	51-28-5	2,4-Dinitrophenol	WATER	LA-523-456	U	< 3.90	ug/L	1.00	3.9	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	53-70-3	Dibenz[a,h]anthracene	WATER	LA-523-456	U	< 3.10	ug/L	1.00	3.1	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	534-52-1	4,6-Dinitro-2-methylphenol	WATER	LA-523-456	U	< 2.00	ug/L	1.00	2.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	541-73-1	1,3-Dichlorobenzene	WATER	LA-523-456	U	< 6.10	ug/L	1.00	6.1	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	56-55-3	Benzo(a)anthracene	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	606-20-2	2,6-Dinitrotoluene	WATER	LA-523-456	U	< 2.60	ug/L	1.00	2.6	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7005-72-3	4-Chlorophenylphenyl ether	WATER	LA-523-456	U	< 2.60	ug/L	1.00	2.6	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	77-47-4	Hexachlorocyclopentadiene	WATER	LA-523-456	U	< 9.20	ug/L	1.00	9.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	78-59-1	Isophorone	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	84-66-2	Diethylphthalate	WATER	LA-523-456	U	< 7.40	ug/L	1.00	7.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	84-74-2	Di-n-butylphthalate	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	85-01-8	Phenanthrene	WATER	LA-523-456	U	< 2.60	ug/L	1.00	2.6	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	85-68-7	Butylbenzylphthalate	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	86-30-6	N-Nitrosodiphenylamine	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	86-73-7	Fluorene	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	86-74-8	Carbazole	WATER	LA-523-456	U	< 1.70	ug/L	1.00	1.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	87-68-3	Hexachlorobutadiene	WATER	LA-523-456	U	< 4.20	ug/L	1.00	4.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	88-74-4	2-Nitroaniline	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	88-75-5	2-Nitrophenol	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	91-20-3	Naphthalene	WATER	LA-523-456	U	< 2.80	ug/L	1.00	2.8	02/02/05	01/25/05	01/25/05

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000144	B1BJH6	TRENT	91-57-6	2-Methylnaphthalene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	91-58-7	2-Chloronaphthalene	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	91-94-1	3,3'-Dichlorobenzidine	WATER	LA-523-456	U	< 4.80	ug/L	1.00	4.8	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	95-48-7	2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	95-50-1	1,2-Dichlorobenzene	WATER	LA-523-456	U	< 4.90	ug/L	1.00	4.9	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	95-95-4	2,4,5-Trichlorophenol	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	98-95-3	Nitrobenzene	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	99-09-2	3-Nitroaniline	WATER	LA-523-456	U	< 5.30	ug/L	1.00	5.3	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	65794-96-9	3 & 4 Methylphenol Total	WATER	LA-523-456	U	< 3.80	ug/L	1.00	3.8	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	67-72-1	Hexachloroethane	WATER	LA-523-456	U	< 6.50	ug/L	1.00	6.5	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	88-06-2	2,4,6-Trichlorophenol	WATER	LA-523-456	U	< 2.80	ug/L	1.00	2.8	02/02/05	01/25/05	01/25/05
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~75-35-4~~	~~1,1-Dichloroethene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~02/07/05~~	~~01/25/05~~	~~01/25/05~~
W050000144	B1BJH6	TRENT	79-01-6	Trichloroethene	WATER	LA-523-455		22.0	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	71-43-2	Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-88-3	Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-90-7	Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-34-3	1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	100-41-4	Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	100-42-5	Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	10061-01-5	cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	10061-02-6	trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	107-06-2	1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	108-10-1	4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	124-48-1	Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	127-18-4	Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	1330-20-7	Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~540-59-0~~	~~1,2-Dichloroethene(Total)~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~02/07/05~~	~~01/25/05~~	~~01/25/05~~

LS
4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
J - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
C - The Analyte was found in the Associated Blank.
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~56-23-5~~	~~Carbon tetrachloride~~	~~WATER~~	~~LA-523-455~~		~~1.60e+03~~	~~ug/L~~	~~1.00~~	~~30~~	~~02/08/05~~	~~01/25/05~~	~~01/25/05~~
W050000144	B1BJH6	TRENT	591-78-6	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	67-64-1	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	67-66-3	Chloroform	WATER	LA-523-455		37.0	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	71-55-6	1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	74-83-9	Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	74-87-3	Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-00-3	Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-01-4	Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-09-2	Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-15-0	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-25-2	Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	75-27-4	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	78-87-5	1,2-Dichloropropane LS	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	78-93-3	2-Butanone 4-14-2010	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
~~W050000144~~	~~B1BJH6~~	~~TRENT~~	~~156-59-2~~	~~cis-1,2-Dichloroethylene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~02/07/05~~	~~01/25/05~~	~~01/25/05~~
W050000144	B1BJH6	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	WATER	NWTPH	U	< 87.0	ug/L	1.00	87	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	TPHKEROSENE	Kerosene	WATER	NWTPH	U	< 87.0	ug/L	1.00	87	02/01/05	01/25/05	01/25/05
~~W050000148~~	~~B1BJJ3~~	~~TRENT~~	~~75-35-4~~	~~1,1-Dichloroethene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~02/07/05~~	~~01/25/05~~	~~01/25/05~~
W050000148	B1BJJ3	TRENT	79-01-6	Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	71-43-2	Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
W050000148	B1BJJ3	TRENT	108-88-3	Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	02/07/05	01/25/05	01/25/05
~~W050000148~~	~~B1BJJ3~~	~~TRENT~~	~~108-90-7~~	~~Chlorobenzene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~02/07/05~~	~~01/25/05~~	~~01/25/05~~

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J - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
C - The Analyte was found in the Associated Blank.
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DF = Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic															
W050001669	B1D7K5	TRENT	100-02-7	UJ	4-Nitrophenol	WATER	LA-523-456	U	< 1.10	ug/L	1.00	1.1	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	106-46-7		1,4-Dichlorobenzene	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	108-95-2	UJ	Phenol	WATER	LA-523-456	U	< 0.560	ug/L	1.00	0.56	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	120-82-1		1,2,4-Trichlorobenzene	WATER	LA-523-456	U	< 1.70	ug/L	1.00	1.7	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	121-14-2		2,4-Dinitrotoluene	WATER	LA-523-456	U	< 0.370	ug/L	1.00	0.37	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	129-00-0		Pyrene	WATER	LA-523-456	U	< 0.320	ug/L	1.00	0.32	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	59-50-7		4-Chloro-3-methylphenol	WATER	LA-523-456	U	< 0.460	ug/L	1.00	0.46	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	621-64-7		N-Nitrosodi-n-dipropylamine	WATER	LA-523-456	U	< 0.450	ug/L	1.00	0.45	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	83-32-9		Acenaphthene	WATER	LA-523-456	U	< 2.70	ug/L	1.00	2.7	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	87-86-5	UJ	Pentachlorophenol	WATER	LA-523-456	U	< 0.640	ug/L	1.00	0.64	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	95-57-8		2-Chlorophenol	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	100-01-6		4-Nitroaniline	WATER	LA-523-456	U	< 0.390	ug/L	1.00	0.39	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	101-55-3		4-Bromophenylphenyl ether	WATER	LA-523-456	U	< 1.80	ug/L	1.00	1.8	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	105-67-9	UJ	2,4-Dimethylphenol	WATER	LA-523-456	U	< 1.70	ug/L	1.00	1.7	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	108-47-8		4-Chloroaniline	WATER	LA-523-456	U	< 0.550	ug/L	1.00	0.55	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	108-60-1		Bis(2-chloro-1-methylethyl)eth	WATER	LA-523-456	U	< 1.40	ug/L	1.00	1.4	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	111-44-4		Bis(2-chloroethyl) ether	WATER	LA-523-456	U	< 0.230	ug/L	1.00	0.23	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	111-91-1		Bis(2-Chloroethoxy)methene	WATER	LA-523-456	U	< 0.300	ug/L	1.00	0.30	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	117-81-7	2.8UJ	Bis(2-ethylhexyl) phthalate	WATER	LA-523-456	B	2.80	ug/L	1.00	0.78	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	117-84-0	UJ	Di-n-octylphthalate	WATER	LA-523-456	U	< 1.40	ug/L	1.00	1.4	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	118-74-1		Hexachlorobenzene	WATER	LA-523-456	U	< 1.10	ug/L	1.00	1.1	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	120-12-7		Anthracene	WATER	LA-523-456	U	< 0.810	ug/L	1.00	0.81	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	120-83-2		2,4-Dichlorophenol	WATER	LA-523-456	U	< 0.510	ug/L	1.00	0.51	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	131-11-3	UJ	Dimethyl phthalate	WATER	LA-523-456	U	< 0.330	ug/L	1.00	0.33	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	132-64-9		Dibenzofuran	WATER	LA-523-456	U	< 2.50	ug/L	1.00	2.5	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	191-24-2		Benzo(ghi)perylene	WATER	LA-523-456	U	< 0.870	ug/L	1.00	0.87	06/13/05	06/01/05	06/01/05

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B - The analyte < the RDL but > = the IDL/MDL (inorganic)
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DF=Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050001669	B1D7K5	TRENT	193-39-5		Indeno(1,2,3-cd)pyrene	WATER	LA-523-456	U	< 0.830	ug/L	1.00	0.83	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	205-99-2		Benzo(b)fluoranthene	WATER	LA-523-456	U	< 0.360	ug/L	1.00	0.36	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	206-44-0		Fluoranthene	WATER	LA-523-456	U	< 0.510	ug/L	1.00	0.51	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	207-08-9		Benzo(k)fluoranthene	WATER	LA-523-456	U	< 0.380	ug/L	1.00	0.38	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	208-96-8		Acenaphthylene	WATER	LA-523-456	U	< 2.40	ug/L	1.00	2.4	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	218-01-9		Chrysene	WATER	LA-523-456	U	< 0.300	ug/L	1.00	0.30	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	50-32-8		Benzo(a)pyrene	WATER	LA-523-456	U	< 0.520	ug/L	1.00	0.52	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	51-28-5	UJ	2,4-Dinitrophenol	WATER	LA-523-456	U	< 0.500	ug/L	1.00	0.50	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	53-70-3		Dibenz[a,h]anthracene	WATER	LA-523-456	U	< 0.950	ug/L	1.00	0.95	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	534-52-1		4,6-Dinitro-2-methylphenol	WATER	LA-523-456	U	< 0.520	ug/L	1.00	0.52	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	541-73-1		1,3-Dichlorobenzene	WATER	LA-523-456	U	< 1.20	ug/L	1.00	1.2	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	56-55-3		Benzo(a)anthracene	WATER	LA-523-456	U	< 0.410	ug/L	1.00	0.41	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	606-20-2		2,6-Dinitrotoluene	WATER	LA-523-456	U	< 0.330	ug/L	1.00	0.33	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7005-72-3		4-Chlorophenylphenyl ether	WATER	LA-523-456	U	< 2.10	ug/L	1.00	2.1	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	77-47-4		Hexachlorocyclopentadiene	WATER	LA-523-456	U	< 0.600	ug/L	1.00	0.60	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	78-59-1	UJ	Isophorone	WATER	LA-523-456	U	< 0.430	ug/L	1.00	0.43	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	84-66-2	0.61UJ	Diethylphthalate	WATER	LA-523-456	BJ	0.610	ug/L	1.00	0.53	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	84-74-2	UJ	Di-n-butylphthalate	WATER	LA-523-456	U	< 0.440	ug/L	1.00	0.44	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	85-01-8		Phenanthrene	WATER	LA-523-456	U	< 1.20	ug/L	1.00	1.2	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	85-68-7	UJ	Butylbenzylphthalate	WATER	LA-523-456	U	< 1.40	ug/L	1.00	1.4	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	86-30-6		N-Nitrosodiphenylamine	WATER	LA-523-456	U	< 0.520	ug/L	1.00	0.52	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	86-73-7		Fluorene	WATER	LA-523-456	U	< 2.20	ug/L	1.00	2.2	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	86-74-8		Carbazole	WATER	LA-523-456	U	< 0.400	ug/L	1.00	0.40	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	87-68-3		Hexachlorobutadiene	WATER	LA-523-456	U	< 1.30	ug/L	1.00	1.3	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	88-74-4		2-Nitroaniline	WATER	LA-523-456	U	< 0.410	ug/L	1.00	0.41	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	88-75-5	UJ	2-Nitrophenol	WATER	LA-523-456	U	< 0.550	ug/L	1.00	0.55	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	91-20-3		Naphthalene	WATER	LA-523-456	U	< 1.40	ug/L	1.00	1.4	06/13/05	06/01/05	06/01/05

MDL = Minimum Detection Limit
RQ = Result Qualifier

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J - Analyte is an estimate, has potentially larger errors
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050001669	B1D7K5	TRENT	91-57-6		2-Methylnaphthalene	WATER	LA-523-456	U	< 3.30	ug/L	1.00	3.3	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	91-58-7	UJ	2-Chloronaphthalene	WATER	LA-523-456	U	< 3.80	ug/L	1.00	3.8	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	91-94-1		3,3'-Dichlorobanzidine	WATER	LA-523-456	U	< 0.990	ug/L	1.00	0.99	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	95-48-7	UJ	2-Methylphenol (cresol, o-)	WATER	LA-523-456	U	< 0.240	ug/L	1.00	0.24	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	95-50-1		1,2-Dichlorobenzene	WATER	LA-523-456	U	< 1.40	ug/L	1.00	1.4	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	95-95-4	UJ	2,4,5-Trichlorophenol	WATER	LA-523-456	U	< 0.780	ug/L	1.00	0.78	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	98-95-3		Nitrobenzene	WATER	LA-523-456	U	< 0.930	ug/L	1.00	0.93	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	99-09-2		3-Nitroaniline	WATER	LA-523-456	U	< 0.440	ug/L	1.00	0.44	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	65794-96-9	UJ	3 & 4 Methylphenol Total	WATER	LA-523-456	U	< 0.620	ug/L	1.00	0.62	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	67-72-1		Haxachloroethane	WATER	LA-523-456	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	88-06-2	UJ	2,4,6-Trichlorophenol	WATER	LA-523-456	U	< 0.490	ug/L	1.00	0.49	06/13/05	06/01/05	06/01/05
~~W050001669~~	~~B1D7K5-A~~	~~TRENT~~	~~75-35-4~~		~~1,1-Dichloroethene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~
W050001669	B1D7K5-A	TRENT	79-01-6		Trichloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	71-43-2		Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	108-88-3		Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	108-90-7		Chlorobenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-34-3		1,1-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	100-41-4		Ethylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	100-42-5		Styrene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	10061-01-5		cis-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	10061-02-6		trans-1,3-Dichloropropene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	107-06-2		1,2-Dichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	108-10-1		4-Methyl-2-Pentanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	124-48-1		Dibromochloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	127-18-4		Tetrachloroethene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	1330-20-7		Xylenes (total)	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
~~W050001669~~	~~B1D7K5-A~~	~~TRENT~~	~~540-59-0~~		~~1,2-Dichloroethene(Total)~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~

Dayes 3/2/07

MDL = Minimum Detection Limit
RQ = Result Qualifier

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J - Analyte is an estimate, has potentially larger errors
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
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DF = Dilution Factor

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

REVISED Dayes 3/2/07

LS 4-14-2010

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W050001669~~	~~B1D7K5-A~~	~~TRENT~~	~~56-23-5~~	~~Carbon tetrachloride~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~
W050001669	B1D7K5-A	TRENT	591-78-6	2-Hexanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	67-64-1	Acetone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	67-66-3	Chloroform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	71-55-6	1,1,1-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	74-83-9	Bromomethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	74-87-3	Chloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-00-3	Chloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-01-4	Vinyl chloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-09-2	Methylenechloride	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-15-0	Carbon disulfide	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-25-2	Bromoform	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	75-27-4	Bromodichloromethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	78-87-5	1,2-Dichloropropane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	78-93-3	2-Butanone	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	79-00-5	1,1,2-Trichloroethane	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	104-51-8	n-Butylbenzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001669	B1D7K5-A	TRENT	156-60-5	trans-1,2-Dichloroethylene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
~~W050001669~~	~~B1D7K5-A~~	~~TRENT~~	~~156-59-2~~	~~cis-1,2-Dichloroethylene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~
W050001669	B1D7K5	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	WATER	NWTPH	U	< 72.0	ug/L	1.00	1.2e+02	06/09/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	TPHKEROSENE	Kerosene	WATER	NWTPH	U	< 72.0	ug/L	1.00	1.2e+02	06/09/05	06/01/05	06/01/05
~~W050001670~~	~~B1D7Y4~~	~~TRENT~~	~~75-35-4~~	~~1,1-Dichloroethene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~
W050001670	B1D7Y4	TRENT	79-01-6	Trichloroethene	WATER	LA-523-455		5.40	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	71-43-2	Benzene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	108-88-3	Toluene	WATER	LA-523-455	U	< 1.00	ug/L	1.00	1.0	06/13/05	06/01/05	06/01/05
~~W050001670~~	~~B1D7Y4~~	~~TRENT~~	~~108-90-7~~	~~Chlorobenzene~~	~~WATER~~	~~LA-523-455~~	~~U~~	~~< 1.00~~	~~ug/L~~	~~1.00~~	~~1.0~~	~~06/13/05~~	~~06/01/05~~	~~06/01/05~~

DNyles 3/2/07

LS 4-14-2010

MDL = Minimum Detection Limit
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* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

REVISED DNyles 3/2/07

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042209**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4303, 240' – 250', GRP samples (B1BJC2 and B1BJC9) were received at the WSCF Laboratory on November 22, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx/Gx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Strontium-89/90 and Technetium-99) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 13 through 14 for QC details. Analytical Note:

- Nitrite - Sample B1BJC2 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 20 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Selenium – The analyte was detected in the associated preparation Blank sample and evaluated. Sample B1BJC2 result was C-flagged.
- Silver – Matrix Spike and Matrix Spike Duplicate recovery were below established laboratory limits. Sample B1BJC2 was E (estimate) flagged.
- Calcium, Magnesium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 21 through 28 for QC details. Analytical Notes:

- Preparation Date: 10-dec-2004.
- Barium, Manganese, Strontium and Zinc - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Mercury – The Laboratory Control Sample recovery was below established laboratory limits. Sample B1BJC2 result was below the detection limit and not flagged.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 29 for QC details. Analytical Note:

- Duplicate QC sample was analyzed on sample# PFP04-243-93 (SDG# 20042218, a non GPP group). pH QC samples are analyzed for laboratory controls only.

All other laboratory QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 40 for QC details. Analytical Notes:

- Preparation Date: 29-nov-2004.

- Terphenyl-d14 (surrogate) – Matrix Spike Duplicate recovery was below established laboratory limits and Matrix Spike/Spike Duplicate Relative Percent Difference exceeded the laboratory limits. The sample results were not flagged.

- 2-Fluorophenol, Terphenyl-d14 and 2,4,6-Tribromophenol (surrogates) were below established limits. The Matrix Spike and Matrix Spike Duplicate were analyzed on B1BJC2 and since no target compounds were detected, the sample was not re-analyzed or flagged.

All other QC controls are within the established limits.

TPHD-WA- The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 41 for QC details. Analytical Notes:

- Preparation Date: 24-nov-2004.

- Kerosene - Matrix Spike Duplicate Relative Percent Difference exceeded established laboratory limits. All other QC control samples were within limits and sample B1BJC2 result was not flagged.

All other QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 42 through 44 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9W0 (SDG# 20042208, SAF# F03-019).

- Toluene - sample B1BJC2 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

- Toluene - sample B1BJC2 result was B; analyte was detected in the associated Blank QC sample.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 46 through 51 for QC details. Analytical Note:

- Neptunium-237 – The Laboratory Control Sample recovery was below established laboratory limits. The sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	84.4
LCS		Sr-85	96.3
B1BJC2	W040002315	Sr-85	103.1
DUPLICATE	W040002315	Sr-85	85.0

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 1 OF 3
COLLECTOR: Alexander/Gent/Thomas M Alwood 11/22	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; ~~220~~ ft. open hole 240-250 ft RJG 11-18-04	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.: GPP-03-017	FIELD LOGBOOK NO.: — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.:	BILL OF LADING/AIR BILL NO.:	

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

SPECIAL HANDLING AND/OR STORAGE: 20042209

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL RJG 11-9-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC2	WATER	11/22/04	10:00	✓✓✓	✓	✓	✓	✓	✓	✓	✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: M Alwood	DATE/TIME: 11/22/04 12:30	RECEIVED BY/STORED IN: RBabe RBabe	DATE/TIME: 11/22/04 1230
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-001	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N **AIR QUALITY** ☐	**DATA TURNAROUND** **45 Days**
SAMPLING LOCATION 200-ZP-1, C4303; ~~220 ft~~ open hole 240-250ft	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032		
ICE CHEST NO. GPP-03-017	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 3 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas Mahoud	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4303; 220 ft. GPP-03-017	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None						
TYPE OF CONTAINER	P	P	P	P						
NO. OF CONTAINER(S)	1	2	2	1						
VOLUME	1000mL	1000mL	1000mL	500mL						
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;						

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC2	WATER	11/22/04	10:00	✓	✓✓	✓✓	✓						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
Rorlaiuozl	11/22/4 12/35	KBeck KBecks	11/22/04 1730	Filtered
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-008	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas Mahood	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4303;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
GPP-03-017		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC9	WATER	11/22/04	10:00	✓									
2004000236													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. L. Mahood	11/22/04 12:30	[illegible]	11/22/04 1230
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

Filtered

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042338**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater, C4301, 270', GRP samples (B1BJD9 and B1BJF6) were received at the WSCF Laboratory on December 07, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.

- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium), GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. Analytical Notes:

- Nitrite - Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrite – The Duplicate Relative Percent Difference exceeded established laboratory limits. The RPD criterion is not applicable to sample results less than ten times the Method Detection Limit.

All other QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 26 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC3 (Lab Sample# W040002529, SDG# 20042296, SAF# F04-032).
- Manganese and Strontium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Matrix Spike precision was evaluated on sample# B19386 (SDG# 20042408, SAF# F04-014.)
- Calcium, Iron and Magnesium - The analytes detected in the associated preparation Blank. Sample was evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 27 for QC details. Laboratory Control samples and Duplicate samples were analyzed as per the GRP Letter of Instruction. Analytical Note:

- Sample Duplicate was analyzed on Sample #PFF-04-243-97 (non GRP sample).

All laboratory QC controls for the method were within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 09-dec-2004.
- Terphenyl-d14 (surrogate) – The Matrix Spike and Sample B1BJD9 surrogate recovery were less than the established laboratory limits. The Matrix Spike Relative Percent Difference exceeds established laboratory limits. Sample results were not flagged.

All other QC controls are within the established limits.

TPHD–WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike, Laboratory Control Sample and Laboratory Control Sample Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 39 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Matrix Spike QC sample was analyzed on sample# B1BJC3 (SDG# 20042296, SAF# F04-032).
- Precision was evaluated on the Laboratory Sample and Laboratory Sample Duplicate.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 42 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BRB2 (SDG# 20042308, SAF# F04-006).

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Matrix Spike (Technetium-99 only), Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 44 through 48 for QC details. Analytical Note:

- Technetium-99 - Matrix Spike and Duplicate QC samples were analyzed on sample# B1BXJ0 (SDG# 20042328, SAF# F04-006).

- Neptunium-237 – Laboratory Control Sample recovery was below established laboratory limits. Sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
BLANK		Sr-85	92.8
LCS		Sr-85	108.2
B1BJD9	W040002540	Sr-85	33.0
DUPLICATE	W040002540	Sr-85	38.0

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.

Herlene S. Rich
WSCF Production Control

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

1/4-05

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 1 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
200-ZP-1, C4301; ~~240ft~~ 270' DMG 12/7/04	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE: 20042338

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL RJA	~~150mL~~ 250mL 1-10-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJD9 W04002540	WATER	12/7/04	0930	X3	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT	12/7/04 2115	Victor Timms	12/07/04 12:15
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

FILTERED @ 0.45 µM

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-030	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240 ft.~~ 270' 12/7/04 PMG	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium}
ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 3 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4301; 240 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None								
TYPE OF CONTAINER	P	P	P	P								
NO. OF CONTAINER(S)	1	2	2	1								
VOLUME	1000mL	1000mL	1000mL	500mL								
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;								

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJD9	WATER	12/7/04	0930	X	X	X	X							

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	FILTERED @ 0.45 µm
PMGENT	12/7/04 12:15	Victor Sims	12/7/04 12:15	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-049	PAGE 1 OF 1

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301 ~~X240 R~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C												
TYPE OF CONTAINER	aGs*												
NO. OF CONTAINER(S)	3												
VOLUME	40mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJF6 W04002344	WATER	12/7/04	0830	X									

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
AMGENT/	12/7/04	Victor	12/7/04 1215

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20050155**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4302, 235' GRP samples (B1BJH6 and B1BJJ3) were received at the WSCF Laboratory on January 25, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Acknowledgement of Samples Received are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Note:

- Sample B1BJH6 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold time for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 09-feb-2005.
- Calcium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Silver, Calcium and Lithium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results, with the following exceptions: Sample B1BJH6 result was C-flagged for Lithium.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 24 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

pH - The hold time for this analysis was met. Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 25 for QC details. Analytical Note:

- Duplicate QC samples were analyzed on sample# B1C371 (SDG# 20050167, SAF# F02-001).

All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 32 through 37 for QC details. Analytical Notes:

- Preparation Date: 31-jan-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9N2 (SDG# 20050186, SAF# F03-019).
- Terphenyl-d14 (surrogate) – Matrix and Matrix Spike Duplicate recoveries were below established laboratory limits. Surrogate recovery for the sample was within limits and the sample B1BJH6 results were not flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 38 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 39 through 41 for QC details. Analytical Note:

- Carbon Tetrachloride - sample B1BJJ3 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 43 through 47 for QC details. Analytical Notes:

- Strontium-89/90 - Duplicate QC samples was analyzed on sample# B1BRC5 (SDG# 20050180, SAF# F02-003).

- Neptunium-237 – Duplicate Relative Percent Difference exceeded established laboratory limit and the Laboratory Control Sample recovery was below established laboratory limits. Sample result was X-flagged.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	69.0
LCS		Sr-85	101.4
B1BRC5	W050000169	Sr-85	69.6
DUPLICATE		Sr-85	80.6

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1BRC6	W050000170	Sr-85	71.0
B1BJH6	W050000144	Sr-85	76.8

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc. 2/24	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 1 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302; 235 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

20050155

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJH6	WATER	1/25/05	0745	X	X	X	X	X	X	X	X	X	X
W05000144													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RMGENT/[illegible]	1/25/05 1040	[illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-059	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4302; 235 ft.	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (HG); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 3 OF 3
COLLECTOR Alexander/Gent/Thomas	COMPANY CONTACT TRENT, SJ TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 7N DATA TURNAROUND AIR QUALITY ☐ 45 Days / 45 Days
SAMPLING LOCATION 200-ZP-1, C4302; 235 ft.	PROJECT DESIGNATION 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO. F04-032	
ICE CHEST NO.	FIELD LOGBOOK NO. COA 119325ES10	METHOD OF SHIPMENT Government Vehicle	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION			HNO3 to pH <2	HNO3 to pH <2	None	None						
TYPE OF CONTAINER			P	P	P	P						
NO. OF CONTAINER(S)			1	2	2	1						
VOLUME			1000mL	1000mL	1000mL	500mL						
SAMPLE ANALYSIS			Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;						
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1BJH6	WATER	1/25/05	0745	X	X	X	X					

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
PMGENT/	1/25/05 1640	K Bell K Bell	1/25/05 1640	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-078	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJJ3	WATER	1/25/05	0845	X									
W05C000148													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT/[illegible]	1/25/05 1040	[illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20051157, Rev. 1**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4694 (I-1), samples (B1D7K5 and B1D7Y4) were received at the WSCF Laboratory on June 1, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

Compliant to GRP direction on December 9, 2005, uranium analysis was performed on sample B1D7Y4. The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 47 through 48, for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).
- Sample B1D7K5 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

REVISED
Dhynes
1/3/06

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide – Sample was not analyzed for cyanide. Since the pH of the sample was less than 12, the analysis was cancelled.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 16 through 17 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Aluminum, Calcium and Magnesium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.
- Calcium, Magnesium and Sodium – Due to insufficient spike concentration, Matrix Spike Matrix Spike Duplicate and Spike Relative Percent Difference results are reported as "n/a".
- Aluminum – The Matrix Spike and Matrix Spike Duplicate recoveries are biased low. Sample B1D7K5 result is potentially biased low.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. For the uranium analysis, a Blank, Laboratory Control Sample and Duplicate QC samples were analyzed. There was not enough sample material for a Matrix Spike or Matrix Spike Duplicate Analysis. See pages 18 through 21a for QC details. Analytical Notes:

- Preparation Date: 13-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7K0 (SDG# 20051190, SAF# F04-032) for all metals except uranium.
- Strontium – Due to high sample concentrations, the Matrix Spike and Matrix Spike recoveries are reported as "n/a".
- Uranium Analysis – Added per client request on December 9, 2005. A Duplicate QC sample was analyzed on sample# B1D7K5.

All other QC controls are within the established limits.

REVISED Dayne 1/3/06

pH - The hold time for this analysis was met. A Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 22 for QC details. All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 29 through 34 for QC details. Analytical Notes:

- Preparation Date: 06-jun-2005.
- Bis (2-ethylhexyl) phthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was B flagged.
- Diethylphthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was less than the reportable detection limit, but greater than or equal to the method detection limit. Sample B1D7K5 result was BJ flagged.
- Phenol-5d (surrogate) – recovery was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.
- Pentachlorophenol – Laboratory Control Sample result was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 35 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 38 for QC details.

All QC controls are within the established limits.

REVISED
Dayes
1/3/06

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate QC

samples were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 44 for QC details. Analytical Note:

- Strontium-89/90 - Duplicate QC sample was analyzed on sample# B1CWD7 (SDG# 20051152, SAF# F02-003).

All QC controls are within the established limits.

- Uranium-234 and Uranium-235 - Additional Batch QC Data are summarized below:

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
Uranium-234/ Uranium-235				
BLANK		U-234	5.428E-02	
BLANK		U-235	2.232E-02	
B1D7K5	W050001669	U-234	1.182E+00	
DUPLICATE	W050001669	U-234	1.227E+00	3.7%
B1D7K5	W050001669	U-235	4.361E-02	
DUPLICATE	W050001669	U-235	4.716E-02	7.8%

- Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontrium-85			
BLANK		Sr-85	95.9%
LCS		Sr-85	89.6%
B1CWD7	W050001657	Sr-85	93.8%
DUPLICATE	W050001657	Sr-85	93.1%
B1D7K5	W050001669	Sr-85	81.6%

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1/3/06

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Uranium-232			
BLANK		U-232	74.8%
LCS		U-232	70.4%
B1D7K5	W050001669	U-232	91.2%
DUPLICATE	W050001669	U-232	86.2%

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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1/3/06

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 | PAGE 1 OF 2

COLLECTOR: Alexander/Gent/Mahood

COMPANY CONTACT: TRENT, SJ

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: TRENT, SJ

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

AIR QUALITY: ☐

SAMPLING LOCATION: 200-ZP-1, C4694, I-1

PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater

SAF NO.: F04-032

ICE CHEST NO.:

FIELD LOGBOOK NO.:

COA: 119325ES10

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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

2005157

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	G/P	P	G/P	G/P	G/P	G/P	aG	G/P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	5/26/05 ~~60mL~~ 125mL Rem	5/26/05 ~~150mL~~ 125mL Rem	5/26/05 ~~120mL~~ 125mL Rem	500mL	1000mL PDW P.O.Mu 6/29/2005	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	1210	3 ✓	4 ✓	✓	✓	✓	✓	✓	2 ✓	✓

W5000469

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.O. Mahood/Richard O. Mahood	6/1/5 1415	[illegible]	6/1/5 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {3+4 Methylphenol (cresol, m+p)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010B (TAL) {Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium} ICP Metals - 6010B (Add-On) {Boron, Lithium, Phosphorus, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

LABORATORY SECTION — RECEIVED BY | TITLE | DATE/TIME

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

REVISED R Dayes 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 PAGE 2 OF 2

COLLECTOR: Alexander/Gent/Mahood	COMPANY CONTACT: TRENT, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 7N	AIR QUALITY: [ ]	DATA TURNAROUND: 45 Days / 45 Days	
SAMPLING LOCATION: 200-ZP-1, C4694, I-1	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		SAF NO.: F04-032
ICE CHEST NO.	FIELD LOGBOOK NO.	COA: 119325ES10	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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	None	None	~~HCl to pH <2 CSSI~~			
TYPE OF CONTAINER	G/P	G/P	P	~~40m~~ ~~Rem 5/26/05~~ As			
NO. OF CONTAINER(S)	2	2	1	3			
VOLUME	1000mL	1000mL	500mL	~~40mL~~		Add	
SAMPLE ANALYSIS	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	~~Special Instructions~~ ~~All prep 1 of 2~~	5/31/05 Rem	Uranium - Isotopic PDhi P.O. Mix 6/18/2005	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	12:10	2✓	2✓	✓						
~~B1D7K5-A~~	~~WATER~~ Rem 5/31/05								Add Uranium analysis - ICP-MS PDhi P.O. Mix 12/22/2005			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
R.D. Mahood/Robert D. McLeod	6/1/5 1415	[illegible]	6/1/05 1415	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

REVISED RDAyers 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-169	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Mahood	TRENT, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
200-ZP-1, C4694, I-B1 Rem 6/1/05	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1D7Y4	WATER	6-1-5	1210	3 ✓									
[illegible]													

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Richard C. Mahood / R.C. Mahood	6/1/05 1415	[illegible]	6/1/05 1415
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)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

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A-6003-618(03/03)

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: CPP 200 Area, 200 Area SGRP, 200 Area			DATA PACKAGE: VSR10-014		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 4-14-2010	
			SDG: See below*		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270 X		SW-846 8270 (TCLP)

SAMPLES/MATRIX Water samples

SDG WSCF20042209: B1BJC2
SDG WSCF20042338: B1BJD9
SDG WSCF20050155: B1BJH6
SDG WSCF20051157: B1D7K5

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

None

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable? ..... Yes No (N/A)

Initial calibrations acceptable? ..... Yes No (N/A)

Continuing calibrations 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:

*WSCF20042209, WSCF20042338, WSCF20050155 & WSCF20051157

GC/MS ORGANIC DATA VALIDATION CHECKLIST

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

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank 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/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A

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

Comments:

WSCF20051157: MB detects (ug/L) - bis(2-ethylhexyl)phthalate (0.94); diethylphthalate (1.4)

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

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A

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

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

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? (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:

WSCF20042209 Surrogates: B1BJC2: 2-Fluorophenol %R = 44%; 2,4,6-Tribromophenol %R = 53%; Terphenyl-d14 %R = 29%. MSD: Terphenyl-d14 %R = 39% (does not affect field samples).
WSCF20042338 Surrogates: B1BJD9: Terphenyl-d14 %R = 44%. MS: Terphenyl-d14 %R = 51% (does not affect field samples).
WSCF20050155 Surrogates: MS/MSD: Terphenyl-d14 %Rs = 38%/33% (does not affect field samples).
WSCF20051157 Surrogates: B1D7K5: Phenol-d5 %R = 57%.

WSCF20051157: Pentachlorophenol LCS %R = 60%

WSCF20042209, WSCF20042338, WSCF20050155 & WSCF20051157: LCS and MS/MSD spiked with 11 common analytes only. All target analytes represented.

GC/MS ORGANIC DATA VALIDATION CHECKLIST

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

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

MS/MSD RPD values acceptable? ..... Yes No N/A

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

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

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

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

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

Comments: None

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? ..... Yes No N/A

Iinternal standard areas acceptable? ..... Yes No N/A

Internal standard retention times 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

GC/MS ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ..... Yes No N/A

Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A

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

Laboratory properly identified and coded all TIC? (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:

WSCF20042209, WSCF20042338, WSCF20050155 & WSCF20051157: No SVOA CRDLs provided in SAP.

WSCF20042209, WSCF20042338 & WSCF20050155: COC analyte 3-methylphenol not reported.

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed? ..... Yes No N/A

GPC check performed? ..... Yes No N/A

GPC check recoveries acceptable? ..... Yes No N/A

GPC calibration performed? ..... Yes No N/A

GPC calibration check performed? ..... Yes No N/A

GPC calibration check retention times acceptable? ..... Yes No N/A

Check/calibration materials traceable? ..... Yes No N/A

Check/calibration materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments:

GENERAL ORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: CPP 200 Area, 200 Area SGRP, 200 Area			DATA PACKAGE: VSR10-014		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 4-14-2010	
			SDG: See below*		
ANALYSES PERFORMED					
8015	8021	8141	8151	8315	8310
		WTPH-HCID	WTPH-G	WTPH-D X	

SAMPLES/MATRIX: Water samples

SDG WSCF20042209: B1BJC2
SDG WSCF20042338: B1BJD9
SDG WSCF20050155: B1BJH6
SDG WSCF20051157: B1D7K5

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments: None

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

Initial calibrations acceptable? ..... Yes No (N/A)

Continuing calibrations 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:

*WSCF20042209, WSCF20042338, WSCF20050155 and WSCF20051157

GENERAL ORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank 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/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip 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)

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A

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

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

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: None

GENERAL ORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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:

WSCF20042209: Kerosene MS/MSD RPD = 33%

6. HOLDING TIMES (all levels)

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

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

Comments: None

GENERAL ORGANIC ANALYSIS DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? ..... Yes No N/A

Rresults 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:

WSCF20042209, WSCF20042338, WSCF20050155 & WSCF20051157: No WTPH-D CRDLs provided in SAP.

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other aborbant) cleanup performed? ..... Yes No N/A

Lot check performed? ..... Yes No N/A

Check recoveries aceptable? ..... Yes No N/A

Check materials traceable? ..... Yes No N/A

Check materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments:

Appendix 6

Additional Documentation Requested By Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

Lab ID: W040002315
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,2,4-Trichlorobenzene	120-82-1	44.293	75.300	% Recov	12/02/04	50.000	120.000	
MS	1,4-Dichlorobenzene	106-46-7	40.595	69.000	% Recov	12/02/04	41.000	113.000	
MS	2,4-Dinitrotoluene	121-14-2	51.897	88.200	% Recov	12/02/04	65.000	109.000	
MS	2-Fluorophenol	367-12-4	48.422	82.300	% Recov	12/02/04	50.000	110.000	
MS	Acenaphthene	83-32-9	52.539	89.300	% Recov	12/02/04	62.000	112.000	
MS	4-Chloro-3-methylphenol	59-50-7	75.957	86.100	% Recov	12/02/04	59.000	115.000	
MS	2-Chlorophenol	95-57-8	72.506	82.200	% Recov	12/02/04	69.000	111.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	55.327	94.100	% Recov	12/02/04	69.000	115.000	
MS	2-Fluorobiphenyl	321-60-8	53.434	90.800	% Recov	12/02/04	58.000	109.000	
MS	Phenol	108-95-2	79.899	90.600	% Recov	12/02/04	59.000	115.000	
MS	Nitrobenzene-d5	4165-60-0	51.899	88.200	% Recov	12/02/04	60.000	118.000	
MS	4-Nitrophenol	100-02-7	69.427	78.700	% Recov	12/02/04	32.000	130.000	
MS	Pentachlorophenol	87-86-5	63.402	71.900	% Recov	12/02/04	51.000	121.000	
MS	Phenol-d5	4165-62-2	50.748	86.300	% Recov	12/02/04	59.000	116.000	
MS	Pyrene	129-00-0	49.032	83.400	% Recov	12/02/04	58.000	116.000	
MS	2,4,6-Tribromophenol	118-79-6	59.137	101.000	% Recov	12/02/04	60.000	120.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	49.943	84.900	% Recov	12/02/04	60.000	120.000	
MSD	1,2,4-Trichlorobenzene	120-82-1	32.989	69.300	% Recov	12/02/04	50.000	120.000	
MSD	1,4-Dichlorobenzene	106-46-7	32.866	69.000	% Recov	12/02/04	41.000	113.000	
MSD	2,4-Dinitrotoluene	121-14-2	39.214	82.300	% Recov	12/02/04	65.000	109.000	
MSD	2-Fluorophenol	367-12-4	34.154	71.700	% Recov	12/02/04	50.000	110.000	
MSD	Acenaphthene	83-32-9	40.482	85.000	% Recov	12/02/04	62.000	112.000	
MSD	4-Chloro-3-methylphenol	59-50-7	56.542	79.200	% Recov	12/02/04	59.000	115.000	
MSD	2-Chlorophenol	95-57-8	54.695	76.600	% Recov	12/02/04	69.000	111.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	40.342	84.700	% Recov	12/02/04	69.000	115.000	
MSD	2-Fluorobiphenyl	321-60-8	38.408	80.700	% Recov	12/02/04	58.000	109.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Phenol	108-95-2	57.581	80.600	% Recov	12/02/04	59.000	115.000	
MSD	Nitrobenzene-d5	4165-60-0	38.701	81.300	% Recov	12/02/04	60.000	118.000	
MSD	4-Nitrophenol	100-02-7	61.047	85.500	% Recov	12/02/04	32.000	130.000	
MSD	Pentachlorophenol	87-86-5	47.720	66.800	% Recov	12/02/04	51.000	121.000	
MSD	Phenol-d5	4165-62-2	38.681	81.200	% Recov	12/02/04	59.000	116.000	
MSD	Pyrene	129-00-0	41.504	87.200	% Recov	12/02/04	58.000	116.000	
MSD	2,4,6-Tribromophenol	118-79-6	42.218	88.700	% Recov	12/02/04	60.000	120.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	18.582	39.000	% Recov	12/02/04	60.000	120.000	*
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	69.300	8.299	RPD	12/02/04	0.000	25.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	69.000	0.000	RPD	12/02/04	0.000	25.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	82.300	6.921	RPD	12/02/04	0.000	25.000	
SPK-RPD	2-Fluorophenol	367-12-4	71.700	13.766	RPD	12/02/04	0.000	25.000	
SPK-RPD	Acenaphthene	83-32-9	85.000	4.934	RPD	12/02/04	0.000	25.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	79.200	8.348	RPD	12/02/04	0.000	25.000	
SPK-RPD	2-Chlorophenol	95-57-8	76.600	7.053	RPD	12/02/04	0.000	25.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	84.700	10.515	RPD	12/02/04	0.000	25.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	80.700	11.778	RPD	12/02/04	0.000	25.000	
SPK-RPD	Phenol	108-95-2	80.600	11.682	RPD	12/02/04	0.000	16.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	81.300	8.142	RPD	12/02/04	0.000	25.000	
SPK-RPD	4-Nitrophenol	100-02-7	85.500	8.283	RPD	12/02/04	0.000	25.000	
SPK-RPD	Pentachlorophenol	87-86-5	66.800	7.354	RPD	12/02/04	0.000	25.000	
SPK-RPD	Phenol-d5	4165-62-2	81.200	6.090	RPD	12/02/04	0.000	25.000	
SPK-RPD	Pyrene	129-00-0	87.200	4.455	RPD	12/02/04	0.000	25.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	88.700	12.968	RPD	12/02/04	0.000	25.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	39.000	74.092	RPD	12/02/04	0.000	25.000	*
SURR	2-Fluorophenol	367-12-4	21.103	44.300	% Recov	12/02/04	50.000	110.000	*
SURR	2-Fluorobiphenyl	321-60-8	38.854	81.600	% Recov	12/02/04	58.000	109.000	
SURR	Nitrobenzene-d5	4165-60-0	40.177	84.400	% Recov	12/02/04	60.000	118.000	
SURR	Phenol-d5	4165-62-2	30.020	63.000	% Recov	12/02/04	59.000	116.000	
SURR	2,4,6-Tribromophenol	118-79-6	25.216	53.000	% Recov	12/02/04	60.000	120.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Terphenyl-d14 (7Cl)	98904-43-9	13.809	29.000	% Recov	12/02/04	60.000	120.000	*
BATCH QC									
BLANK	1,2-Dichlorobenzene	95-50-1	< 4.2	n/a	ug/L	12/02/04			U
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 3.0	n/a	ug/L	12/02/04			U
BLANK	1,3-Dichlorobenzene	541-73-1	< 5.2	n/a	ug/L	12/02/04			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 5.0	n/a	ug/L	12/02/04			U
BLANK	2,4-Dichlorophenol	120-83-2	< 1.4	n/a	ug/L	12/02/04			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 1.8	n/a	ug/L	12/02/04			U
BLANK	2,4,5-Trichlorophenol	95-95-4	< 1.9	n/a	ug/L	12/02/04			U
BLANK	2,4,6-Trichlorophenol	88-06-2	< 2.4	n/a	ug/L	12/02/04			U
BLANK	2,4-Dimethylphenol	105-67-9	< 4.3	n/a	ug/L	12/02/04			U
BLANK	2,6-Dinitrotoluene	606-20-2	< 2.2	n/a	ug/L	12/02/04			U
BLANK	2-Chloronaphthalene	91-58-7	< 2.3	n/a	ug/L	12/02/04			U
BLANK	2-Fluorophenol	367-12-4	39.076	78.200	% Recov	12/02/04	50.000	110.000	
BLANK	2-Methylnaphthalene	91-57-6	< 1.9	n/a	ug/L	12/02/04			U
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 2.3	n/a	ug/L	12/02/04			U
BLANK	2-Nitroaniline	88-74-4	< 2.1	n/a	ug/L	12/02/04			U
BLANK	2-Nitrophenol	88-75-5	< 2.0	n/a	ug/L	12/02/04			U
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 3.2	n/a	ug/L	12/02/04	0.000	5.000	U
BLANK	3-Nitroaniline	99-09-2	< 4.5	n/a	ug/L	12/02/04			U
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 1.7	n/a	ug/L	12/02/04			U
BLANK	4-Bromophenylphenyl ether	101-55-3	< 1.9	n/a	ug/L	12/02/04			U
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 2.2	n/a	ug/L	12/02/04			U
BLANK	Acenaphthene	83-32-9	< 2.4	n/a	ug/L	12/02/04			U
BLANK	Acenaphthylene	208-96-8	< 2.3	n/a	ug/L	12/02/04			U
BLANK	Anthracene	120-12-7	< 2.0	n/a	ug/L	12/02/04			U
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 3.4	n/a	ug/L	12/02/04			U
BLANK	Benzo(a)anthracene	56-55-3	< 2.1	n/a	ug/L	12/02/04			U
BLANK	Benzo(b)fluoranthene	205-99-2	< 1.7	n/a	ug/L	12/02/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Benzo(ghi)perylene	191-24-2	< 2.5	n/a	ug/L	12/02/04			U
BLANK	Benzo(a)pyrene	50-32-8	< 2.1	n/a	ug/L	12/02/04			U
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 2.0	n/a	ug/L	12/02/04			U
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	< 2.6	n/a	ug/L	12/02/04			U
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 2.1	n/a	ug/L	12/02/04	0.000	10.000	U
BLANK	Benzo(k)fluoranthene	207-08-9	< 2.8	n/a	ug/L	12/02/04			U
BLANK	Butylbenzylphthalate	85-68-7	< 2.0	n/a	ug/L	12/02/04			U
BLANK	Carbazole	86-74-8	< 1.4	n/a	ug/L	12/02/04			U
BLANK	4-Chloroaniline	106-47-8	< 7.2	n/a	ug/L	12/02/04			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 1.3	n/a	ug/L	12/02/04			U
BLANK	2-Chlorophenol	95-57-8	< 1.7	n/a	ug/L	12/02/04			U
BLANK	Chrysene	218-01-9	< 2.3	n/a	ug/L	12/02/04			U
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 4.1	n/a	ug/L	12/02/04			U
BLANK	Dibenz[a,h]anthracene	53-70-3	< 2.6	n/a	ug/L	12/02/04			U
BLANK	Dibenzofuran	132-64-9	< 1.9	n/a	ug/L	12/02/04			U
BLANK	Di-n-butylphthalate	84-74-2	< 2.1	n/a	ug/L	12/02/04			U
BLANK	Diethylphthalate	84-66-2	< 6.3	n/a	ug/L	12/02/04			U
BLANK	Dimethyl phthalate	131-11-3	< 2.1	n/a	ug/L	12/02/04			U
BLANK	2,4-Dinitrophenol	51-28-5	< 3.3	n/a	ug/L	12/02/04			U
BLANK	Di-n-octylphthalate	117-84-0	< 2.5	n/a	ug/L	12/02/04			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 1.7	n/a	ug/L	12/02/04			U
BLANK	2-Fluorobiphenyl	321-60-8	41.546	83.100	% Recov	12/02/04	58.000	109.000	
BLANK	Fluorene	86-73-7	< 2.0	n/a	ug/L	12/02/04			U
BLANK	Fluoranthene	206-44-0	< 2.1	n/a	ug/L	12/02/04			U
BLANK	Hexachlorobenzene	118-74-1	< 2.1	n/a	ug/L	12/02/04			U
BLANK	Hexachlorobutadiene	87-68-3	< 3.6	n/a	ug/L	12/02/04			U
BLANK	Hexachlorocyclopentadiene	77-47-4	< 7.8	n/a	ug/L	12/02/04			U
BLANK	Hexachloroethane	67-72-1	< 5.5	n/a	ug/L	12/02/04			U
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 2.6	n/a	ug/L	12/02/04			U
BLANK	Isophorone	78-59-1	< 1.9	n/a	ug/L	12/02/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Phenol	108-95-2	< 1.7	n/a	ug/L	12/02/04			U
BLANK	Naphthalene	91-20-3	< 2.4	n/a	ug/L	12/02/04			U
BLANK	Nitrobenzene-d5	4165-60-0	41.049	82.100	% Recov	12/02/04	60.000	118.000	
BLANK	Nitrobenzene	98-95-3	< 2.0	n/a	ug/L	12/02/04			U
BLANK	4-Nitrophenol	100-02-7	< 1.4	n/a	ug/L	12/02/04			U
BLANK	4-Nitroaniline	100-01-6	< 2.9	n/a	ug/L	12/02/04			U
BLANK	N-Nitrosodiphenylamine	86-30-6	< 2.3	n/a	ug/L	12/02/04			U
BLANK	Pentachlorophenol	87-86-5	< 1.7	n/a	ug/L	12/02/04			U
BLANK	Phenanthrene	85-01-8	< 2.2	n/a	ug/L	12/02/04			U
BLANK	Phenol-d5	4165-62-2	39.731	79.500	% Recov	12/02/04	59.000	116.000	
BLANK	Pyrene	129-00-0	< 2.1	n/a	ug/L	12/02/04			U
BLANK	2,4,6-Tribromophenol	118-79-6	39.743	79.500	% Recov	12/02/04	60.000	120.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	44.260	88.500	% Recov	12/02/04	60.000	120.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	37.801	75.600	% Recov	12/02/04	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	34.560	69.100	% Recov	12/02/04	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	41.750	83.500	% Recov	12/02/04	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	42.205	84.400	% Recov	12/02/04	50.000	110.000	
LCS	Acenaphthene	83-32-9	46.041	92.100	% Recov	12/02/04	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	67.608	90.100	% Recov	12/02/04	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	63.298	84.400	% Recov	12/02/04	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	47.264	94.500	% Recov	12/02/04	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	42.780	85.600	% Recov	12/02/04	58.000	109.000	
LCS	Phenol	108-95-2	68.276	91.000	% Recov	12/02/04	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	44.002	88.000	% Recov	12/02/04	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	53.188	70.900	% Recov	12/02/04	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	52.339	69.800	% Recov	12/02/04	62.000	114.000	
LCS	Phenol-d5	4165-62-2	46.354	92.700	% Recov	12/02/04	59.000	116.000	
LCS	Pyrene	129-00-0	42.573	85.100	% Recov	12/02/04	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	47.571	95.100	% Recov	12/02/04	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	43.509	87.000	% Recov	12/02/04	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Kerosene	TPHKEROSENE	2338.8	98.200	% Recov	11/30/04	70.000	130.000	
MS	ortho-Terphenyl Surr	84-15-1	441.82	92.800	% Recov	11/30/04	70.000	130.000	
MSD	Kerosene	TPHKEROSENE	1672.0	70.200	% Recov	11/30/04	70.000	130.000	
MSD	ortho-Terphenyl Surr	84-15-1	368.32	77.300	% Recov	11/30/04	70.000	130.000	
SPK-RPD	Kerosene	TPHKEROSENE	70.200	33.254	RPD	11/30/04	0.000	20.000	*
SPK-RPD	ortho-Terphenyl Surr	84-15-1	77.300	18.225	RPD	11/30/04	0.000	20.000	
SURR	ortho-Terphenyl Surr	84-15-1	404.93	82.200	% Recov	11/30/04	70.000	130.000	
BATCH QC									
BLANK	Kerosene	TPHKEROSENE	< 75	n/a	ug/L	11/30/04			U
BLANK	ortho-Terphenyl Surr	84-15-1	465.54	93.100	% Recov	11/30/04	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 75	n/a	ug/L	11/30/04			U
LCS	ortho-Terphenyl Surr	84-15-1	440.54	88.100	% Recov	11/30/04	70.000	130.000	
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2178.1	87.100	% Recov	11/30/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

Lab ID: W040002540
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,2,4-Trichlorobenzene	120-82-1	37.386	78.500	% Recov	12/13/04	50.000	120.000	
MS	1,4-Dichlorobenzene	106-46-7	34.534	72.500	% Recov	12/13/04	41.000	113.000	
MS	2,4-Dinitrotoluene	121-14-2	40.742	85.600	% Recov	12/13/04	65.000	109.000	
MS	2-Fluorophenol	367-12-4	40.299	84.600	% Recov	12/13/04	50.000	110.000	
MS	Acenaphthene	83-32-9	43.750	91.900	% Recov	12/13/04	62.000	112.000	
MS	4-Chloro-3-methylphenol	59-50-7	65.570	91.800	% Recov	12/13/04	59.000	115.000	
MS	2-Chlorophenol	95-57-8	57.417	80.400	% Recov	12/13/04	69.000	111.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	45.125	94.800	% Recov	12/13/04	69.000	115.000	
MS	2-Fluorobiphenyl	321-60-8	44.756	94.000	% Recov	12/13/04	58.000	109.000	
MS	Phenol	108-95-2	61.725	86.400	% Recov	12/13/04	59.000	115.000	
MS	Nitrobenzene-d5	4165-60-0	40.159	84.300	% Recov	12/13/04	60.000	118.000	
MS	4-Nitrophenol	100-02-7	54.571	76.400	% Recov	12/13/04	32.000	130.000	
MS	Pentachlorophenol	87-86-5	52.029	72.800	% Recov	12/13/04	51.000	121.000	
MS	Phenol-d5	4165-62-2	37.887	79.600	% Recov	12/13/04	59.000	116.000	
MS	Pyrene	129-00-0	39.987	84.000	% Recov	12/13/04	58.000	116.000	
MS	2,4,6-Tribromophenol	118-79-6	46.718	98.100	% Recov	12/13/04	60.000	120.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	24.138	50.700	% Recov	12/13/04	60.000	120.000	*
MSD	1,2,4-Trichlorobenzene	120-82-1	43.316	91.000	% Recov	12/13/04	50.000	120.000	
MSD	1,4-Dichlorobenzene	106-46-7	41.349	86.800	% Recov	12/13/04	41.000	113.000	
MSD	2,4-Dinitrotoluene	121-14-2	44.586	93.600	% Recov	12/13/04	65.000	109.000	
MSD	2-Fluorophenol	367-12-4	45.920	96.400	% Recov	12/13/04	50.000	110.000	
MSD	Acenaphthene	83-32-9	47.446	99.600	% Recov	12/13/04	62.000	112.000	
MSD	4-Chloro-3-methylphenol	59-50-7	70.692	99.000	% Recov	12/13/04	59.000	115.000	
MSD	2-Chlorophenol	95-57-8	64.148	89.800	% Recov	12/13/04	69.000	111.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	49.708	104.000	% Recov	12/13/04	69.000	115.000	
MSD	2-Fluorobiphenyl	321-60-8	49.532	104.000	% Recov	12/13/04	58.000	109.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Phenol	108-95-2	69.240	96.900	% Recov	12/13/04	59.000	115.000	
MSD	Nitrobenzene-d5	4165-60-0	43.522	91.400	% Recov	12/13/04	60.000	118.000	
MSD	4-Nitrophenol	100-02-7	64.241	89.900	% Recov	12/13/04	32.000	130.000	
MSD	Pentachlorophenol	87-86-5	61.369	85.900	% Recov	12/13/04	51.000	121.000	
MSD	Phenol-d5	4165-62-2	43.568	91.500	% Recov	12/13/04	59.000	116.000	
MSD	Pyrene	129-00-0	42.842	90.000	% Recov	12/13/04	58.000	116.000	
MSD	2,4,6-Tribromophenol	118-79-6	50.270	106.000	% Recov	12/13/04	60.000	120.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	45.950	96.500	% Recov	12/13/04	60.000	120.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	91.000	14.749	RPD	12/13/04	0.000	25.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	86.800	17.954	RPD	12/13/04	0.000	25.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	93.600	8.929	RPD	12/13/04	0.000	25.000	
SPK-RPD	2-Fluorophenol	367-12-4	96.400	13.039	RPD	12/13/04	0.000	25.000	
SPK-RPD	Acenaphthene	83-32-9	99.600	8.042	RPD	12/13/04	0.000	25.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	99.000	7.547	RPD	12/13/04	0.000	25.000	
SPK-RPD	2-Chlorophenol	95-57-8	89.800	11.046	RPD	12/13/04	0.000	25.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	104.000	9.256	RPD	12/13/04	0.000	25.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	104.000	10.101	RPD	12/13/04	0.000	25.000	
SPK-RPD	Phenol	108-95-2	96.900	11.457	RPD	12/13/04	0.000	16.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	91.400	8.082	RPD	12/13/04	0.000	25.000	
SPK-RPD	4-Nitrophenol	100-02-7	89.900	16.236	RPD	12/13/04	0.000	25.000	
SPK-RPD	Pentachlorophenol	87-86-5	85.900	16.509	RPD	12/13/04	0.000	25.000	
SPK-RPD	Phenol-d5	4165-62-2	91.500	13.910	RPD	12/13/04	0.000	25.000	
SPK-RPD	Pyrene	129-00-0	90.000	6.897	RPD	12/13/04	0.000	25.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	106.000	7.741	RPD	12/13/04	0.000	25.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	96.500	62.228	RPD	12/13/04	0.000	25.000	*
SURR	2-Fluorophenol	367-12-4	38.882	81.700	% Recov	12/13/04	50.000	110.000	
SURR	2-Fluorobiphenyl	321-60-8	39.621	83.200	% Recov	12/13/04	58.000	109.000	
SURR	Nitrobenzene-d5	4165-60-0	45.733	96.000	% Recov	12/13/04	60.000	118.000	
SURR	Phenol-d5	4165-62-2	38.018	79.800	% Recov	12/13/04	59.000	116.000	
SURR	2,4,6-Tribromophenol	118-79-6	40.694	85.500	% Recov	12/13/04	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Terphenyl-d14 (7Cl)	98904-43-9	20.981	44.100	% Recov	12/13/04	60.000	120.000	

BATCH QC

BLANK	1,2-Dichlorobenzene	95-50-1	< 4.2	n/a	ug/L	12/13/04			U
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 3.0	n/a	ug/L	12/13/04			U
BLANK	1,3-Dichlorobenzene	541-73-1	< 5.2	n/a	ug/L	12/13/04			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 5.0	n/a	ug/L	12/13/04			U
BLANK	2,4-Dichlorophenol	120-83-2	< 1.4	n/a	ug/L	12/13/04			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 1.8	n/a	ug/L	12/13/04			U
BLANK	2,4,5-Trichlorophenol	95-95-4	< 1.9	n/a	ug/L	12/13/04			U
BLANK	2,4,6-Trichlorophenol	88-06-2	< 2.4	n/a	ug/L	12/13/04			U
BLANK	2,4-Dimethylphenol	105-67-9	< 4.3	n/a	ug/L	12/13/04			U
BLANK	2,6-Dinitrotoluene	606-20-2	< 2.2	n/a	ug/L	12/13/04			U
BLANK	2-Chloronaphthalene	91-58-7	< 2.3	n/a	ug/L	12/13/04			U
BLANK	2-Fluorophenol	367-12-4	44.158	88.300	% Recov	12/13/04	50.000	110.000	
BLANK	2-Methylnaphthalene	91-57-6	< 1.9	n/a	ug/L	12/13/04			U
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 2.3	n/a	ug/L	12/13/04			U
BLANK	2-Nitroaniline	88-74-4	< 2.1	n/a	ug/L	12/13/04			U
BLANK	2-Nitrophenol	88-75-5	< 2.0	n/a	ug/L	12/13/04			U
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 3.2	n/a	ug/L	12/13/04	0.000	5.000	U
BLANK	3-Nitroaniline	99-09-2	< 4.5	n/a	ug/L	12/13/04			U
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 1.7	n/a	ug/L	12/13/04			U
BLANK	4-Bromophenylphenyl ether	101-55-3	< 1.9	n/a	ug/L	12/13/04			U
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 2.2	n/a	ug/L	12/13/04			U
BLANK	Acenaphthene	83-32-9	< 2.4	n/a	ug/L	12/13/04			U
BLANK	Acenaphthylene	208-96-8	< 2.3	n/a	ug/L	12/13/04			U
BLANK	Anthracene	120-12-7	< 2.0	n/a	ug/L	12/13/04			U
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 3.4	n/a	ug/L	12/13/04			U
BLANK	Benzo(a)anthracene	56-55-3	< 2.1	n/a	ug/L	12/13/04			U
BLANK	Benzo(b)fluoranthene	205-99-2	< 1.7	n/a	ug/L	12/13/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Benzo(ghi)perylene	191-24-2	< 2.5	n/a	ug/L	12/13/04			U
BLANK	Benzo(a)pyrene	50-32-8	< 2.1	n/a	ug/L	12/13/04			U
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 2.0	n/a	ug/L	12/13/04			U
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	< 2.6	n/a	ug/L	12/13/04			U
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 2.1	n/a	ug/L	12/13/04	0.000	10.000	U
BLANK	Benzo(k)fluoranthene	207-08-9	< 2.8	n/a	ug/L	12/13/04			U
BLANK	Butylbenzylphthalate	85-68-7	< 2.0	n/a	ug/L	12/13/04			U
BLANK	Carbazole	86-74-8	< 1.4	n/a	ug/L	12/13/04			U
BLANK	4-Chloroaniline	106-47-8	< 7.2	n/a	ug/L	12/13/04			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 1.3	n/a	ug/L	12/13/04			U
BLANK	2-Chlorophenol	95-57-8	< 1.7	n/a	ug/L	12/13/04			U
BLANK	Chrysene	218-01-9	< 2.3	n/a	ug/L	12/13/04			U
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 4.1	n/a	ug/L	12/13/04			U
BLANK	Dibenz[a,h]anthracene	53-70-3	< 2.6	n/a	ug/L	12/13/04			U
BLANK	Dibenzofuran	132-64-9	< 1.9	n/a	ug/L	12/13/04			U
BLANK	Di-n-butylphthalate	84-74-2	< 2.1	n/a	ug/L	12/13/04			U
BLANK	Diethylphthalate	84-66-2	< 6.3	n/a	ug/L	12/13/04			U
BLANK	Dimethyl phthalate	131-11-3	< 2.1	n/a	ug/L	12/13/04			U
BLANK	2,4-Dinitrophenol	51-28-5	< 3.3	n/a	ug/L	12/13/04			U
BLANK	Di-n-octylphthalate	117-84-0	< 2.5	n/a	ug/L	12/13/04			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 1.7	n/a	ug/L	12/13/04			U
BLANK	2-Fluorobiphenyl	321-60-8	47.472	94.900	% Recov	12/13/04	58.000	109.000	
BLANK	Fluorene	86-73-7	< 2.0	n/a	ug/L	12/13/04			U
BLANK	Fluoranthene	206-44-0	< 2.1	n/a	ug/L	12/13/04			U
BLANK	Hexachlorobenzene	118-74-1	< 2.1	n/a	ug/L	12/13/04			U
BLANK	Hexachlorobutadiene	87-68-3	< 3.6	n/a	ug/L	12/13/04			U
BLANK	Hexachlorocyclopentadiene	77-47-4	< 7.8	n/a	ug/L	12/13/04			U
BLANK	Hexachloroethane	67-72-1	< 5.5	n/a	ug/L	12/13/04			U
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 2.6	n/a	ug/L	12/13/04			U
BLANK	Isophorone	78-59-1	< 1.9	n/a	ug/L	12/13/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Phenol	108-95-2	< 1.7	n/a	ug/L	12/13/04			U
BLANK	Naphthalene	91-20-3	< 2.4	n/a	ug/L	12/13/04			U
BLANK	Nitrobenzene-d5	4165-60-0	44.448	88.900	% Recov	12/13/04	60.000	118.000	
BLANK	Nitrobenzene	98-95-3	< 2.0	n/a	ug/L	12/13/04			U
BLANK	4-Nitrophenol	100-02-7	< 1.4	n/a	ug/L	12/13/04			U
BLANK	4-Nitroaniline	100-01-6	< 2.9	n/a	ug/L	12/13/04			U
BLANK	N-Nitrosodiphenylamine	86-30-6	< 2.3	n/a	ug/L	12/13/04			U
BLANK	Pentachlorophenol	87-86-5	< 1.7	n/a	ug/L	12/13/04			U
BLANK	Phenanthrene	85-01-8	< 2.2	n/a	ug/L	12/13/04			U
BLANK	Phenol-d5	4165-62-2	42.107	84.200	% Recov	12/13/04	59.000	116.000	
BLANK	Pyrene	129-00-0	< 2.1	n/a	ug/L	12/13/04			U
BLANK	2,4,6-Tribromophenol	118-79-6	43.011	86.000	% Recov	12/13/04	60.000	120.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	47.161	94.300	% Recov	12/13/04	60.000	120.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	39.119	78.200	% Recov	12/13/04	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	35.479	71.000	% Recov	12/13/04	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	43.139	86.300	% Recov	12/13/04	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	46.755	93.500	% Recov	12/13/04	50.000	110.000	
LCS	Acenaphthene	83-32-9	48.712	97.400	% Recov	12/13/04	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	68.232	91.000	% Recov	12/13/04	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	65.354	87.100	% Recov	12/13/04	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	51.161	102.000	% Recov	12/13/04	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	45.329	90.700	% Recov	12/13/04	58.000	109.000	
LCS	Phenol	108-95-2	70.853	94.500	% Recov	12/13/04	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	46.819	93.600	% Recov	12/13/04	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	57.150	76.200	% Recov	12/13/04	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	55.070	73.400	% Recov	12/13/04	62.000	114.000	
LCS	Phenol-d5	4165-62-2	48.886	97.800	% Recov	12/13/04	59.000	116.000	
LCS	Pyrene	129-00-0	43.622	87.200	% Recov	12/13/04	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	48.604	97.200	% Recov	12/13/04	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	46.792	93.600	% Recov	12/13/04	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F04-032
Sample Date: 12/01/04
Receive Date:12/01/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002529									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Kerosene	TPHKEROSENE	2249.1	92.700	% Recov	12/07/04	70.000	130.000	
MS	ortho-Terphenyl Surr	84-15-1	458.91	94.500	% Recov	12/07/04	70.000	130.000	
Lab ID: W040002540									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	ortho-Terphenyl Surr	84-15-1	445.01	93.000	% Recov	12/07/04	70.000	130.000	
BATCH QC									
BLANK	Kerosene	TPHKEROSENE	< 75	n/a	ug/L	12/07/04			U
BLANK	ortho-Terphenyl Surr	84-15-1	467.70	93.500	% Recov	12/07/04	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 75	n/a	ug/L	12/07/04			U
LCS	ortho-Terphenyl Surr	84-15-1	475.04	95.000	% Recov	12/07/04	70.000	130.000	
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2186.5	87.500	% Recov	12/07/04	80.000	120.000	
LCS-DUP	ortho-Terphenyl Surr	84-15-1	443.44	88.700	% Recov	12/07/04	70.000	130.000	
LCS-DUP	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2067.4	82.700	% Recov	12/07/04	80.000	120.000	
LCS-RPD	Total Pet. Hydrocarbons Diesel	TPHDIESEL	82.700	5.640	RPD	12/07/04	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	2-Fluorophenol	367-12-4	41.611	70.700	% Recov	02/02/05	50.000	110.000	
SURR	2-Fluorobiphenyl	321-60-8	47.760	81.200	% Recov	02/02/05	58.000	109.000	
SURR	Nitrobenzene-d5	4165-60-0	46.823	79.600	% Recov	02/02/05	60.000	118.000	
SURR	Phenol-d5	4165-62-2	43.461	73.900	% Recov	02/02/05	59.000	116.000	
SURR	2,4,6-Tribromophenol	118-79-6	50.844	86.400	% Recov	02/02/05	60.000	120.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	45.255	76.900	% Recov	02/02/05	60.000	120.000	
Lab ID: W050000178									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	1,2,4-Trichlorobenzene	120-82-1	31.601	67.000	% Recov	02/02/05	50.000	120.000	
MS	1,4-Dichlorobenzene	106-46-7	33.013	70.000	% Recov	02/02/05	41.000	113.000	
MS	2,4-Dinitrotoluene	121-14-2	36.829	78.100	% Recov	02/02/05	65.000	109.000	
MS	2-Fluorophenol	367-12-4	39.438	83.600	% Recov	02/02/05	50.000	110.000	
MS	Acenaphthene	83-32-9	37.969	80.500	% Recov	02/02/05	62.000	112.000	
MS	4-Chloro-3-methylphenol	59-50-7	60.226	85.100	% Recov	02/02/05	59.000	115.000	
MS	2-Chlorophenol	95-57-8	59.718	84.400	% Recov	02/02/05	69.000	111.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	45.273	96.000	% Recov	02/02/05	69.000	115.000	
MS	2-Fluorobiphenyl	321-60-8	39.672	84.100	% Recov	02/02/05	58.000	109.000	
MS	Phenol	108-95-2	62.199	87.900	% Recov	02/02/05	59.000	115.000	
MS	Nitrobenzene-d5	4165-60-0	38.432	81.500	% Recov	02/02/05	60.000	118.000	
MS	4-Nitrophenol	100-02-7	72.833	103.000	% Recov	02/02/05	32.000	130.000	
MS	Pentachlorophenol	87-86-5	72.897	103.000	% Recov	02/02/05	51.000	121.000	
MS	Phenol-d5	4165-62-2	42.309	89.700	% Recov	02/02/05	59.000	116.000	
MS	Pyrene	129-00-0	33.756	71.600	% Recov	02/02/05	58.000	116.000	
MS	2,4,6-Tribromophenol	118-79-6	48.270	102.000	% Recov	02/02/05	60.000	120.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	17.728	37.600	% Recov	02/02/05	60.000	120.000	•

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 01/26/05
Receive Date:01/26/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	1,2,4-Trichlorobenzene	120-82-1	31.422	66.600	% Recov	02/02/05	50.000	120.000	
MSD	1,4-Dichlorobenzene	106-46-7	31.171	66.100	% Recov	02/02/05	41.000	113.000	
MSD	2,4-Dinitrotoluene	121-14-2	35.970	76.300	% Recov	02/02/05	65.000	109.000	
MSD	2-Fluorophenol	367-12-4	34.670	73.500	% Recov	02/02/05	50.000	110.000	
MSD	Acenaphthene	83-32-9	36.096	76.500	% Recov	02/02/05	62.000	112.000	
MSD	4-Chloro-3-methylphenol	59-50-7	57.627	81.400	% Recov	02/02/05	59.000	115.000	
MSD	2-Chlorophenol	95-57-8	54.474	77.000	% Recov	02/02/05	69.000	111.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	43.487	92.200	% Recov	02/02/05	69.000	115.000	
MSD	2-Fluorobiphenyl	321-60-8	36.020	76.400	% Recov	02/02/05	58.000	109.000	
MSD	Phenol	108-95-2	55.878	79.000	% Recov	02/02/05	59.000	115.000	
MSD	Nitrobenzene-d5	4165-60-0	35.852	76.000	% Recov	02/02/05	60.000	118.000	
MSD	4-Nitrophenol	100-02-7	63.721	90.100	% Recov	02/02/05	32.000	130.000	
MSD	Pentachlorophenol	87-86-5	75.353	106.000	% Recov	02/02/05	51.000	121.000	
MSD	Phenol-d5	4165-62-2	38.653	81.900	% Recov	02/02/05	59.000	116.000	
MSD	Pyrene	129-00-0	34.190	72.500	% Recov	02/02/05	58.000	116.000	
MSD	2,4,6-Tribromophenol	118-79-6	44.155	93.600	% Recov	02/02/05	60.000	120.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	15.421	32.700	% Recov	02/02/05	60.000	120.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	66.600	0.599	RPD	02/02/05	0.000	25.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	66.100	5.731	RPD	02/02/05	0.000	25.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	76.300	2.332	RPD	02/02/05	0.000	25.000	
SPK-RPD	2-Fluorophenol	367-12-4	73.500	12.858	RPD	02/02/05	0.000	25.000	
SPK-RPD	Acenaphthene	83-32-9	76.500	5.096	RPD	02/02/05	0.000	25.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	81.400	4.444	RPD	02/02/05	0.000	25.000	
SPK-RPD	2-Chlorophenol	95-57-8	77.000	9.170	RPD	02/02/05	0.000	25.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	92.200	4.038	RPD	02/02/05	0.000	25.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	76.400	9.595	RPD	02/02/05	0.000	25.000	
SPK-RPD	Phenol	108-95-2	79.000	10.665	RPD	02/02/05	0.000	16.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	76.000	6.984	RPD	02/02/05	0.000	25.000	
SPK-RPD	4-Nitrophenol	100-02-7	90.100	13.361	RPD	02/02/05	0.000	25.000	
SPK-RPD	Pentachlorophenol	87-86-5	106.000	2.871	RPD	02/02/05	0.000	25.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date: 01/26/05
Receive Date:01/26/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Phenol-d5	4165-62-2	81.900	9.091	RPD	02/02/05	0.000	25.000	
SPK-RPD	Pyrene	129-00-0	72.500	1.249	RPD	02/02/05	0.000	25.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	93.600	8.589	RPD	02/02/05	0.000	25.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	32.700	13.940	RPD	02/02/05	0.000	25.000	

BATCH QC

BLANK	1,2-Dichlorobenzene	95-50-1	< 4.2	n/a	ug/L	02/02/05			U
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 3.0	n/a	ug/L	02/02/05			U
BLANK	1,3-Dichlorobenzene	541-73-1	< 5.2	n/a	ug/L	02/02/05			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 5.0	n/a	ug/L	02/02/05			U
BLANK	2,4-Dichlorophenol	120-83-2	< 1.4	n/a	ug/L	02/02/05			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 1.8	n/a	ug/L	02/02/05			U
BLANK	2,4,5-Trichlorophenol	95-95-4	< 1.9	n/a	ug/L	02/02/05			U
BLANK	2,4,6-Trichlorophenol	88-06-2	< 2.4	n/a	ug/L	02/02/05			U
BLANK	2,4-Dimethylphenol	105-67-9	< 4.3	n/a	ug/L	02/02/05			U
BLANK	2,6-Dinitrotoluene	606-20-2	< 2.2	n/a	ug/L	02/02/05			U
BLANK	2-Chloronaphthalene	91-58-7	< 2.3	n/a	ug/L	02/02/05			U
BLANK	2-Fluorophenol	367-12-4	34.834	69.700	% Recov	02/02/05	50.000	110.000	
BLANK	2-Methylnaphthalene	91-57-6	< 1.9	n/a	ug/L	02/02/05			U
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 2.3	n/a	ug/L	02/02/05			U
BLANK	2-Nitroaniline	88-74-4	< 2.1	n/a	ug/L	02/02/05			U
BLANK	2-Nitrophenol	88-75-5	< 2.0	n/a	ug/L	02/02/05			U
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 3.2	n/a	ug/L	02/02/05	0.000	5.000	U
BLANK	3-Nitroaniline	99-09-2	< 4.5	n/a	ug/L	02/02/05			U
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 1.7	n/a	ug/L	02/02/05			U
BLANK	4-Bromophenylphenyl ether	101-55-3	< 1.9	n/a	ug/L	02/02/05			U
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 2.2	n/a	ug/L	02/02/05			U
BLANK	Acenaphthene	83-32-9	< 2.4	n/a	ug/L	02/02/05			U
BLANK	Acenaphthylene	208-96-8	< 2.3	n/a	ug/L	02/02/05			U
BLANK	Anthracene	120-12-7	< 2.0	n/a	ug/L	02/02/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 3.4	n/a	ug/L	02/02/05			U
BLANK	Benzo(a)anthracene	56-55-3	< 2.1	n/a	ug/L	02/02/05			U
BLANK	Benzo(b)fluoranthene	205-99-2	< 1.7	n/a	ug/L	02/02/05			U
BLANK	Benzo(ghi)perylene	191-24-2	< 2.5	n/a	ug/L	02/02/05			U
BLANK	Benzo(a)pyrene	50-32-8	< 2.1	n/a	ug/L	02/02/05			U
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 2.0	n/a	ug/L	02/02/05			U
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	< 2.6	n/a	ug/L	02/02/05			U
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 2.1	n/a	ug/L	02/02/05	0.000	10.000	U
BLANK	Benzo(k)fluoranthene	207-08-9	< 2.8	n/a	ug/L	02/02/05			U
BLANK	Butylbenzylphthalate	85-68-7	< 2.0	n/a	ug/L	02/02/05			U
BLANK	Carbazole	86-74-8	< 1.4	n/a	ug/L	02/02/05			U
BLANK	4-Chloroaniline	106-47-8	< 7.2	n/a	ug/L	02/02/05			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 1.3	n/a	ug/L	02/02/05			U
BLANK	2-Chlorophenol	95-57-8	< 1.7	n/a	ug/L	02/02/05			U
BLANK	Chrysene	218-01-9	< 2.3	n/a	ug/L	02/02/05			U
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 4.1	n/a	ug/L	02/02/05			U
BLANK	Dibenz[a,h]anthracene	53-70-3	< 2.6	n/a	ug/L	02/02/05			U
BLANK	Dibenzofuran	132-64-9	< 1.9	n/a	ug/L	02/02/05			U
BLANK	Di-n-butylphthalate	84-74-2	< 2.1	n/a	ug/L	02/02/05			U
BLANK	Diethylphthalate	84-66-2	< 6.3	n/a	ug/L	02/02/05			U
BLANK	Dimethyl phthalate	131-11-3	< 2.1	n/a	ug/L	02/02/05			U
BLANK	2,4-Dinitrophenol	51-28-5	< 3.3	n/a	ug/L	02/02/05			U
BLANK	Di-n-octylphthalate	117-84-0	< 2.5	n/a	ug/L	02/02/05			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 1.7	n/a	ug/L	02/02/05			U
BLANK	2-Fluorobiphenyl	321-60-8	36.732	73.500	% Recov	02/02/05	58.000	109.000	
BLANK	Fluorene	86-73-7	< 2.0	n/a	ug/L	02/02/05			U
BLANK	Fluoranthene	206-44-0	< 2.1	n/a	ug/L	02/02/05			U
BLANK	Hexachlorobenzene	118-74-1	< 2.1	n/a	ug/L	02/02/05			U
BLANK	Hexachlorobutadiene	87-68-3	< 3.6	n/a	ug/L	02/02/05			U
BLANK	Hexachlorocyclopentadiene	77-47-4	< 7.8	n/a	ug/L	02/02/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Hexachloroethane	67-72-1	< 5.5	n/a	ug/L	02/02/05			U
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 2.6	n/a	ug/L	02/02/05			U
BLANK	Isophorone	78-59-1	< 1.9	n/a	ug/L	02/02/05			U
BLANK	Phenol	108-95-2	< 1.7	n/a	ug/L	02/02/05			U
BLANK	Naphthalene	91-20-3	< 2.4	n/a	ug/L	02/02/05			U
BLANK	Nitrobenzene-d5	4165-60-0	37.153	74.300	% Recov	02/02/05	60.000	118.000	
BLANK	Nitrobenzene	98-95-3	< 2.0	n/a	ug/L	02/02/05			U
BLANK	4-Nitrophenol	100-02-7	< 1.4	n/a	ug/L	02/02/05			U
BLANK	4-Nitroaniline	100-01-6	< 2.9	n/a	ug/L	02/02/05			U
BLANK	N-Nitrosodiphenylamine	86-30-6	< 2.3	n/a	ug/L	02/02/05			U
BLANK	Pentachlorophenol	87-86-5	< 1.7	n/a	ug/L	02/02/05			U
BLANK	Phenanthrene	85-01-8	< 2.2	n/a	ug/L	02/02/05			U
BLANK	Phenol-d5	4165-62-2	36.168	72.300	% Recov	02/02/05	59.000	116.000	
BLANK	Pyrene	129-00-0	< 2.1	n/a	ug/L	02/02/05			U
BLANK	2,4,6-Tribromophenol	118-79-6	34.712	69.400	% Recov	02/02/05	60.000	120.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	33.407	66.800	% Recov	02/02/05	60.000	120.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	34.374	68.700	% Recov	02/02/05	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	33.317	66.600	% Recov	02/02/05	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	37.230	74.500	% Recov	02/02/05	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	40.756	81.500	% Recov	02/02/05	50.000	110.000	
LCS	Acenaphthene	83-32-9	42.057	84.100	% Recov	02/02/05	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	63.857	85.100	% Recov	02/02/05	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	58.807	78.400	% Recov	02/02/05	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	42.690	85.400	% Recov	02/02/05	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	40.784	81.600	% Recov	02/02/05	58.000	109.000	
LCS	Phenol	108-95-2	59.266	79.000	% Recov	02/02/05	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	39.136	78.300	% Recov	02/02/05	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	60.037	80.000	% Recov	02/02/05	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	67.860	90.500	% Recov	02/02/05	62.000	114.000	
LCS	Phenol-d5	4165-62-2	40.788	81.600	% Recov	02/02/05	59.000	116.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Pyrene	129-00-0	39.582	79.200	% Recov	02/02/05	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	43.876	87.800	% Recov	02/02/05	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	43.087	86.200	% Recov	02/02/05	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Kerosene	TPHKEROSENE	2272.1	76.300	% Recov	02/01/05	70.000	130.000	
MS	ortho-Terphenyl Surr	84-15-1	574.86	96.600	% Recov	02/01/05	70.000	130.000	
MSD	Kerosene	TPHKEROSENE	2615.9	88.900	% Recov	02/01/05	70.000	130.000	
MSD	ortho-Terphenyl Surr	84-15-1	651.39	111.000	% Recov	02/01/05	70.000	130.000	
SPK-RPD	Kerosene	TPHKEROSENE	88.900	15.254	RPD	02/01/05	0.000	20.000	
SPK-RPD	ortho-Terphenyl Surr	84-15-1	111.000	13.873	RPD	02/01/05	0.000	20.000	
SURR	ortho-Terphenyl Surr	84-15-1	583.11	100.000	% Recov	02/01/05	70.000	130.000	
BATCH QC									
BLANK	Kerosene	TPHKEROSENE	< 75	n/a	ug/L	02/01/05			U
BLANK	ortho-Terphenyl Surr	84-15-1	545.74	109.000	% Recov	02/01/05	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 75	n/a	ug/L	02/01/05			U
LCS	ortho-Terphenyl Surr	84-15-1	540.93	108.000	% Recov	02/01/05	70.000	130.000	
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	2352.5	94.100	% Recov	02/01/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: SW-846 8270C Semi-Vols

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

Lab ID: W050001669
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	1,2,4-Trichlorobenzene	120-82-1	12.652	66.000	% Recov	06/13/05	50.000	120.000	
MS	1,4-Dichlorobenzene	106-46-7	12.058	62.900	% Recov	06/13/05	41.000	113.000	
MS	2,4-Dinitrotoluene	121-14-2	18.884	98.600	% Recov	06/13/05	65.000	109.000	
MS	2-Fluerophonol	367-12-4	17.718	92.500	% Recov	06/13/05	50.000	110.000	
MS	Acenaphthene	83-32-9	16.018	83.600	% Recov	06/13/05	62.000	112.000	
MS	4-Chloro-3-methylphenol	59-50-7	27.896	97.100	% Recov	06/13/05	59.000	115.000	
MS	2-Chlorophenol	95-57-8	26.324	91.600	% Recov	06/13/05	69.000	111.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	20.964	109.000	% Recov	06/13/05	69.000	115.000	
MS	2-Fluorobiphenyl	321-60-8	12.334	64.400	% Recov	06/13/05	58.000	109.000	
MS	Phenol	108-95-2	29.270	102.000	% Recov	06/13/05	59.000	115.000	
MS	Nitrobenzene-d5	4165-60-0	17.430	91.000	% Recov	06/13/05	60.000	118.000	
MS	4-Nitrophenol	100-02-7	23.487	81.700	% Recov	06/13/05	32.000	130.000	
MS	Pentachlorophenol	87-86-5	26.929	93.700	% Recov	06/13/05	51.000	121.000	
MS	Phenol-d5	4165-62-2	18.175	94.900	% Recov	06/13/05	59.000	116.000	
MS	Pyrene	129-00-0	20.517	107.000	% Recov	06/13/05	58.000	116.000	
MS	2,4,6-Tribromophenol	118-79-6	18.516	96.700	% Recov	06/13/05	60.000	120.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	17.774	92.800	% Recov	06/13/05	60.000	120.000	
MSD	1,2,4-Trichlorobenzene	120-82-1	13.207	69.000	% Recov	06/13/05	50.000	120.000	
MSD	1,4-Dichlorobenzene	106-46-7	13.139	68.700	% Recov	06/13/05	41.000	113.000	
MSD	2,4-Dinitrotoluene	121-14-2	19.027	99.400	% Recov	06/13/05	65.000	109.000	
MSD	2-Fluorophenol	367-12-4	18.522	96.800	% Recov	06/13/05	50.000	110.000	
MSD	Acenaphthene	83-32-9	16.409	85.700	% Recov	06/13/05	62.000	112.000	
MSD	4-Chloro-3-methylphenol	59-50-7	27.933	97.300	% Recov	06/13/05	59.000	115.000	
MSD	2-Chlorophenol	95-57-8	26.744	93.200	% Recov	06/13/05	69.000	111.000	
MSD	N-Nitrosedi-n-dipropylamine	621-64-7	20.712	108.000	% Recov	06/13/05	69.000	115.000	
MSD	2-Fluorobiphenyl	321-60-8	13.128	68.600	% Recov	06/13/05	58.000	109.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: SW-846 8270C Semi-Vols

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Phenol	108-95-2	29.853	104.000	% Recov	06/13/05	59.000	115.000	
MSD	Nitrobenzene-d5	4165-60-0	18.066	94.400	% Recov	06/13/05	60.000	118.000	
MSD	4-Nitrophenol	100-02-7	23.065	80.300	% Recov	06/13/05	32.000	130.000	
MSD	Pentachlorophenol	87-86-5	26.746	93.200	% Recov	06/13/05	51.000	121.000	
MSD	Phenol-d5	4165-62-2	18.199	95.100	% Recov	06/13/05	59.000	116.000	
MSD	Pyrene	129-00-0	20.302	106.000	% Recov	06/13/05	58.000	116.000	
MSD	2,4,6-Tribromophenol	118-79-6	18.612	97.200	% Recov	06/13/05	60.000	120.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	17.230	90.000	% Recov	06/13/05	60.000	120.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	69.000	4.444	RPD	06/14/05	0.000	25.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	68.700	8.815	RPD	06/14/05	0.000	25.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	99.400	0.808	RPD	06/14/05	0.000	25.000	
SPK-RPD	2-Fluorophenol	367-12-4	96.800	4.543	RPD	06/14/05	0.000	25.000	
SPK-RPD	Acenaphthene	83-32-9	85.700	2.481	RPD	06/14/05	0.000	25.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	97.300	0.206	RPD	06/14/05	0.000	25.000	
SPK-RPD	2-Chlorophenol	95-57-8	93.200	1.732	RPD	06/14/05	0.000	25.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	108.000	0.922	RPD	06/14/05	0.000	25.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	68.600	6.316	RPD	06/14/05	0.000	25.000	
SPK-RPD	Phenol	108-95-2	104.000	1.942	RPD	06/14/05	0.000	16.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	94.400	3.668	RPD	06/14/05	0.000	25.000	
SPK-RPD	4-Nitrophenol	100-02-7	80.300	1.728	RPD	06/14/05	0.000	25.000	
SPK-RPD	Pentachlorophenol	87-86-5	93.200	0.535	RPD	06/14/05	0.000	25.000	
SPK-RPD	Phenol-d5	4165-62-2	95.100	0.211	RPD	06/14/05	0.000	25.000	
SPK-RPD	Pyrene	129-00-0	106.000	0.939	RPD	06/14/05	0.000	25.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	97.200	0.516	RPD	06/14/05	0.000	25.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	90.000	3.063	RPD	06/14/05	0.000	25.000	
SURR	2-Fluorophenol	367-12-4	15.213	78.300	% Recov	06/13/05	50.000	110.000	
SURR	2-Fluorobiphenyl	321-60-8	12.192	62.800	% Recov	06/13/05	58.000	109.000	
SURR	Nitrobenzene-d5	4165-60-0	17.462	89.900	% Recov	06/13/05	60.000	118.000	
SURR	Phenol-d5	4165-62-2	11.104	57.200	% Recov	06/13/05	59.000	116.000	
SURR	2,4,6-Tribromophenol	118-79-6	17.356	89.400	% Recov	06/13/05	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: SW-846 8270C Semi-Vols

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Terphenyl-d14 (7Cl)	98904-43-9	16.708	86.000	% Recov	06/13/05	60.000	120.000	
BATCH QC									
BLANK	1,2-Dichlorobenzene	95-50-1	< 1.5	n/a	ug/L	06/13/05			U
BLANK	1,2,4-Trichlorobenzene	120-82-1	< 1.8	n/a	ug/L	06/13/05			U
BLANK	1,3-Dichlorobenzene	541-73-1	< 1.2	n/a	ug/L	06/13/05			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.4	n/a	ug/L	06/13/05			U
BLANK	2,4-Dichlorophenol	120-83-2	< 0.53	n/a	ug/L	06/13/05			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 0.38	n/a	ug/L	06/13/05			U
BLANK	2,4,5-Trichlorophenol	95-95-4	< 0.80	n/a	ug/L	06/13/05			U
BLANK	2,4,6-Trichlorophenol	88-06-2	< 0.50	n/a	ug/L	06/13/05			U
BLANK	2,4-Dimethylphenol	105-67-9	< 1.7	n/a	ug/L	06/13/05			U
BLANK	2,6-Dinitrotoluene	606-20-2	< 0.34	n/a	ug/L	06/13/05			U
BLANK	2-Chloronaphthalene	91-58-7	< 4.0	n/a	ug/L	06/13/05			U
BLANK	2-Fluorophenol	367-12-4	17.937	89.700	% Recov	06/13/05	50.000	110.000	
BLANK	2-Methylnaphthalene	91-57-6	< 3.4	n/a	ug/L	06/13/05			U
BLANK	2-Methylphenol (cresol, o-)	95-48-7	< 0.25	n/a	ug/L	06/13/05			U
BLANK	2-Nitroaniline	88-74-4	< 0.42	n/a	ug/L	06/13/05			U
BLANK	2-Nitrophenol	88-75-5	< 0.57	n/a	ug/L	06/13/05			U
BLANK	3 & 4 Methylphenol Total	65794-96-9	< 0.64	n/a	ug/L	06/13/05	0.000	5.000	U
BLANK	3-Nitroaniline	99-09-2	< 0.45	n/a	ug/L	06/13/05			U
BLANK	4,6-Dinitro-2-methylphenol	534-52-1	< 0.54	n/a	ug/L	06/13/05			U
BLANK	4-Bromophenylphenyl ether	101-55-3	< 1.8	n/a	ug/L	06/13/05			U
BLANK	4-Chlorophenylphenyl ether	7005-72-3	< 2.2	n/a	ug/L	06/13/05			U
BLANK	Acenaphthene	83-32-9	< 2.8	n/a	ug/L	06/13/05			U
BLANK	Acenaphthylene	208-96-8	< 2.4	n/a	ug/L	06/13/05			U
BLANK	Anthracene	120-12-7	< 0.83	n/a	ug/L	06/13/05			U
BLANK	Bis(2-chloroethyl) ether	111-44-4	< 0.24	n/a	ug/L	06/13/05			U
BLANK	Benzo(a)anthracene	56-55-3	< 0.42	n/a	ug/L	06/13/05			U
BLANK	Benzo(b)fluoranthene	205-99-2	< 0.37	n/a	ug/L	06/13/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: SW-846 8270C Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Benzo(ghi)perylene	191-24-2	< 0.90	n/a	ug/L	06/13/05			U
BLANK	Benzo(a)pyrene	50-32-8	< 0.54	n/a	ug/L	06/13/05			U
BLANK	Bis(2-Chloroethoxy)methane	111-91-1	< 0.31	n/a	ug/L	06/13/05			U
BLANK	Bis(2-ethylhexyl) phthalate	117-81-7	0.94	0.940	ug/L	06/13/05			
BLANK	Bis(2-chloro-1-methylethyl)eth	108-60-1	< 1.5	n/a	ug/L	06/13/05	0.000	10.000	U
BLANK	Benzo(k)fluoranthene	207-08-9	< 0.39	n/a	ug/L	06/13/05			U
BLANK	Butylbenzylphthalate	85-68-7	< 1.5	n/a	ug/L	06/13/05			U
BLANK	Carbazole	86-74-8	< 0.41	n/a	ug/L	06/13/05			U
BLANK	4-Chloroaniline	106-47-8	< 0.57	n/a	ug/L	06/13/05			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 0.47	n/a	ug/L	06/13/05			U
BLANK	2-Chlorophenol	95-57-8	< 2.2	n/a	ug/L	06/13/05			U
BLANK	Chrysene	218-01-9	< 0.31	n/a	ug/L	06/13/05			U
BLANK	3,3'-Dichlorobenzidine	91-94-1	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Dibenz[a,h]anthracene	53-70-3	< 0.98	n/a	ug/L	06/13/05			U
BLANK	Dibenzofuran	132-64-9	< 2.6	n/a	ug/L	06/13/05			U
BLANK	Di-n-butylphthalate	84-74-2	< 0.45	n/a	ug/L	06/13/05			U
BLANK	Diethylphthalate	84-66-2	1.4	1.400	ug/L	06/13/05			
BLANK	Dimethyl phthalate	131-11-3	< 0.34	n/a	ug/L	06/13/05			U
BLANK	2,4-Dinitrophenol	51-28-5	< 0.51	n/a	ug/L	06/13/05			U
BLANK	Di-n-octylphthalate	117-84-0	< 1.4	n/a	ug/L	06/13/05			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 0.46	n/a	ug/L	06/13/05			U
BLANK	2-Fluorobiphenyl	321-60-8	12.432	62.200	% Recov	06/13/05	58.000	109.000	
BLANK	Fluorene	86-73-7	< 2.3	n/a	ug/L	06/13/05			U
BLANK	Fluoranthene	206-44-0	< 0.53	n/a	ug/L	06/13/05			U
BLANK	Hexachlorobenzene	118-74-1	< 1.2	n/a	ug/L	06/13/05			U
BLANK	Hexachlorobutadiene	87-68-3	< 1.3	n/a	ug/L	06/13/05			U
BLANK	Hexachlorocyclopentadiene	77-47-4	< 0.62	n/a	ug/L	06/13/05			U
BLANK	Hexachloroethane	67-72-1	< 1.0	n/a	ug/L	06/13/05			U
BLANK	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.85	n/a	ug/L	06/13/05			U
BLANK	Isophorone	78-59-1	< 0.44	n/a	ug/L	06/13/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: SW-846 8270C Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Phenol	108-95-2	< 0.58	n/a	ug/L	06/13/05			U
BLANK	Naphthalene	91-20-3	< 1.5	n/a	ug/L	06/13/05			U
BLANK	Nitrobenzene-d5	4165-60-0	17.687	88.400	% Recov	06/13/05	60.000	118.000	
BLANK	Nitrobenzene	98-95-3	< 0.96	n/a	ug/L	06/13/05			U
BLANK	4-Nitrophenol	100-02-7	< 1.1	n/a	ug/L	06/13/05			U
BLANK	4-Nitroaniline	100-01-6	< 0.40	n/a	ug/L	06/13/05			U
BLANK	N-Nitrosodiphenylamine	86-30-6	< 0.54	n/a	ug/L	06/13/05			U
BLANK	Pentachlorophenol	87-86-5	< 0.66	n/a	ug/L	06/13/05			U
BLANK	Phenanthrene	85-01-8	< 1.2	n/a	ug/L	06/13/05			U
BLANK	Phenol-d5	4165-62-2	15.526	77.600	% Recov	06/13/05	59.000	116.000	
BLANK	Pyrene	129-00-0	< 0.33	n/a	ug/L	06/13/05			U
BLANK	2,4,6-Tribromophenol	118-79-6	14.961	74.800	% Recov	06/13/05	60.000	120.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	19.438	97.200	% Recov	06/13/05	60.000	120.000	
LCS	1,2,4-Trichlorobenzene	120-82-1	12.323	61.600	% Recov	06/13/05	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	12.253	61.300	% Recov	06/13/05	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	17.454	87.300	% Recov	06/13/05	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	18.006	90.000	% Recov	06/13/05	50.000	110.000	
LCS	Acenaphthene	83-32-9	15.117	75.600	% Recov	06/13/05	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	24.408	81.400	% Recov	06/13/05	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	25.267	84.200	% Recov	06/13/05	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	16.844	84.200	% Recov	06/13/05	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	13.345	66.700	% Recov	06/13/05	58.000	109.000	
LCS	Phenol	108-95-2	28.465	94.900	% Recov	06/13/05	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	17.515	87.600	% Recov	06/13/05	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	17.958	59.900	% Recov	06/13/05	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	18.110	60.400	% Recov	06/13/05	62.000	114.000	
LCS	Phenol-d5	4165-62-2	18.286	91.400	% Recov	06/13/05	59.000	116.000	
LCS	Pyrene	129-00-0	19.691	98.500	% Recov	06/13/05	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	16.126	80.600	% Recov	06/13/05	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	17.904	89.500	% Recov	06/13/05	60.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: SW-846 8270C Semi-Vols

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte		CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050001669										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	ortho-Terphenyl	Surr	84-15-1	473.52	98.000	% Recov	06/09/05	70.000	130.000	
Lab ID: W050001685										
BATCH QC ASSOCIATED WITH SAMPLE										
MS	Kerosene		TPHKEROSENE	1760.0	75.000	% Recov	06/09/05	70.000	130.000	
MS	ortho-Terphenyl	Surr	84-15-1	402.00	85.600	% Recov	06/09/05	70.000	130.000	
MSD	Kerosene		TPHKEROSENE	1765.5	75.200	% Recov	06/09/05	70.000	130.000	
MSD	ortho-Terphenyl	Surr	84-15-1	402.32	85.700	% Recov	06/09/05	70.000	130.000	
SPK-RPD	Kerosene		TPHKEROSENE	75.200	0.266	RPD	06/09/05	0.000	20.000	
SPK-RPD	ortho-Terphenyl	Surr	84-15-1	85.700	0.117	RPD	06/09/05	0.000	20.000	
BATCH QC										
BLANK	Kerosene		TPHKEROSENE	< 75	n/a	ug/L	06/09/05			U
BLANK	ortho-Terphenyl	Surr	84-15-1	410.58	82.100	% Recov	06/09/05	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel		TPHDIESEL	< 75	n/a	ug/L	06/09/05			U
LCS	Kerosene		TPHKEROSENE	1756.4	70.300	% Recov	06/09/05	70.000	130.000	
LCS	ortho-Terphenyl	Surr	84-15-1	445.47	89.100	% Recov	06/09/05	70.000	130.000	
LCS-DUP	Kerosene		TPHKEROSENE	1824.4	73.000	% Recov	06/09/05	70.000	130.000	
LCS-DUP	ortho-Terphenyl	Surr	84-15-1	421.56	84.300	% Recov	06/09/05	70.000	130.000	

Date: 14 April 2010
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: CPP 200 Area, 200 Area SGRP, and 200 Area
Subject: Inorganics - Sample Data Groups (SDGs) WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148 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
B23C91	1/13/2010	Water	C	200.8
B23CX6	2/10/2010	Water	C	200.8
B1BJC2	11/22/2004	Water	C	200.8 & 6010B
B1BJD9	12/07/2004	Water	C	200.8 & 6010B
B1BJD9	1/25/2005	Water	C	200.8 & 6010B
B1D7K5	6/01/2005	Water	C	200.8 & 6010B
B1D7Y4	6/01/2005	Water	C	200.8 (U only) & 6010B
B1JX48	10/02/2006	Water	C	200.8
B1L952	7/12/2007	Water	C	200.8 & 6010B
B1L965	8/13/2007	Water	C	200.8 & 6010B
B1P0X1	8/15/2007	Water	C	200.8
B1P0M7	11/29/2007	Water	C	200.8
B1YMF3	6/29/2009	Water	C	200.8
B21CK6	8/17/2009	Water	C	200.8
B21F31	8/18/2009	Water	C	Tc-99 via ICP-MS
B21F32	8/18/2009	Water	C	Tc-99 via ICP-MS
B21FV4	9/25/2009	Water	C	Tc-99 via ICP-MS

Data validation was conducted in accordance with the CHPRC validation statement of work and the following sampling and analysis plans (SAPs).

Sampling Analysis Plan for Eleven ARRA Wells to Support the 200 West Groundwater Treatment System in Fiscal Year 2010, DOE/RL-2009-95, Rev. 0.

Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network, DOE/RL-2002-17, Rev. 0.

Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant, DOE/RL-2006-19, Rev. 0.

Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006, DOE/RL-2006-46, Rev. 0.

Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit, DOE/RL-2008-57, Rev. 1.

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. Sample preservation requires chilling to 4 degrees Celsius and acid preservation with nitric acid to pH <2.

The samples were analyzed within the prescribed holding time and properly preserved with the following exceptions.

For SDG WSCF20051157, sample B1D7Y4 was analyzed for U beyond the holding time but within 2X the holding time. The U result for this sample was a detect and should be qualified as an estimate and flagged "J."

- **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 WSCF20042209, the ICP-AES Se laboratory blank result was > the MDL. The ICP-AES Se result for sample B1BJC2 was a detect <5X the blank result and should be qualified as a non-detect estimate and flagged "UJ."

For SDG WSCF20042338, the ICP-AES Ca, Fe and Mg laboratory blank results were > the MDLs. The associated sample results were either non-detect or detects >5X the blank results and should not be qualified.

For SDG WSCF20050155, the ICP-AES Ag, Ca and Li laboratory blank results were > the MDLs. For sample B1BJH6, the Ag result was a non-detect and should not be qualified, and the Ca result was a detect >5X the blank result and should not be qualified. The Li result for sample B1BJH6 was a detect <5X the blank result and should be qualified as a non-detect estimate and flagged "UJ."

For SDG WSCF20051157, the Al, Ca and Mg laboratory blank results were > the MDLs. The associated sample results were either non-detect or detects >5X the blank results and should not be qualified.

For SDG WSCF20071194, the Cr and Fe laboratory blank results were > the MDLs. The associated sample results were detects >5X the blank results and should not be qualified.

For SDG WSCF20071433, the Fe laboratory blank result was > the MDL. The Fe result for sample B1L965 was a detect <5X the blank result and should be qualified as a non-detect estimate and flagged "UJ.".

Trip Blanks

All trip blank results were acceptable with the following exception.

For SDG WSCF20051157, U was detected in trip blank B1D7Y4.

Field Blanks

No field blanks were submitted for analysis.

Equipment Blanks

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results and laboratory control sample results. According to SAPs DOE/RL-2009-95 and DOE/RL-2008-57, the laboratory control sample accuracy limits are 80% to 120% at a minimum, and the statistical ones established by the analytical laboratory if more stringent. The matrix spike sample accuracy limits are the ones established by the analytical laboratory. According to SAP DOE/RL-2002-17, the laboratory

control sample and matrix spike accuracy limits are the ones specified in the associated U.S. EPA analytical procedures. According to SAPs DOE/RL-2006-19 and DOE/RL-2006-46, the laboratory control sample and matrix spike sample accuracy limits are 75% to 125%. The limits for reported analytes not listed in the SAPs are 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 WSCF20042209, the ICP-AES MS recovery for Ag was < the lower acceptance limit but ≥30%, and the MSD recovery for Ag was <30%. The ICP-AES Ag result for sample B1BJC2 was a detect and should be qualified as an estimate and flagged "J."

For SDG WSCF20051157, the MS recovery for Al was < the lower acceptance limit but ≥30%. The Al result for sample B1D7K5 was a non-detect and should be qualified as an estimate and flagged "UJ."

For SDG WSCF90900, an MS/MSD pair was not performed for Tc-99 via ICP-MS. The Tc-99 results for samples B21F31 and B21F32 were non-detects and should be qualified as estimates and flagged "UJ."

For SDG WSCF91148, an MS/MSD pair was not performed for Tc-99 via ICP-MS. The Tc-99 result for sample B21FV4 was a non-detect and should be qualified as an estimate and flagged "UJ."

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to SAPs DOE/RL-2009-95 and DOE/RL-2008-57, the relative percent difference (RPD) limits are ±20%. According to SAP DOE/RL-2002-17, the RPD limits are the ones specified in the associated U.S. EPA analytical procedures. According to SAPs DOE/RL-2006-19 and DOE/RL-2006-46, the RPD limits are ±25%. 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 required detection limits with differences <1X the required detection limits no precision infraction occurred.

MS/MSD Samples

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

For SDG WSCF100103, the Mn RPD was above the upper acceptance limit. The Mn result for sample B23C91 was a detect and should be qualified as an estimate and flagged "J."

Field Duplicate Samples

No field duplicates were submitted for analysis.

Field Split Samples

No field splits were submitted for analysis.

- **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 WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148 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

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

HNF-20433, Rev. 0, *Data Validation Procedure for Chemical Analyses*, June 2004.

DOE/RL-2009-95, Rev. 0, *Sampling Analysis Plan for Eleven ARRA Wells to Support the 200 West Groundwater Treatment System in Fiscal Year 2010*, November 2009.

DOE/RL-2002-17, Rev. 0, *Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network*, June 2002.

DOE/RL-2006-19, Rev. 0, *Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant*, March 2006.

DOE/RL-2006-46, Rev. 0, *Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006*, August 2006.

DOE/RL-2008-57, Rev. 1, *Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit*, August 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

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

- **U** — The constituent was analyzed for 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 MDL. 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.

- **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			
SDG: See Comments	Reviewer: AQA	Project: CPP 200 Area, 200 Area SGRP, and 200 Area	Page 1 of 1
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
Mn	J	B23C91	Poor MS/MSD precision
Se (ICP-AES)	UJ	B1BJC2	Laboratory blank contamination
Ag (ICP-AES)	J	B1BJC2	Low MS/MSD recoveries
Li	UJ	B1BJH6	Laboratory blank contamination
U	J	B1D7Y4	Holding time exceeded
Al	UJ	B1D7K5	Low MS recovery
Fe	UJ	B1L965	Laboratory blank contamination
Tc-99	UJ	B21F31, B21F32, B21FV4	Lack of MS/MSD data

Comments: SDGs WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 and WSCF91148

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF100103

Sample # 100103001
SAF# F10-065
Sample ID B23C91

Matrix WATER
Sampled 01/13/10
Received 01/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**01/22/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	UD	<10		ug/L	2	10	200	01/22/10
Manganese	7439-96-5	LA-505-412	D	564 J		ug/L	2	0.20	2.0	01/22/10
Nickel	7440-02-0	LA-505-412	D	5.65		ug/L	2	0.40	4.0	01/22/10
Barium	7440-39-3	LA-505-412	D	61.2		ug/L	2	0.40	4.0	01/22/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	01/22/10
Chromium	7440-47-3	LA-505-412	UD	<1.0		ug/L	2	1.0	10	01/22/10
Cobalt	7440-48-4	LA-505-412	D	2.24		ug/L	2	0.10	0.50	01/22/10
Copper	7440-50-8	LA-505-412	BD	0.230		ug/L	2	0.20	2.0	01/22/10
Vanadium	7440-62-2	LA-505-412	BD	0.670		ug/L	2	0.40	4.0	01/22/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	01/22/10
Strontium	7440-24-6	LA-505-412	D	296		ug/L	2	0.20	2.0	01/22/10
Uranium	7440-61-1	LA-505-412	D	0.496		ug/L	2	0.10	0.40	01/22/10
Arsenic	7440-38-2	LA-505-412	UD	<0.80		ug/L	2	0.80	8.0	01/22/10

LS
4-14-2010

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

B - Analyte < the RDL 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 sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF100275

Sample # 100275001
SAF# F10-065
Sample ID B23CX6

Matrix WATER
Sampled 02/10/10
Received 02/10/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**02/15/10**
ICP-MS										
Aluminum	7429-90-5	LA-505-412	UD	<10		ug/L	2	10	200	02/15/10
Manganese	7439-96-5	LA-505-412	D	53.8		ug/L	2	0.20	2.0	02/15/10
Nickel	7440-02-0	LA-505-412	BD	1.13		ug/L	2	0.40	4.0	02/15/10
Barium	7440-39-3	LA-505-412	D	52.9		ug/L	2	0.40	4.0	02/15/10
Cadmium	7440-43-9	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	02/15/10
Chromium	7440-47-3	LA-505-412	BD	1.68		ug/L	2	1.0	10	02/15/10
Cobalt	7440-48-4	LA-505-412	BD	0.371		ug/L	2	0.10	0.50	02/15/10
Copper	7440-50-8	LA-505-412	BD	0.268		ug/L	2	0.20	2.0	02/15/10
Vanadium	7440-62-2	LA-505-412	D	18.6		ug/L	2	0.40	4.0	02/15/10
Lead	7439-92-1	LA-505-412	UD	<0.20		ug/L	2	0.20	2.0	02/15/10
Strontium	7440-24-6	LA-505-412	D	194		ug/L	2	0.20	2.0	02/15/10
Uranium	7440-61-1	LA-505-412	D	0.768		ug/L	2	0.10	0.40	02/15/10
Arsenic	7440-38-2	LA-505-412	BD	1.12		ug/L	2	0.80	8.0	02/15/10

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

B - Analyte < the RDL 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 sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
~~W040002315~~	~~B1BJC2~~	~~TRENT~~	~~57-12-5~~		~~Cyanide~~	~~WATER~~	~~LA-635-402~~	~~U~~	~~< 4.00~~	~~ug/L~~	~~1.00~~	~~4.0~~	~~12/01/04~~	~~11/22/04~~	~~11/22/04~~
W040002315	B1BJC2	TRENT	18540-29-9		Hexavalent Chromium	WATER	LA-265-403	U	< 3.00e-03	mg/L	1.00	3.0e-03	~~11/23/04~~	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	NH4-N		Nitrogen in ammonium	WATER	LA-503-401		0.814	mg/L	~~5.00~~	0.015	11/23/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	PH		pH Measurement	WATER	LA-212-402		~~7.75~~	pH	1.00	0.010	11/23/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	16984-48-8		Fluoride	WATER	~~LA-533-410~~	U	< 0.180	mg/L	10.00	0.18	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	16887-00-6		Chloride	WATER	LA-533-410		15.2	mg/L	10.00	0.34	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	NO2-N		Nitrogen in Nitrite	WATER	LA-533-410	B	0.748	mg/L	10.00	0.060	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	NO3-N		Nitrogen in Nitrate	WATER	LA-533-410		198	mg/L	5.01e+002	11	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	PO4-P		Phosphate (P) by IC	WATER	LA-533-410	U	< 0.780	mg/L	10.00	0.78	11/22/04	11/22/04	11/22/04
~~W040002315~~	~~B1BJC2~~	~~TRENT~~	~~14808-79-8~~		~~Sulfate~~	~~WATER~~	~~LA-533-410~~		~~27.3~~	~~mg/L~~	~~10.00~~	~~1.5~~	~~11/22/04~~	~~11/22/04~~	~~11/22/04~~
W040002315	B1BJC2	TRENT	7429-90-5		Aluminum	WATER	LA-505-411		78.0	ug/L	1.00	27	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-89-6		Iron	WATER	LA-505-411	U	< 21.0	ug/L	1.00	21	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-95-4		Magnesium	WATER	LA-505-411		5.60e+04	ug/L	10.00	1.9e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-02-0		Nickel	WATER	LA-505-411		3.60	ug/L	1.00	1.4	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-09-7		Potassium	WATER	LA-505-411		1.02e+04	ug/L	1.00	1.1e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-22-4	J	Silver	WATER	LA-505-411	E	4.50	ug/L	1.00	1.8	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-23-5		Sodium	WATER	LA-505-411		1.04e+05	ug/L	10.00	2.0e+03	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-70-2		Calcium	WATER	LA-505-411		1.83e+05	ug/L	10.00	1.6e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-93-2		Lithium	WATER	LA-505-411		14.6	ug/L	1.00	1.0	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-42-8		Boron	WATER	LA-505-411	U	< 26.0	ug/L	1.00	26	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-21-3		Silicon	WATER	LA-505-411		1.80e+04	ug/L	10.00	1.7e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7723-14-0		Phosphorus	WATER	LA-505-411		85.2	ug/L	1.00	48	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7782-49-2	UJ	Selenium	WATER	LA-505-411	C	66.4	ug/L	1.00	18	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-96-5		Manganese	WATER	LA-505-412		261	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-02-0		Nickel	WATER	LA-505-412		4.66	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-22-4		Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002315	B1BJC2	TRENT	7440-36-0	Antimony	WATER	LA-505-412	U	< 1.10	ug/L	1.00	1.1	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-39-3	Barium	WATER	LA-505-412		233	ug/L	1.00	3.5	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-41-7	Beryllium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-43-9	Cadmium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-47-3	Chromium	WATER	LA-505-412	U	< 3.30	ug/L	1.00	3.3	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-50-8	Copper	WATER	LA-505-412		2.30	ug/L	1.00	1.3	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-62-2	Vanadium	WATER	LA-505-412		7.24	ug/L	1.00	0.20	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-66-6	Zinc	WATER	LA-505-412		171	ug/L	1.00	3.7	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-92-1	Lead	WATER	LA-505-412	U	< 0.200	ug/L	1.00	0.20	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-97-6	Mercury	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-98-7	Molybdenum	WATER	LA-505-412		33.1	ug/L	1.00	0.30	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-61-1	Uranium	WATER	LA-505-412		2.56	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-38-2	Arsenic	WATER	LA-505-412		0.828	ug/L	1.00	0.40	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7782-49-2	Selenium	WATER	LA-505-412		1.36	ug/L	1.00	0.40	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-28-0	Thallium	WATER	LA-505-412		0.208	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-24-6	Strontium	WATER	LA-505-412		700	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-31-5	Tin	WATER	LA-505-412	U	< 0.800	ug/L	1.00	0.80	12/13/04	11/22/04	11/22/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
~~W040002540~~	~~B1BJD9~~	~~GRP~~	~~TRENT~~	~~57-12-5~~	~~Cyanide~~	~~WATER~~	~~LA-695-402~~	~~U~~	~~< 4.00~~	~~ug/L~~	~~1.00~~	~~4.0~~	~~12/08/04~~	~~12/07/04~~	~~12/07/04~~
W040002540	B1BJD9	GRP	TRENT	18540-29-9	Hexavalent Chromium	WATER	LA-265-403	U	< 3.00e-03	mg/L	1.00	3.0e-03	12/08/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	NH4-N	Nitrogen in ammonium	WATER	LA-503-401	B	0.0234	mg/L	2.00	6.0e-03	12/08/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	PH	pH Measurement	WATER	LA-212-402		7.82	pH	1.00	0.010	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	16984-48-8	Fluoride	WATER	LA-533-410		0.328	mg/L	1.00	0.018	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	16887-00-6	Chloride	WATER	LA-533-410		12.7	mg/L	20.00	0.68	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	NO2-N	Nitrogen in Nitrite	WATER	LA-533-410	B	0.0770	mg/L	1.00	6.0e-03	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	NO3-N	Nitrogen in Nitrate	WATER	LA-533-410		14.8	mg/L	20.00	0.44	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	PO4-P	Phosphate (P) by IC	WATER	LA-533-410	U	< 0.0780	mg/L	1.00	0.078	12/07/04	12/07/04	12/07/04
~~W040002540~~	~~B1BJD9~~	~~GRP~~	~~TRENT~~	~~14808-79-8~~	~~Sulfate~~	~~WATER~~	~~LA-533-410~~		~~24.5~~	~~mg/L~~	~~20.00~~	~~3.0~~	~~12/07/04~~	~~12/07/04~~	~~12/07/04~~
W040002540	B1BJD9	GRP	TRENT	7429-90-5	Aluminum	WATER	LA-505-411	U	< 27.0	ug/L	1.00	27	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-89-6	Iron	WATER	LA-505-411	U	< 21.0	ug/L	1.00	21	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-95-4	Magnesium	WATER	LA-505-411		1.43e+04	ug/L	1.00	19	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-02-0	Nickel	WATER	LA-505-411		1.80	ug/L	1.00	1.4	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-09-7	Potassium	WATER	LA-505-411		4.75e+03	ug/L	1.00	1.1e+02	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-22-4	Silver	WATER	LA-505-411	U	< 1.80	ug/L	1.00	1.8	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-23-5	Sodium	WATER	LA-505-411		1.72e+04	ug/L	1.00	2.0e+02	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-70-2	Calcium	WATER	LA-505-411		4.40e+04	ug/L	1.00	16	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-93-2	Lithium	WATER	LA-505-411		4.80	ug/L	1.00	1.0	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-42-8	Boron	WATER	LA-505-411	U	< 26.0	ug/L	1.00	26	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-21-3	Silicon	WATER	LA-505-411		2.18e+04	ug/L	1.00	17	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7723-14-0	Phosphorus	WATER	LA-505-411		50.5	ug/L	1.00	48	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7782-49-2	Selenium	WATER	LA-505-411	U	< 18.0	ug/L	1.00	18	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-96-5	Manganese	WATER	LA-505-412		78.0	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-02-0	Nickel	WATER	LA-505-412		1.19	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-22-4	Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04

LS 4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W040002540	B1BJD9	GRP	TRENT	7440-36-0	Antimony	WATER	LA-505-412	U	< 1.10	ug/L	1.00	1.1	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-39-3	Barium	WATER	LA-505-412		56.6	ug/L	1.00	3.5	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-41-7	Beryllium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-43-9	Cadmium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-47-3	Chromium	WATER	LA-505-412	U	< 3.30	ug/L	1.00	3.3	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-50-8	Copper	WATER	LA-505-412	U	< 1.30	ug/L	1.00	1.3	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-62-2	Vanadium	WATER	LA-505-412		19.1	ug/L	1.00	0.20	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-66-6	Zinc	WATER	LA-505-412		42.5	ug/L	1.00	3.7	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-92-1	Lead	WATER	LA-505-412	U	< 0.200	ug/L	1.00	0.20	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-97-6	Mercury	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-98-7	Molybdenum	WATER	LA-505-412		9.63	ug/L	1.00	0.30	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-61-1	Uranium	WATER	LA-505-412		0.946	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-38-2	Arsenic	WATER	LA-505-412	U	< 0.400	ug/L	1.00	0.40	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7782-49-2	Selenium	WATER	LA-505-412		1.23	ug/L	1.00	0.40	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-28-0	Thallium	WATER	LA-505-412		0.119	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-24-6	Strontium	WATER	LA-505-412		170	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-31-5	Tin	WATER	LA-505-412	U	< 0.800	ug/L	1.00	0.80	12/21/04	12/07/04	12/07/04

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RQ = Result Qualifier

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DF = Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
W050000144	B1BJH6	TRENT	57-12-5		Cyanide	WATER	LA-695-402	U	< 4.00	ug/L	1.00	4.0	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	18540-29-9		Hexavalent Chromium	WATER	LA-265-403	U	< 3.00e-03	mg/L	1.00	3.0e-03	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	NH4-N		Nitrogen in ammonium	WATER	LA-503-401	B	0.0271	mg/L	1.00	3.0e-03	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	PH		pH Measurement	WATER	LA-212-402		7.77	pH	1.00	0.010	01/25/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	16984-48-8		Fluoride	WATER	LA-533-410		0.335	mg/L	2.00	0.036	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	16887-00-6		Chloride	WATER	LA-533-410		8.62	mg/L	20.00	0.68	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	NO2-N		Nitrogen in Nitrite	WATER	LA-533-410	U	< 0.0120	mg/L	2.00	0.012	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	NO3-N		Nitrogen in Nitrate	WATER	LA-533-410		12.5	mg/L	20.00	0.44	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	PO4-P		Phosphate (P) by IC	WATER	LA-533-410	U	< 0.156	mg/L	2.00	0.16	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	14808-79-8		Sulfate	WATER	LA-533-410		21.1	mg/L	2.00	0.30	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7429-90-5		Aluminum	WATER	LA-505-411		51.5	ug/L	1.00	27	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-89-6		Iron	WATER	LA-505-411	U	< 21.0	ug/L	1.00	21	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-95-4		Magnesium	WATER	LA-505-411		1.24e+04	ug/L	1.00	19	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-02-0		Nickel	WATER	LA-505-411		1.40	ug/L	1.00	1.4	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-09-7		Potassium	WATER	LA-505-411		4.34e+03	ug/L	1.00	1.1e+02	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-22-4		Silver	WATER	LA-505-411	U	< 1.80	ug/L	1.00	1.8	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-23-5		Sodium	WATER	LA-505-411		2.44e+04	ug/L	1.00	2.0e+02	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-70-2		Calcium	WATER	LA-505-411		3.68e+04	ug/L	1.00	16	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-93-2	UJ	Lithium	WATER	LA-505-411	C	6.20	ug/L	1.00	1.0	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-42-8		Boron	WATER	LA-505-411		29.3	ug/L	1.00	26	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-21-3		Silicon	WATER	LA-505-411		2.18e+04	ug/L	1.00	17	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7723-14-0		Phosphorus	WATER	LA-505-411	U	< 48.0	ug/L	1.00	48	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7782-49-2		Selenium	WATER	LA-505-411		23.5	ug/L	1.00	18	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-96-5		Manganese	WATER	LA-505-412		29.4	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-02-0		Nickel	WATER	LA-505-412		1.94	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-22-4		Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
J - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
C - The Analyte was found in the Associated Blank.
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000144	B1BJH6	TRENT	7440-36-0	Antimony	WATER	LA-505-412	U	< 1.10	ug/L	1.00	1.1	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-39-3	Barium	WATER	LA-505-412		32.1	ug/L	1.00	3.5	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-41-7	Beryllium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-43-9	Cadmium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-47-3	Chromium	WATER	LA-505-412	U	< 3.30	ug/L	1.00	3.3	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-50-8	Copper	WATER	LA-505-412	U	< 1.30	ug/L	1.00	1.3	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-62-2	Vanadium	WATER	LA-505-412		15.2	ug/L	1.00	0.20	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-66-6	Zinc	WATER	LA-505-412		42.9	ug/L	1.00	3.7	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-92-1	Lead	WATER	LA-505-412	U	< 0.200	ug/L	1.00	0.20	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-97-6	Mercury	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-98-7	Molybdenum	WATER	LA-505-412		8.39	ug/L	1.00	0.30	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-61-1	Uranium	WATER	LA-505-412		0.701	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-38-2	Arsenic	WATER	LA-505-412	U	< 0.400	ug/L	1.00	0.40	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7782-49-2	Selenium	WATER	LA-505-412		0.404	ug/L	1.00	0.40	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-28-0	Thallium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-24-6	Strontium	WATER	LA-505-412		128	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-31-5	Tin	WATER	LA-505-412	U	< 0.800	ug/L	1.00	0.80	02/01/05	01/25/05	01/25/05

MDL = Minimum Detection Limit
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X - Other flags and notes described in the comments/narrative.
C - The Analyte was found in the Associated Blank.
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
~~W050001669~~	~~B1D7K5~~	~~TRENT~~	~~18540-29-9~~		~~Hexavalent Chromium~~	~~WATER~~	~~LA-285-403~~		~~0.0172~~	~~mg/L~~	~~1.00~~	~~3.0e-03~~	~~06/02/05~~	~~06/01/05~~	~~06/01/05~~
W050001669	B1D7K5	TRENT	NH4-N		Nitrogen in ammonium	WATER	LA-503-401	B	0.0124	mg/L	1.00	2.0e-03	06/10/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	PH		pH Measurement	WATER	LA-212-402		7.68	pH	1.00	0.010	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	16984-48-8		Fluoride	WATER	LA-533-410	U	< 0.918	mg/L	51.00	0.92	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	16887-00-6		Chloride	WATER	LA-533-410		29.3	mg/L	51.00	1.7	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	NO2-N		Nitrogen in Nitrite	WATER	LA-533-410	U	< 0.306	mg/L	51.00	0.31	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	NO3-N		Nitrogen in Nitrate	WATER	LA-533-410		63.7	mg/L	51.00	1.1	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	PO4-P		Phosphate (P) by IC	WATER	LA-533-410	U	< 3.98	mg/L	51.00	4.0	06/01/05	06/01/05	06/01/05
~~W050001669~~	~~B1D7K5~~	~~TRENT~~	~~14808-79-8~~		~~Sulfate~~	~~WATER~~	~~LA-533-410~~		~~59.9~~	~~mg/L~~	~~51.00~~	~~7.0~~	~~06/01/05~~	~~06/01/05~~	~~06/01/05~~
W050001669	B1D7K5	TRENT	7429-90-5	UJ	Aluminum	WATER	LA-505-411	U	< 27.0	ug/L	1.00	27	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7439-89-6		Iron	WATER	LA-505-411		39.4	ug/L	1.00	21	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7439-95-4		Magnesium	WATER	LA-505-411		3.84e+04	ug/L	1.00e+002	1.9e+03	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-09-7		Potassium	WATER	LA-505-411		6.32e+03	ug/L	1.00	1.1e+02	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-23-5		Sodium	WATER	LA-505-411		1.69e+04	ug/L	1.00	2.0e+02	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-70-2		Calcium	WATER	LA-505-411		1.09e+05	ug/L	1.00e+002	1.6e+03	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7439-93-2		Lithium	WATER	LA-505-411		11.5	ug/L	1.00	1.0	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-42-8		Boron	WATER	LA-505-411	U	< 26.0	ug/L	1.00	26	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-21-3		Silicon	WATER	LA-505-411		2.10e+04	ug/L	1.00	17	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7723-14-0		Phosphorus	WATER	LA-505-411	U	< 48.0	ug/L	1.00	48	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7439-96-5		Manganese	WATER	LA-505-412		24.0	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-02-0		Nickel	WATER	LA-505-412		1.85	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-22-4		Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-36-0		Antimony	WATER	LA-505-412	U	< 1.00	ug/L	1.00	1.0	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-39-3		Barium	WATER	LA-505-412		80.1	ug/L	1.00	4.0	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-41-7		Beryllium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-43-9		Cadmium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
J - Analyte is an estimate, has potentially larger errors
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
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Report WGPP/ver. 1.1
Groundwater Remediation Program

LS 4-14-2010

REVISED RDayer 1/3/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050001669	B1D7K5	TRENT	7440-47-3		Chromium	WATER	LA-505-412		23.2	ug/L	1.00	4.0	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-50-8		Copper	WATER	LA-505-412	U	< 2.00	ug/L	1.00	2.0	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-62-2		Vanadium	WATER	LA-505-412		11.5	ug/L	1.00	0.20	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-66-6		Zinc	WATER	LA-505-412		94.4	ug/L	1.00	4.0	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7439-92-1		Lead	WATER	LA-505-412	U	< 0.200	ug/L	1.00	0.20	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7439-97-6		Mercury	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7439-98-7		Molybdenum	WATER	LA-505-412		3.30	ug/L	1.00	0.30	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-61-1		Uranium	WATER	LA-505-412		2.21	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-38-2		Arsenic	WATER	LA-505-412		0.982	ug/L	1.00	0.40	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7782-49-2		Selenium	WATER	LA-505-412		3.88	ug/L	1.00	0.40	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-28-0		Thallium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-24-6		Strontium	WATER	LA-505-412		440	ug/L	1.00	0.20	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	7440-31-5		Tin	WATER	LA-505-412	U	< 1.00	ug/L	1.00	1.0	06/14/05	06/01/05	06/01/05
W050001670	B1D7Y4	TRENT	7440-61-1	J	Uranium	WATER	LA-505-412		2.32	ug/L	1.00	0.10	12/21/05	06/01/05	06/01/05

LS
4-14-2010

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
J - Analyte is an estimate, has potentially larger errors
8 - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

REVISED
DAyes
1/3/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent A0-21
SAF Number: F06-022
Sample # W060003428
Client ID: B1JX48 TRENT WSCF

Matrix: WATER

Group #: WSCF20061212
Department: Inorganic
Sampled: 10/02/06
Received: 10/02/06

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		0.432	mg/L			1.00	5.5e-03		10/02/06
Nitrogen in Nitrate	NO3-N	LA-533-410		6.26	mg/L			10.00	0.073		10/02/06
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 2.00e-03	mg/L			1.00	2.0e-03		10/03/06
ICP-200.8 MS All possible meta Prep											**10/03/06**
ICP-200.8 MS All possible meta							LS 4-14-2010				
Manganese	7439-96-5	LA-505-412		55.0	ug/L			1.00	0.100	0.100	10/04/06
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100	0.200	10/04/06
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100	0.250	10/04/06
Uranium	7440-61-1	LA-505-412		0.976	ug/L			1.00	0.0500	0.100	10/04/06

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

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
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: F07-006
Sample # W07GR01755
Client ID: B1L952 TRENT WSCF

Matrix: WATER

Group #: WSCF20071194
Department: Inorganic
Sampled: 07/12/07
Received: 07/12/07

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	D	4.23	mg/L			5.00	0.030		07/13/07
Chloride	16887-00-6	LA-533-410	D	28.7	mg/L			5.00	0.15		07/13/07
Nitrogen in Nitrite	NO2-N	LA-533-410	BD	0.252	mg/L			5.00	0.050		07/13/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	292	mg/L			1.01e+002	0.50		07/13/07
Sulfate	14808-79-8	LA-533-410	D	61.9	mg/L			5.00	0.35		07/13/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403		0.162	mg/L			1.00	2.0e-03		07/12/07
ICP Metals Analysis, Grd H20 P Prep											**07/30/07**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	CD	145	ug/L			5.00	45		07/31/07
Magnesium	7439-95-4	LA-505-411	D	2.68e+04	ug/L			5.00	30		07/31/07
Potassium	7440-09-7	LA-505-411	D	8.64e+03	ug/L			5.00	2.2e+02		07/31/07
Sodium	7440-23-5	LA-505-411	D	4.40e+05	ug/L			5.00	1.4e+02		07/31/07
Calcium	7440-70-2	LA-505-411	D	7.66e+04	ug/L			5.00	1.7e+02		07/31/07
ICP-200.8 MS All possible meta Prep											**07/17/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		78.1	ug/L			1.00	0.100		07/18/07
Nickel	7440-02-0	LA-505-412		2.30	ug/L			1.00	0.200		07/18/07
Antimony	7440-36-0	LA-505-412		0.314	ug/L			1.00	0.300		07/18/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100		07/18/07
Chromium	7440-47-3	LA-505-412		118	ug/L			1.00	0.500		07/18/07
Vanadium	7440-62-2	LA-505-412		27.4	ug/L			1.00	0.200		07/18/07
Lead	7439-92-1	LA-505-412		0.275	ug/L			1.00	0.100		07/18/07
Uranium	7440-61-1	LA-505-412		4.91	ug/L			1.00	0.0500		07/18/07

<2
4-14-2010

MDL=Minimum Detection Limit
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B - The analyte < the RDL but >= the IDL/MDL (inorg)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria.(org)
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: F07-006
Sample # W07GR01755
Client ID: B1L952 TRENT WSCF

Matrix: WATER

Group #: WSCF20071194
Department: Inorganic
Sampled: 07/12/07
Received: 07/12/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Arsenic	7440-38-2	LA-505-412		7.01	ug/L			1.00	0.400		07/18/07
Technetium by ICP-MS											
Technetium by ICP-MS	7440-26-8	LA-505-412		0.0144	ug/L			1.00	1.0e-03		07/25/07
~~**Total Alkalinity as mg/L CaCO3**~~											
~~Total Alkalinity as mg/L CaCO3~~	~~ALKALINITY~~	~~LA-521-411~~		~~180~~	~~mg/L~~			~~1.00~~	~~1.0~~		~~07/16/07~~

LS
4-14-2010

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)
U - Analyzed for but not detected above limiting criteria.(org)

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: F07-006
Sample # W07GR02135
Client ID: B1L965 TRENT WSCF

Matrix: WATER

Group #: WSCF20071433
Department: Inorganic
Sampled: 08/13/07
Received: 08/13/07

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		0.251	mg/L			1.00	6.0e-03		08/14/07
Chloride	16887-00-6	LA-533-410		10.1	mg/L			1.00	0.030		08/14/07
Nitrogen in Nitrite	NO2-N	LA-533-410	B	0.0239	mg/L			1.00	0.010		08/14/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	17.4	mg/L			10.00	0.050		08/14/07
Sulfate	14808-79-8	LA-533-410	D	32.7	mg/L			10.00	0.70		08/14/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403		0.0143	mg/L			1.00	2.0e-03		08/13/07
ICP Metals Analysis, Grd H20 P Prep											**08/21/07**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	C	33.4	ug/L	UJ		1.00	9.0		08/31/07
Magnesium	7439-95-4	LA-505-411		1.56e+04	ug/L			1.00	6.0		08/31/07
Potassium	7440-09-7	LA-505-411		5.22e+03	ug/L			1.00	45		08/31/07
Sodium	7440-23-5	LA-505-411		1.36e+04	ug/L			1.00	27		08/31/07
Calcium	7440-70-2	LA-505-411		4.72e+04	ug/L			1.00	34		08/31/07
ICP-200.8 MS All possible meta Prep											**08/20/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		26.2	ug/L			1.00	0.100		08/22/07
Nickel	7440-02-0	LA-505-412		0.648	ug/L			1.00	0.200		08/22/07
Antimony	7440-36-0	LA-505-412	U	< 0.300	ug/L			1.00	0.300		08/22/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/22/07
Chromium	7440-47-3	LA-505-412		12.3	ug/L			1.00	0.500		08/22/07
Vanadium	7440-62-2	LA-505-412		23.0	ug/L			1.00	0.200		08/22/07
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/22/07
Uranium	7440-61-1	LA-505-412		0.688	ug/L			1.00	0.0500		08/22/07

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)
J - Analyte < lowest calibration but >= MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
C - The Analyte was found in the Associated Blank.(inorg)
E - Analyte is an estimate, has potentially larger errors(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: F07-006
Sample # W07GR02135
Client ID: B1L965 TRENT WSCF

Matrix: WATER

Group #: WSCF20071433
Department: Inorganic
Sampled: 08/13/07
Received: 08/13/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Arsenic	7440-38-2	LA-505-412	E	1.29	ug/L			1.00	0.400		08/22/07
TC99 screen by ICP-200.8 MS Prep											**09/04/07**
TC99 screen by ICP-200.8 MS											
Technetium screen by ICP-MS	7440-26-8-SCRN	LA-505-412	U	< 1.00e-03	ug/L			1.00	1.0e-03		09/05/07
~~**Total Alkalinity as mg/L CaCO3**~~											
~~Total Alkalinity as mg/L CaCO3~~	~~[illegible]~~	~~LA-537-411~~		~~110~~	~~mg/L~~			~~1.00~~	~~1.0~~		~~08/22/07~~

LS
4-14-2010

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

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D - Analyte was identified at a secondary dilution factor(inorg)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

C - The Analyte was found in the Associated Blank.(inorg)
E - Analyte is an estimate, has potentially larger errors(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR02157
Client ID: B1P0X1 TRENT WSCF

Matrix: WATER

Group #: WSCF20071455
Department: Inorganic
Sampled: 08/15/07
Received: 08/15/07

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		0.296	mg/L			1.00	6.0e-03		08/15/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	13.0	mg/L			10.00	0.050		08/15/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-285-403		4.90e-03	mg/L			1.00	2.0e-03		08/15/07
ICP-200.8 MS All possible meta Prep											**08/20/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		10.9	ug/L			1.00	0.100		08/22/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/22/07
Lead	7439-92-1	LA-505-412		0.459	ug/L			1.00	0.100		08/22/07
Uranium	7440-61-1	LA-505-412		0.922	ug/L			1.00	0.0500		08/22/07

LS
4-14-2010

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR03133
Client ID: B1P0M7 TRENT WSCF

Matrix: WATER

Group #: WSCF20072125
Department: Inorganic
Sampled: 11/29/07
Received: 11/29/07

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		0.210	mg/L			1.00	6.0e-03		11/30/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	43.8	mg/L			13.00	0.065		11/30/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	B	3.00e-03	mg/L			1.00	2.0e-03		11/30/07
ICP-200.8 MS All possible meta Prep											**12/06/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		49.1	ug/L			1.00	0.100		12/07/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100		12/07/07
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		12/07/07
Uranium	7440-61-1	LA-505-412		1.44	ug/L			1.00	0.0500		12/07/07

LS
4-14-2010

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

B - The analyte < the RDL but > = the IDL/MDL (inorg)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
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 Michael Neely
Department Inorganic

Group # WSCF90678
Project Number F09-009

Sample # 90678001
SAF# F09-009
Sample ID B1YMF3

Matrix WATER
Sampled 06/29/09
Received 06/29/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**07/13/09**
ICP-MS										
Chromium	7440-47-3	LA-505-412	U	<0.50		ug/L	1	0.50	5.0	07/15/09
Uranium	7440-61-1	LA-505-412		0.844		ug/L	1	0.050	0.20	07/15/09

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

B - Analyte < the RDL 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 sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF90895

Sample # 90895001
SAF# F09-043
Sample ID B21CK6

Matrix WATER
Sampled 08/17/09
Received 08/17/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/27/09**
ICP-MS										
Chromium	7440-47-3	LA-505-412		6.64		ug/L	1	0.50	5.0	08/27/09
Uranium	7440-61-1	LA-505-412		1.26		ug/L	1	0.050	0.20	08/27/09

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

B - Analyte < the RDL 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 sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90900
Project Number F09-043

Sample # 90900001
SAF# F09-043
Sample ID B21F31

Matrix WATER
Sampled 08/18/09
Received 08/18/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/18/09**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412	U	<0.0010	UJ	ug/L	1	0.0010		08/18/09

LS
4-14-2010

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 # WSCF90900
Project Number F09-043

Sample # 90900002
SAF# F09-043
Sample ID B21F32

Matrix WATER
Sampled 08/18/09
Received 08/18/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/18/09**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412	U	<0.0010	UJ	ug/L	1	0.0010		08/18/09

LS
4-14-2010

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 # WSCF91148

Sample # 91148001
SAF# F09-043
Sample ID B21FV4

Matrix WATER
Sampled 09/25/09
Received 09/25/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**09/25/09**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412	U	<0.0010	UJ	ug/L	1	0.0010		09/25/09

LS
4-14-2010

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
WSCF100103

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on January 13, 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, 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.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 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):

- QC Batch 84788 analyzed on sample# B22FC6
    - Manganese – Matrix Spike RPD outside established range. No flags assigned.

All other QC controls are within the established limits.

Attachment 2
Narrative
WSCF100103

Organic Comments

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

All QC controls are within the established limits.

Radiochemistry Comments

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

All 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** — **F10-065-029** — **PAGE 1 OF 1**

COLLECTOR HENNE, MORGAN	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL
SAMPLING LOCATION EW-7 (C7022, 299-W11-90); I-001	**PROJECT DESIGNATION** ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		**SAF NO.** F10-065
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-585	**ACTUAL SAMPLE DEPTH** 29.6	**COA** 300194ES10
SHIPPED TO Waste Sampling & Characterization 00103	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 7N — **AIR QUALITY** ☐ — **DATA TURNAROUND** 45 Days / 45 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	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	None
TYPE OF CONTAINER	aGc*	G/P	G
NO. OF CONTAINER(S)	3	1	1
VOLUME	40mL	500mL	250mL
SAMPLE ANALYSIS	VOA - (26/20 (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Tph Li (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B23C91 X 003	WATER	1/13/10	1145

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. Morgan	1/13/10 1315	TA FRAZIER	1/13/10 1315

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Aluminum, Barium, Chromium, Cobalt, Cadmium, Copper, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium}

☐ ORIGINAL

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

A-6003-618(01/06)

Wednesday, January 13, 2010 7:25:50 PM
Page 2 of 2

Attachment 2
Narrative
WSCF100275

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on February 10th, 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, 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,* pages 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
WSCF100275

- Batch QC 89175 analyzed on sample# B23MT6
- At the time of analysis, the analyst was "diluting" the LCS to mimic the dilution factor performed on client samples. A "D" flag was applied to the LCS in the final report.
    - Strontium – exceeded spiking levels by a factor of 4. Spike recoveries are not valid.

All other QC controls are within the established limits.

Organic Comments

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

All QC controls are within the established limits.

Radiochemistry Comments

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

All 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

F10-065-158

PAGE 1 OF 1

COLLECTOR: WALKER / HELMS

COMPANY CONTACT: DYEKMAN, DL

TELEPHONE NO.: 373-2530

PROJECT COORDINATOR: DYEKMAN, DL

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

SAMPLING LOCATION: FW-12 (C7019, 299-W11-49); I-003

PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water

SAF NO.: F10-065

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-585 8

ACTUAL SAMPLE DEPTH: 320'

COA: 300194ES10

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	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	None
TYPE OF CONTAINER	aG*	G/P	G
NO. OF CONTAINER(S)	1	1	1
VOLUME	40mL	500mL	250mL
SAMPLE ANALYSIS	VOA 8260B (HCL)	SEE TRM (1) IN SPECIAL INSTRUCTIONS	Trimer - Ion Ex (Tritium)

100275

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B23CX6	WATER	2/10/10	1220

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
S. Walker	2/10/10 1255	V. Helms	2/10/10 1255
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) (Aluminum, Barium, Chromium, Cobalt, Cadmium, Copper, Manganese, Nickel, Vanadium) ICP/MS - 200.8 (Add-on) (Arsenic, Lead, Strontium, Uranium)

☐ ORIGINAL

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

A-6003-618(01/05)

Wednesday, February 10, 2010 7:15:03 PM
Page 2 of 2

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042209**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4303, 240' – 250', GRP samples (B1BJC2 and B1BJC9) were received at the WSCF Laboratory on November 22, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx/Gx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Strontium-89/90 and Technetium-99) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 13 through 14 for QC details. Analytical Note:

- Nitrite - Sample B1BJC2 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 20 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Selenium – The analyte was detected in the associated preparation Blank sample and evaluated. Sample B1BJC2 result was C-flagged.
- Silver – Matrix Spike and Matrix Spike Duplicate recovery were below established laboratory limits. Sample B1BJC2 was E (estimate) flagged.
- Calcium, Magnesium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 21 through 28 for QC details. Analytical Notes:

- Preparation Date: 10-dec-2004.
- Barium, Manganese, Strontium and Zinc - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Mercury – The Laboratory Control Sample recovery was below established laboratory limits. Sample B1BJC2 result was below the detection limit and not flagged.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 29 for QC details. Analytical Note:

- Duplicate QC sample was analyzed on sample# PFP04-243-93 (SDG# 20042218, a non GPP group). pH QC samples are analyzed for laboratory controls only.

All other laboratory QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 40 for QC details. Analytical Notes:

- Preparation Date: 29-nov-2004.

- Terphenyl-d14 (surrogate) – Matrix Spike Duplicate recovery was below established laboratory limits and Matrix Spike/Spike Duplicate Relative Percent Difference exceeded the laboratory limits. The sample results were not flagged.

- 2-Fluorophenol, Terphenyl-d14 and 2,4,6-Tribromophenol (surrogates) were below established limits. The Matrix Spike and Matrix Spike Duplicate were analyzed on B1BJC2 and since no target compounds were detected, the sample was not re-analyzed or flagged.

All other QC controls are within the established limits.

TPHD-WA- The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 41 for QC details. Analytical Notes:

- Preparation Date: 24-nov-2004.

- Kerosene - Matrix Spike Duplicate Relative Percent Difference exceeded established laboratory limits. All other QC control samples were within limits and sample B1BJC2 result was not flagged.

All other QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 42 through 44 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9W0 (SDG# 20042208, SAF# F03-019).

- Toluene - sample B1BJC2 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

- Toluene - sample B1BJC2 result was B; analyte was detected in the associated Blank QC sample.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 46 through 51 for QC details. Analytical Note:

- Neptunium-237 – The Laboratory Control Sample recovery was below established laboratory limits. The sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	84.4
LCS		Sr-85	96.3
B1BJC2	W040002315	Sr-85	103.1
DUPLICATE	W040002315	Sr-85	85.0

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 1 OF 3
COLLECTOR: Alexander/Gent/Thomas M Alexander 11/22	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; ~~220~~ ft. open hole 240-250 ft RJG 11-18-04	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.: GPP-03-017	FIELD LOGBOOK NO.: — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.:	BILL OF LADING/AIR BILL NO.:	

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

SPECIAL HANDLING AND/OR STORAGE: 20042209

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL RJG 11-9-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC2	WATER	11/22/04	10:00	✓✓✓	✓	✓	✓	✓	✓	✓	✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: M Alexander	DATE/TIME: 11/22/04 12:30	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 11/22/04 1230
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-001	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N **AIR QUALITY** ☐	**DATA TURNAROUND** **45 Days**
SAMPLING LOCATION 200-ZP-1, C4303; ~~220 ft~~ open hole 240-250ft	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032		
ICE CHEST NO. GPP-03-017	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas Mahoud	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; 220 ft. GPP-03-017	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO. — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None
TYPE OF CONTAINER	P	P	P	P
NO. OF CONTAINER(S)	1	2	2	1
VOLUME	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B1BJC2	WATER	11/22/04	10:00	✓	✓✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. Vanlaiwood	11/22/4 12:35	K Beebe K Beebe	11/22/04 1730
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: Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-008	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas Mahood	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4303;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
GPP-03-017		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC9	WATER	11/22/04	10:00	✓									
2004000236													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. L. Mahood	11/22/04 12:30	[illegible]	11/22/04 1230
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

Filtered

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042338**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater, C4301, 270', GRP samples (B1BJD9 and B1BJF6) were received at the WSCF Laboratory on December 07, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.

- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium), GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. Analytical Notes:

- Nitrite - Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrite – The Duplicate Relative Percent Difference exceeded established laboratory limits. The RPD criterion is not applicable to sample results less than ten times the Method Detection Limit.

All other QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 26 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC3 (Lab Sample# W040002529, SDG# 20042296, SAF# F04-032).
- Manganese and Strontium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Matrix Spike precision was evaluated on sample# B19386 (SDG# 20042408, SAF# F04-014.)
- Calcium, Iron and Magnesium - The analytes detected in the associated preparation Blank. Sample was evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 27 for QC details. Laboratory Control samples and Duplicate samples were analyzed as per the GRP Letter of Instruction. Analytical Note:

- Sample Duplicate was analyzed on Sample #PFF-04-243-97 (non GRP sample).

All laboratory QC controls for the method were within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 09-dec-2004.
- Terphenyl-d14 (surrogate) – The Matrix Spike and Sample B1BJD9 surrogate recovery were less than the established laboratory limits. The Matrix Spike Relative Percent Difference exceeds established laboratory limits. Sample results were not flagged.

All other QC controls are within the established limits.

TPHD–WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike, Laboratory Control Sample and Laboratory Control Sample Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 39 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Matrix Spike QC sample was analyzed on sample# B1BJC3 (SDG# 20042296, SAF# F04-032).
- Precision was evaluated on the Laboratory Sample and Laboratory Sample Duplicate.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 42 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BRB2 (SDG# 20042308, SAF# F04-006).

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Matrix Spike (Technetium-99 only), Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 44 through 48 for QC details. Analytical Note:

- Technetium-99 - Matrix Spike and Duplicate QC samples were analyzed on sample# B1BXJ0 (SDG# 20042328, SAF# F04-006).

- Neptunium-237 – Laboratory Control Sample recovery was below established laboratory limits. Sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
BLANK		Sr-85	92.8
LCS		Sr-85	108.2
B1BJD9	W040002540	Sr-85	33.0
DUPLICATE	W040002540	Sr-85	38.0

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.

Herlene S. Rich
WSCF Production Control

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

1/4-05

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 1 OF 3

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240ft~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days / 45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE 20042338

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL RJG	~~150mL~~ 250mL 1-10-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJD9 W0400254D	WATER	12/7/04	0930	X3	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT	12/7/04 12:15	Victor Timms	12/07/04 12:15
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

FILTERED @ 0.45 µM

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-030	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240 ft.~~ 270' 12/7/04 PMG	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 3 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4301; 240 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None								
TYPE OF CONTAINER	P	P	P	P								
NO. OF CONTAINER(S)	1	2	2	1								
VOLUME	1000mL	1000mL	1000mL	500mL								
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;								

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJD9	WATER	12/7/04	0930	X	X	X	X							

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	FILTERED @ 0.45 µm
PMGENT	12/7/04 12:15	Victor Sims	12/7/04 12:15	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-049	PAGE 1 OF 1

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301 ~~X240 R~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C												
TYPE OF CONTAINER	aGs*												
NO. OF CONTAINER(S)	3												
VOLUME	40mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJF6 W04002344	WATER	12/7/04	0830	X										

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM AMGENT/	DATE/TIME 12/7/04	RECEIVED BY/STORED IN Victor Sims	DATE/TIME 12/7/04 12:15
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20050155**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4302, 235' GRP samples (B1BJH6 and B1BJJ3) were received at the WSCF Laboratory on January 25, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Acknowledgement of Samples Received are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Note:

- Sample B1BJH6 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold time for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 09-feb-2005.
- Calcium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Silver, Calcium and Lithium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results, with the following exceptions: Sample B1BJH6 result was C-flagged for Lithium.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 24 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

pH - The hold time for this analysis was met. Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 25 for QC details. Analytical Note:

- Duplicate QC samples were analyzed on sample# B1C371 (SDG# 20050167, SAF# F02-001).

All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 32 through 37 for QC details. Analytical Notes:

- Preparation Date: 31-jan-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9N2 (SDG# 20050186, SAF# F03-019).
- Terphenyl-d14 (surrogate) – Matrix and Matrix Spike Duplicate recoveries were below established laboratory limits. Surrogate recovery for the sample was within limits and the sample B1BJH6 results were not flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 38 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 39 through 41 for QC details. Analytical Note:

- Carbon Tetrachloride - sample B1BJJ3 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 43 through 47 for QC details. Analytical Notes:

- Strontium-89/90 - Duplicate QC samples was analyzed on sample# B1BRC5 (SDG# 20050180, SAF# F02-003).

- Neptunium-237 – Duplicate Relative Percent Difference exceeded established laboratory limit and the Laboratory Control Sample recovery was below established laboratory limits. Sample result was X-flagged.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	69.0
LCS		Sr-85	101.4
B1BRC5	W050000169	Sr-85	69.6
DUPLICATE		Sr-85	80.6

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1BRC6	W050000170	Sr-85	71.0
B1BJH6	W050000144	Sr-85	76.8

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc. 2/24	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 1 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302; 235 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

20050155

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJH6	WATER	1/25/05	0745	X	X	X	X	X	X	X	X	X	X
W05000144													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RMGENT/RMGent	1/25/05 1040	RB [illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-059	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4302; 235 ft.	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (HG); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4302; 235 ft.	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO. — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None	
TYPE OF CONTAINER	P	P	P	P	
NO. OF CONTAINER(S)	1	2	2	1	
VOLUME	1000mL	1000mL	1000mL	500mL	
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJH6	WATER	1/25/05	0745	X	X	X	X						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
PMGENT/ [illegible]	1/25/05 1640	[illegible]	1/25/05 1640	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-078	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJJ3	WATER	1/25/05	0845	X									
W05C000148													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT/	1/25/05 1040		1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20051157, Rev. 1**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4694 (I-1), samples (B1D7K5 and B1D7Y4) were received at the WSCF Laboratory on June 1, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

Compliant to GRP direction on December 9, 2005, uranium analysis was performed on sample B1D7Y4. The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 47 through 48, for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).
- Sample B1D7K5 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

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Dhynes
1/3/06

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide – Sample was not analyzed for cyanide. Since the pH of the sample was less than 12, the analysis was cancelled.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 16 through 17 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Aluminum, Calcium and Magnesium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.
- Calcium, Magnesium and Sodium – Due to insufficient spike concentration, Matrix Spike Matrix Spike Duplicate and Spike Relative Percent Difference results are reported as "n/a".
- Aluminum – The Matrix Spike and Matrix Spike Duplicate recoveries are biased low. Sample B1D7K5 result is potentially biased low.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. For the uranium analysis, a Blank, Laboratory Control Sample and Duplicate QC samples were analyzed. There was not enough sample material for a Matrix Spike or Matrix Spike Duplicate Analysis. See pages 18 through 21a for QC details. Analytical Notes:

- Preparation Date: 13-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7K0 (SDG# 20051190, SAF# F04-032) for all metals except uranium.
- Strontium – Due to high sample concentrations, the Matrix Spike and Matrix Spike recoveries are reported as "n/a".
- Uranium Analysis – Added per client request on December 9, 2005. A Duplicate QC sample was analyzed on sample# B1D7K5.

All other QC controls are within the established limits.

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pH - The hold time for this analysis was met. A Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 22 for QC details. All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 29 through 34 for QC details. Analytical Notes:

- Preparation Date: 06-jun-2005.
- Bis (2-ethylhexyl) phthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was B flagged.
- Diethylphthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was less than the reportable detection limit, but greater than or equal to the method detection limit. Sample B1D7K5 result was BJ flagged.
- Phenol-5d (surrogate) – recovery was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.
- Pentachlorophenol – Laboratory Control Sample result was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 35 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 38 for QC details.

All QC controls are within the established limits.

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1/3/06

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate QC

samples were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 44 for QC details. Analytical Note:

- Strontium-89/90 - Duplicate QC sample was analyzed on sample# B1CWD7 (SDG# 20051152, SAF# F02-003).

All QC controls are within the established limits.

- Uranium-234 and Uranium-235 - Additional Batch QC Data are summarized below:

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
Uranium-234/ Uranium-235				
BLANK		U-234	5.428E-02	
BLANK		U-235	2.232E-02	
B1D7K5	W050001669	U-234	1.182E+00	
DUPLICATE	W050001669	U-234	1.227E+00	3.7%
B1D7K5	W050001669	U-235	4.361E-02	
DUPLICATE	W050001669	U-235	4.716E-02	7.8%

- Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontrium-85			
BLANK		Sr-85	95.9%
LCS		Sr-85	89.6%
B1CWD7	W050001657	Sr-85	93.8%
DUPLICATE	W050001657	Sr-85	93.1%
B1D7K5	W050001669	Sr-85	81.6%

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DMyers 1/3/06

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Uranium-232			
BLANK		U-232	74.8%
LCS		U-232	70.4%
B1D7K5	W050001669	U-232	91.2%
DUPLICATE	W050001669	U-232	86.2%

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

REVISED
DLynes 1/3/06

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 | PAGE 1 OF 2

COLLECTOR: Alexander/Gent/Mahood

COMPANY CONTACT: TRENT, SJ

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: TRENT, SJ

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

AIR QUALITY: ☐

SAMPLING LOCATION: 200-ZP-1, C4694, I-1

PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater

SAF NO.: F04-032

ICE CHEST NO.:

FIELD LOGBOOK NO.:

COA: 119325ES10

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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

2005157

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	G/P	P	G/P	G/P	G/P	G/P	aG	G/P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	5/26/05 ~~60mL~~ 125mL Rem	5/26/05 ~~150mL~~ 125mL Rem	5/26/05 ~~120mL~~ 125mL Rem	500mL	1000mL PDW P.O.Mu 6/29/2005	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	1210	3 ✓	4 ✓	✓	✓	✓	✓	✓	2 ✓	✓

W5000469

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.O. Mahood/Richard O. Mahood	6/1/5 1415	[illegible]	6/1/5 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {3+4 Methylphenol (cresol, m+p)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010B (TAL) {Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium} ICP Metals - 6010B (Add-On) {Boron, Lithium, Phosphorus, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

LABORATORY SECTION — RECEIVED BY | TITLE | DATE/TIME

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

REVISED R Dayes 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146

COLLECTOR Alexander/Gent/Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 7N	**DATA TURNAROUND** 45 Days / 45 Days	**AIR QUALITY** [ ]	
SAMPLING LOCATION 200-ZP-1, C4694, I-1	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**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=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	None	None	~~HCl to pH <2 CSL 2nd~~			
TYPE OF CONTAINER	G/P	G/P	P	~~40m~~ ~~Rem 5/26/05~~ As			
NO. OF CONTAINER(S)	2	2	1	3			
VOLUME	1000mL	1000mL	500mL	~~40mL~~		Add	
SAMPLE ANALYSIS	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	~~Special Instructions~~ ~~All pH 1 of 2~~	5/31/05 Rem	Uranium - Isotopic PDhi P.O.Mix 6/18/2005	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	12:10	2✓	2✓	✓						
~~B1D7K5-A~~	~~WATER~~ Rem 5/31/05								Add Uranium analysis - ICP-MS PDhi P.O.Mix 12/22/2005			

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Mahood/Robert D. McLeod	6/1/5 1415	[illegible]	6/1/05 1415
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

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

REVISED RDAyers 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-169	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Mahood	TRENT, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
200-ZP-1, C4694, I-B1 Rem 6/1/05	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1D7Y4	WATER	6-1-5	1210	3 ✓									
[illegible]													

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Richard C. Mahood / R.C. Mahood	6/1/05 1415	[illegible]	6/1/05 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

REVISED
Dayes
1/3/06

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20061212**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F06-022**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 / 200-UP-1 RI Sampling and Analysis (Laundry Facility) Groundwater samples (B1JX34 and B1JX48) were received at the WSCF Laboratory on October 2, 2006. 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 (GRP) – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

It should be noted that the attached chain of custody was stamped "iced", initialed and dated 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,* page 12, page 22 and page 28, for a complete listing of approved analytical methods

Inorganic Comments

Anions - Hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 9 for QC details.

All QC controls are within the established limits.

Hexavalent Chromium - The hold time for this analysis was met. A Blank, Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 10 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 11 for QC details. Analytical Notes:

- Preparation Date: 03-oct-2006.
- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX20 (SDG# 20061146, SAF# F06-022).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 18 through 20 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX35 (SDG# 20061236, SAF# F06-022).
- Chloroform- sample B1JX48 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF's radiochemical methods. A Blank, Duplicate QC, Matrix Spike (Technetium only) and a Laboratory Control Sample were analyzed with this delivery group. See pages 24 and 26 for QC details. Analytical Note:

- Strontium-90 – Batch QC was performed on a non-GRP (Sample# S667124, SDG# 20061204). Refer to table below for Batch QC detail.

Batch QC Data (Results) - Based on SDG# 20061204				
Sample Number	**Lab Sample ID**	**Isotope**	**QC**	
			Results (pCi/L)	**RPD %**
Strontium-90				
S667124	W060003424	Sr-90	3.100E+00	
DUPLICATE	W060003424	Sr-90	3.050E+00	1.6%

All QC controls are within the established limits.

Strontium-85 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery**
Strontium-85			
BLANK		Sr-85	94.3%
LCS		Sr-85	96.8%
S667124	W060003424	Sr-85	83.5%
DUPLICATE	W060003424	Sr-85	80.7%
B1JX48	W060003428	Sr-85	88.5%

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

11/01/06

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F06-022-110 PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes 20061212	BYRNES, ME	373-3996	TRENT, SJ	7N	
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
C5103 (299-W14-72), I-1 FB 2941	200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		F06-022	☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121075~~ES20	**METHOD OF SHIPMENT**		
			GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

TIE to: B1J X39

PRESERVATION	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1JX34 W06000342 7	WATER	10-2-06	1340	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [signature] 11-2-06	1415	K Bates [signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

ICED
Initial
10/2/06 Date

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

Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F06-022-129 | PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes	BYRNES, ME	373-3996	TRENT, SJ		
SAMPLING LOCATION C5103 (299-W14-72), I-1 294'	**PROJECT DESIGNATION** 200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		**SAF NO.** F06-022	**AIR QUALITY** ☐	**45 Days / 45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121875~~ES20 10-2-06	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

TIE TO : B1JX39

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	P	P	P	P	P
NO. OF CONTAINER(S)	3	1	1	1	2	2
VOLUME	40mL	~~120~~mL 125	125mL	500mL	1L	1L
SAMPLE ANALYSIS	VOA - 8260B (TCL);	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Strontium-89,90 -- Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1JX48 W06000342 8	WATER	10-2-06	1325	X	X	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope/ [signature] 10-2-06	1415	[signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
VB Initial
10/2/06 Date

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

Sample Delivery Group	WSCF20071194
Sample Matrix	Water
Data Deliverable	Summary Report

Introduction

One (1) groundwater sample was received at the WSCF Laboratory on July 12, 2007. Sample was 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 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 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 13 through 15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Sample Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Note(s):

- Nitrite Sample Duplicate RPD above laboratory acceptance limit, however the Matrix Spike/Matrix Spike Duplicate RPD is within acceptance limits.

All other QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21 through 22 for QC details. Analytical Note(s):

- Iron preparation Blank is high resulting in a "C" flag.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23 through 26 for QC details. Analytical Note(s):

- Chromium preparation Blank positive, however the value is so low in comparison to the sample result no impact evident, no flag applied.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31 through 33 for QC details. Analytical Note:

- Acetone preparation Blank was high, however sample result is "<" therefore no impact to the sample.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 36 through 37 for QC details. All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

for Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John Trechter John Trechter
for Pauline Mix
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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071194	ROHAY, VJ	373-3807	TRENT, SJ	7N	
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	45 Days / 45 Days
C5244 - 1-42 222.3'	T4/T5 Well Installation Characterization - Groundwater		F07-006	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L952 W076R01755	WATER	7.12.07	1155	X	X	X	X	X	X	X	X		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [illegible]	7.12.07 1530	TA Frazier [illegible]	7-12-07 1530
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

** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

ICED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	**WSCF20071433**
Sample Matrix	**Water**
Data Deliverable	**Summary Report**

Introduction

One groundwater sample was received at the WSCF Laboratory on August 13, 2007. Sample was 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18-19 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF21 (SDG# 20071437, SAF# F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. Analytical Note(s):

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1PCL9 (SDG# 20071438, SAF# F02-013).

All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21-22 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).
- Iron contamination detected in the Blank was evaluated and sample result was C flagged.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23-26 for QC details. Analytical Note(s):

- Tc-99 via ICP-MS – Developmental result included in this SDG.
- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).
- Arsenic (B1P3V9) – Spike Relative Percent Difference (RPD) slightly exceeded established laboratory standards. Sample result was E flagged.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. Analytical Note(s):

- Duplicate was analyzed on sample# B1P3W1 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31-33 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.
- Acetone contamination detected in the Blank was evaluated and there was no affect on sample result.

All other QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 35-36 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Tritium – Duplicate and Matrix Spike were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071433	ROHAY, VJ	373-3807	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	
C5244 - 1-53 381	T4/T5 Well Installation Characterization - Groundwater		F07-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L965 W07GR02135	WATER	8-13-07	0935	✓	✓	✓	✓	✓	✓	✓	✓		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Mowder Bruk	8/13/07 1025	TA Frazier Teresa Frazier	8/13/07 1025

SPECIAL INSTRUCTIONS

** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

NCED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	WSCF20071455
Sample Matrix	Water
Data Deliverable	Summary Report

Introduction

Three (3) groundwater samples were received at the WSCF Laboratory on August 15, 2007. 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 17 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 18 for QC details.

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All 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 per the GRP Letter of Instruction. See pages 19-20 for QC details. Analytical Note(s):

- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24-26 for QC details. Analytical Note(s):

- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 29-31 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope, Pfister, Moekler, Julian 20071455	Trent, SJ	373-5869	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
C5574, I-2 326'	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None	
TYPE OF CONTAINER	P	G/P	aG	G/P	G/P	G/P	
NO. OF CONTAINER(S)	1	1	1	1	2	2	
VOLUME	120mL	125mL	500mL	500mL	1L	1L	
SAMPLE ANALYSIS	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy {Cesium-137}	Strontium-89,90 – Total Sr;	Technetium-99 {Technetium-99}	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1P0X1 W076R0215 7	WATER	8-15-07	1125	✓	✓	✓	✓	✓	✓				
				025886	025886	W2213020	024618	024186					

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.D. Julian	8-15-07 1225	TA Frazier / Frazier	8/15/07 1225
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) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
Initial
Date

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julin	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 ~~0~~ Days / ~~0~~ 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		DJa 8-3-07
C5574, I-2 326'	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO DJa 8-3-07 ~~Field Analysis Activities~~ WSCF	**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=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	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P0W2 Q158	WATER	8-15-07	1125	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julin / [signature] 8-15-07	1225	TA Pfrazier / [signature] 8/15/07	1225
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)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform}

ICED
Initial
Date

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julian	Trent, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION C5574, I-2-FB 8-15-07 ~~2975'~~ 326'	**PROJECT DESIGNATION** 200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		**SAF NO.** F07-052	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597ES10	**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=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	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P153 2159	WATER	8-15-07	1057	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.D. Pfister	8-15-07 1225	TA FRAZIER / Jerex Frazier	8/15/07 1225

SPECIAL INSTRUCTIONS

ICED
Initial
Date

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF20072125

Introduction

Three groundwater sample was received at the WSCF Laboratory on November 29, 2007. Sample was 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 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 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 14, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 16 for QC details.

- Matrix Spike, Matrix Spike Duplicate and Sample Duplicate analyzed on sample # B1R0R0 (SDG 20072127, SAF F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The holding time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 17 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The holding time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 18 through 19 for QC details.

- Matrix Spike and Matrix Spike Duplicate analyzed on samples # B1PLB6 (SDG 20072033, SAF F07-030) and B1PLD2 (SDG 20072034, SAF F07-076).

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF20072125

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24 through 26 for QC details.

All QC controls are within the established limits.

Radiochemistry Comments

There are no holding times associated with WSCF's radiochemical methods.

A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction, including Matrix Spike on Tc-99. See pages 28 through 30 for QC details.

- Technetium – 99 Duplicate and Matrix Spike analyzed on sample # B1RF77 (SDG 20072108, SAF F08-014).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John E. Trechter
WSCF Client Services

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
C5572, I-1	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization 20072125	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None
TYPE OF CONTAINER	P	~~G~~/P	aG	~~G~~/P	~~G~~/P	~~G~~/P
NO. OF CONTAINER(S)	1	1	1	1	2	2
VOLUME	120mL	125mL	500mL	500mL	1L	1L
SAMPLE ANALYSIS	IC Anions - 300.0 (Fluoride, Nitrogen in Nitrate)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 – Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1P0M7 W07GR0313 3	WATER	11/29/7	1250	\	\	\	\	\	\

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	11/29/7 1410	TA Frazier [signature]	11/29/07 1410

SPECIAL INSTRUCTIONS
(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1-FB	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HCl ~~or H2SO4~~ to pH <2/Cool 4C 11-5-07
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1P0L8 3134	WATER	11/29/7	1245

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	11/29/7 1410	TA Pnazim [illegible]	11/29/07 1410
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

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 1A	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	24 hours ~~0 Days~~ / ~~0~~ 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
~~Field Analysis Activities~~ WSCF	N/A		N/A		

ajl 11-5-07

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
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	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)	**PRESERVATION**	HCl to pH <2/Cool 4C
		TYPE OF CONTAINER	aGs*
		NO. OF CONTAINER(S)	3
		VOLUME	40mL
	SPECIAL HANDLING AND/OR STORAGE	**SAMPLE ANALYSIS**	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P117 313S	WATER	11/29/7	1250	\

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	11/29/7 1410	TA FIZAZIRI [signature]	11/29/07 1410
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)~~VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride, Chloroform)~~

8260_VOA_GCMS ajl 11-5-07

ICED

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF90678

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on June 29, 2009. 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

ICP-MS Metals – The hold time requirements (28 days [Hg] and 6 months) 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):

- Uranium – Sample concentration is more than 4X the spike amount. Matrix Spike / Matrix Spike Duplicate recovery information not valid.

All other QC controls are within the established limits.

Organic Comments

Attachment 2
Narrative
WSCF90678

VOA – The hold time requirement (14 days) for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – A Duplicate, Matrix Spike (Matrix Spikes apply only to Tritium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gamma Energy Analysis – Duplicate Relative Percent Difference(s) (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity. No flags issued.

All other 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** — F09-009-115 — PAGE 1 OF 1

COLLECTOR: J Rolw	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 7N	DATA TURNAROUND: 45 Days / 45 Days		
SAMPLING LOCATION: C7018; EW2-019	PROJECT DESIGNATION: 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO.: F09-009	AIR QUALITY
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-585-3 pg 2	ACTUAL SAMPLE DEPTH: 310'	COA: 300194ES10
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=Vegitation, 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: RADIOACTIVE TIE TO: B1YH73

90678

PRESERVATION	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	G/P	G
NO. OF CONTAINER(S)	4	1	1	1
VOLUME	40ml	500ml	500ml	250ml
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - 906.0 (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1YMF3 0001	WATER	6/29/09	08:51	✓	✓	✓	✓					

ICED

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	6/29/09 0950	[illegible]	6/29/09 0950

SPECIAL INSTRUCTIONS

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Chromium} ICP/MS - 200.8 (Add-on) {Uranium}
(2)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

FILTERED PER FWS 6/29/09
DWB

Attachment 2
Narrative
WSCF90895

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on August 17, 2009. This 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 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):

All QC controls are within the established limits.

Organic Comments

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

Attachment 2
Narrative
WSCF90895

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC Analyzed On Sample B21CK5 – Gamma Energy Analysis (GEA) – Duplicate Relative Percent Difference (RPD) did not meet established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity.

All other 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			F09-043-036	PAGE 1 OF 1
COLLECTOR: White / Turner	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 7N	DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: C7024 (299-W14-74); EW4-003	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-585-9	ACTUAL SAMPLE DEPTH: 336'	COA: 302022ES10	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)

90895

SPECIAL HANDLING AND/OR STORAGE: RADIOACTIVE TIE TO: B21CJ8

PRESERVATION	HNO3 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	G/P	G
NO. OF CONTAINER(S)	3	1	1	1
VOLUME	40mL	500mL	500mL	250mL
SAMPLE ANALYSIS	VOA - 8260B (TCL)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B21CK6	WATER	8-17-09	1026	✓	✓	✓	✓

ICED

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
MA White MA White	8-17-09 1105	Victor Sims	8/17/09 1105
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Chromium} ICP/MS - 200.8 (Add-on) {Uranium}
(2)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

ORIGINAL

Attachment 2
Narrative
WSCF90900

Introduction

Two (2) S&GRP samples were received at the WSCF Laboratory on August 18, 2009. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

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

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

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

All QC controls are within the established limits.

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

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF90900

Organic Comments

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

- The additional chemicals are a part of the QC and spike controls and cannot be removed from the report menu.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

All 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			F09-043-061	PAGE 1 OF 1
COLLECTOR: Mokler / Brotheson	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND: 24 Hours / 15 Days
SAMPLING LOCATION: C7027 (299-W12-2); EWS-002	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-585-8	ACTUAL SAMPLE DEPTH: 385.5'	COA: 302022ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization 90900	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	HNO3 to pH <2(UI:TREX)	HCl to pH <2/Cool~4C					
TYPE OF CONTAINER	aG	P	Nalgene	aGs*					
NO. OF CONTAINER(S)	1	1	1	3					
VOLUME	500mL	500mL	500mL	40mL					
SAMPLE ANALYSIS	Chromium hex - 7196;	IC Anions - 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B21F31 001	WATER	8/18/09	08:13	✓	✓	✓	✓						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Brotheson	DATE/TIME: 8/18/09 0925	RECEIVED BY/STORED IN: TA Frazier	DATE/TIME: 8/18/09 0925
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride, Chloroform, Trichloroethene)

F. Clifford per FWS B. Orth

ORIGINAL

ICED

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F09-043-062	PAGE 1 OF 1
COLLECTOR: Mokler / Brotherton	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND
SAMPLING LOCATION: C7027 (299-W12-2); EW5-002D	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	24 Hours / 15 Days
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-585-8	ACTUAL SAMPLE DEPTH: 325.5	COA: 302022ES10	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	HNO3 to pH <2(ULTREX)	HCl to pH <2/Cool~4C						
TYPE OF CONTAINER	aG	P	Nalgene	aGs*						
NO. OF CONTAINER(S)	1	1	1	3						
VOLUME	500mL	500mL	500mL	40mL						
SAMPLE ANALYSIS	Chromium Hex - 7196	IC Anions 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS						

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B21F32 002	WATER	8/18/09	08:13	✓	✓	✓	✓						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Brotherton	DATE/TIME: 8/18/09 0725	RECEIVED BY/STORED IN: T A Frazier	DATE/TIME: 8/18/09 0725
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene}

FILTERED PER PWS BOTH

ORIGINAL

ICED

Wednesday, August 19, 2009 1:06:59 AM
Page 3 of 3

ChemWare

Attachment 2
Narrative
WSCF91148

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on September 25, 2009. 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

All QC controls are within the established limits.

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

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF91148

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

All QC controls are within the established limits.

Organic Comments

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

All 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			F09-043-154	PAGE 1 OF 1
COLLECTOR: BAILEY	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND: 24 Hours / 15 Days
SAMPLING LOCATION: C7029 (299-W12-4); EW19-005	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-5858	ACTUAL SAMPLE DEPTH: 357	COA: 302022ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization 91148	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	HNO3 to pH <2(Lt TREX)	HCl to pH <2/Cool~4C
TYPE OF CONTAINER	aG	P	Nalgene	aGa*
NO. OF CONTAINER(S)	1	1	1	3
VOLUME	500mL	500mL	500mL	40mL
SAMPLE ANALYSIS	Chromium Hex 7196;	IC Anions 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B21FV4 001	WATER	9-25-09	0750	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JK BAILEY / [signature]	9-25-09 0840	T A Frazier [signature]	9-25-09 0840
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene}

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

A-6003-618(01/06)

Friday, September 25, 2009 1:21:00 PM
Page 2 of 2

ChemWare

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

ALIDATION LEVEL:	A	B	C	D	E
PROJECT: CPP 200 Area, 200 Area SGRP, 200 Area			DATA PACKAGE: VSR10-014		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 4-14-2010	
			SDG: See below*		
ANALYSES PERFORMED					
SW-846/ICP X	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide	EPA 200.8 ICP/MS X	

SAMPLES/MATRIX Water samples

SDG WSCF100103: B23C91
SDG WSCF20042209: B1BJC2
SDG WSCF20050155: B1BJH6
SDG WSCF20061212: B1JX48
SDG WSCF20071433: B1L965
SDG WSCF20072125: B1P0M7
SDG WSCF90895: B21CK6
SDG WSCF91148: B21FV4
SDG WSCF100275: B23CX6
SDG WSCF20042338: B1BJD9
SDG WSCF20051157: B1D7K5, B1D7Y4
SDG WSCF20071194: B1L952
SDG WSCF20071455: B1P0X1
SDG WSCF90678: B1YMF3
SDG WSCF90900: B21F31, B21F32

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:

*WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678, WSCF90895, WSCF90900 & WSCF91148

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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:

WSCF20042209: ICP-AES MB detect (ug/L) - Se (42.1)
WSCF20042338: ICP-AES MB detects (ug/L) - Ca (34.7), Fe (34.6), Mg (39.0)
WSCF20050155: ICP-AES MB detects (ug/L) - Ag (17.1), Ca (26.5), Li (1.9)
WSCF20051157: ICP-AES MB detects (ug/L) - Al (30.7), Ca (29.2), Mg (21.4); TB B1D7Y4 U detect (2.32)
WSCF20071194: MB detects (ug/L) - Fe (16.8), Cr (0.58)
WSCF20071433: MB detect (ug/L) - Fe (16.5)

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:

WSCF20042209: ICP-AES Ag MS %R = 31%, MSD %R = 26%
WSCF20051157: ICP-AES Al MS %R = 74%
WSCF90900: MS/MSD not performed for Tc-99 via ICP-MS.
WSCF91148: MS/MSD not performed for Tc-99 via ICP-MS.

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

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:

WSCF100103: Mn MS/MSD RPD = 21%

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:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? ..... Yes No N/A

Duplicate injection %RSD values acceptable? ..... Yes No N/A

Analytical spikes performed as required? ..... Yes No N/A

Analytical spike recoveries acceptable? ..... Yes No N/A

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

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

MSA performed as required? ..... Yes No N/A

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

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

Comments:

8. HOLDING TIMES (all levels)

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

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

Comments:

WSCF20051157: Sample B1D7Y4 - ICP-MS U analysis took place 203 days after sample collection

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? ..... Yes No N/A

Rresults 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 # WSCF100103

QC Batch 84788
Associated Samples 100103001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #22544**							
Aluminum	7429-90-5		<5.0	ug/L					U	01/22/10
Manganese	7439-96-5		<0.10	ug/L					U	01/22/10
Nickel	7440-02-0		<0.20	ug/L					U	01/22/10
Barium	7440-39-3		<0.20	ug/L					U	01/22/10
Cadmium	7440-43-9		<0.10	ug/L					U	01/22/10
Chromium	7440-47-3		<0.50	ug/L					U	01/22/10
Cobalt	7440-48-4		<0.050	ug/L					U	01/22/10
Copper	7440-50-8		<0.10	ug/L					U	01/22/10
Vanadium	7440-62-2		<0.20	ug/L					U	01/22/10
Lead	7439-92-1		<0.10	ug/L					U	01/22/10
Strontium	7440-24-6		<0.10	ug/L					U	01/22/10
Uranium	7440-61-1		<0.050	ug/L					U	01/22/10
Arsenic	7440-38-2		<0.40	ug/L					U	01/22/10
LCS			**QC Sample #22545**							
Aluminum	7429-90-5		401	ug/L	100.2	85 - 115			D	01/22/10
Manganese	7439-96-5		40.7	ug/L	101.8	85 - 115			D	01/22/10
Nickel	7440-02-0		38.3	ug/L	95.8	85 - 115			D	01/22/10
Barium	7440-39-3		39.3	ug/L	98.2	85 - 115			D	01/22/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100103

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Cadmium	7440-43-9		38.7	ug/L	96.7	85 - 115			D	01/22/10
Chromium	7440-47-3		41.5	ug/L	103.8	85 - 115			D	01/22/10
Cobalt	7440-48-4		40.4	ug/L	101	85 - 115			D	01/22/10
Copper	7440-50-8		37.6	ug/L	94.1	85 - 115			D	01/22/10
Vanadium	7440-62-2		40.4	ug/L	101	85 - 115			D	01/22/10
Lead	7439-92-1		38.8	ug/L	97.1	85 - 115			D	01/22/10
Strontium	7440-24-6		40.5	ug/L	101.4	85 - 115			D	01/22/10
Uranium	7440-61-1		41.2	ug/L	102.9	85 - 115			D	01/22/10
Arsenic	7440-38-2		38.5	ug/L	96.3	85 - 115			D	01/22/10
MS			**QC Sample #22546**							
			Original 100082001							
Aluminum	7429-90-5		382	ug/L	95.4	70 - 130			D	01/22/10
Manganese	7439-96-5		36.0	ug/L	90	70 - 130			D	01/22/10
Nickel	7440-02-0		34.9	ug/L	87.2	70 - 130			D	01/22/10
Barium	7440-39-3		39.9	ug/L	99.6	70 - 130			D	01/22/10
Cadmium	7440-43-9		37.8	ug/L	94.5	70 - 130			D	01/22/10
Chromium	7440-47-3		37.9	ug/L	94.8	70 - 130			D	01/22/10
Cobalt	7440-48-4		37.3	ug/L	93.4	70 - 130			D	01/22/10
Copper	7440-50-8		34.3	ug/L	85.8	70 - 130			D	01/22/10
Vanadium	7440-62-2		38.7	ug/L	96.8	70 - 130			D	01/22/10
Lead	7439-92-1		38.5	ug/L	96.2	70 - 130			D	01/22/10
Strontium	7440-24-6		40.2	ug/L	100.4	70 - 130			D	01/22/10
Uranium	7440-61-1		41.3	ug/L	103.2	70 - 130			D	01/22/10
Arsenic	7440-38-2		37.7	ug/L	94.2	70 - 130			D	01/22/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100103

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MSD			**QC Sample #22547**								
			Original	**100082001**					**Paired**	**22546**	
Aluminum	7429-90-5		382	ug/L	95.4	70 - 130	0.00	20		D	01/22/10
Manganese	7439-96-5		44.4	ug/L	111	70 - 130	20.90	20	*	D1X	01/22/10
Nickel	7440-02-0		35.1	ug/L	87.7	70 - 130	0.60	20		D	01/22/10
Barium	7440-39-3		41.3	ug/L	103.3	70 - 130	3.60	20		D	01/22/10
Cadmium	7440-43-9		37.6	ug/L	94.1	70 - 130	0.40	20		D	01/22/10
Chromium	7440-47-3		38.5	ug/L	96.3	70 - 130	1.60	20		D	01/22/10
Cobalt	7440-48-4		37.0	ug/L	92.5	70 - 130	1.00	20		D	01/22/10
Copper	7440-50-8		34.5	ug/L	86.2	70 - 130	0.50	20		D	01/22/10
Vanadium	7440-62-2		39.5	ug/L	98.6	70 - 130	1.80	20		D	01/22/10
Lead	7439-92-1		38.1	ug/L	95.2	70 - 130	1.00	20		D	01/22/10
Strontium	7440-24-6		40.2	ug/L	100.4	70 - 130	0.00	20		D	01/22/10
Uranium	7440-61-1		41.4	ug/L	103.4	70 - 130	0.20	20		D	01/22/10
Arsenic	7440-38-2		38.8	ug/L	97.1	70 - 130	3.00	20		D	01/22/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100275

QC Batch 89175
Associated Samples 100275001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #23458**							
Aluminum	7429-90-5		<5.0	ug/L					U	02/15/10
Manganese	7439-96-5		<0.10	ug/L					U	02/15/10
Nickel	7440-02-0		<0.20	ug/L					U	02/15/10
Barium	7440-39-3		<0.20	ug/L					U	02/15/10
Cadmium	7440-43-9		<0.10	ug/L					U	02/15/10
Chromium	7440-47-3		<0.50	ug/L					U	02/15/10
Cobalt	7440-48-4		<0.050	ug/L					U	02/15/10
Copper	7440-50-8		<0.10	ug/L					U	02/15/10
Vanadium	7440-62-2		<0.20	ug/L					U	02/15/10
Lead	7439-92-1		<0.10	ug/L					U	02/15/10
Strontium	7440-24-6		<0.10	ug/L					U	02/15/10
Uranium	7440-61-1		<0.050	ug/L					U	02/15/10
Arsenic	7440-38-2		<0.40	ug/L					U	02/15/10
LCS			**QC Sample #23459**							
Aluminum	7429-90-5		386	ug/L	96.6	85 - 115			D	02/15/10
Manganese	7439-96-5		40.3	ug/L	100.6	85 - 115			D	02/15/10
Nickel	7440-02-0		39.5	ug/L	98.8	85 - 115			D	02/15/10
Barium	7440-39-3		39.3	ug/L	98.3	85 - 115			D	02/15/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100275

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Cadmium	7440-43-9		39.1	ug/L	97.7	85 - 115			D	02/15/10
Chromium	7440-47-3		39.1	ug/L	97.8	85 - 115			D	02/15/10
Cobalt	7440-48-4		38.1	ug/L	95.2	85 - 115			D	02/15/10
Copper	7440-50-8		38.4	ug/L	96	85 - 115			D	02/15/10
Vanadium	7440-62-2		40.4	ug/L	101	85 - 115			D	02/15/10
Lead	7439-92-1		38.6	ug/L	96.6	85 - 115			D	02/15/10
Strontium	7440-24-6		38.6	ug/L	96.5	85 - 115			D	02/15/10
Uranium	7440-61-1		38.9	ug/L	97.3	85 - 115			D	02/15/10
Arsenic	7440-38-2		39.6	ug/L	99	85 - 115			D	02/15/10
MS			**QC Sample #23460**							
			Original 100271001							
Aluminum	7429-90-5		364	ug/L	91	70 - 130			D	02/15/10
Manganese	7439-96-5		37.8	ug/L	94.5	70 - 130			D	02/15/10
Nickel	7440-02-0		35.5	ug/L	88.7	70 - 130			D	02/15/10
Barium	7440-39-3		37.8	ug/L	94.6	70 - 130			D	02/15/10
Cadmium	7440-43-9		37.8	ug/L	94.6	70 - 130			D	02/15/10
Chromium	7440-47-3		35.5	ug/L	88.7	70 - 130			D	02/15/10
Cobalt	7440-48-4		34.2	ug/L	85.5	70 - 130			D	02/15/10
Copper	7440-50-8		32.7	ug/L	81.7	70 - 130			D	02/15/10
Vanadium	7440-62-2		35.0	ug/L	87.5	70 - 130			D	02/15/10
Lead	7439-92-1		38.4	ug/L	95.9	70 - 130			D	02/15/10
Strontium	7440-24-6		36.8	ug/L	92	70 - 130			D1X	02/15/10
Uranium	7440-61-1		40.0	ug/L	99.9	70 - 130			D	02/15/10
Arsenic	7440-38-2		34.8	ug/L	87.1	70 - 130			D	02/15/10

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF100275

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
MSD			**QC Sample #23461**								
			Original	**100271001**					**Paired**	**23460**	
Aluminum	7429-90-5		372	ug/L	93	70 - 130	2.20	20		D	02/15/10
Manganese	7439-96-5		40.2	ug/L	100.5	70 - 130	6.20	20		D	02/15/10
Nickel	7440-02-0		36.1	ug/L	90.2	70 - 130	1.70	20		D	02/15/10
Barium	7440-39-3		40.3	ug/L	100.6	70 - 130	6.10	20		D	02/15/10
Cadmium	7440-43-9		37.2	ug/L	93	70 - 130	1.70	20		D	02/15/10
Chromium	7440-47-3		36.4	ug/L	91.1	70 - 130	2.70	20		D	02/15/10
Cobalt	7440-48-4		34.6	ug/L	86.5	70 - 130	1.20	20		D	02/15/10
Copper	7440-50-8		34.3	ug/L	85.8	70 - 130	4.90	20		D	02/15/10
Vanadium	7440-62-2		39.4	ug/L	98.6	70 - 130	11.90	20		D	02/15/10
Lead	7439-92-1		37.8	ug/L	94.6	70 - 130	1.40	20		D	02/15/10
Strontium	7440-24-6		54.0	ug/L	135	70 - 130	37.90	20	*	D1X	02/15/10
Uranium	7440-61-1		39.4	ug/L	98.5	70 - 130	1.40	20		D	02/15/10
Arsenic	7440-38-2		38.4	ug/L	96	70 - 130	9.70	20		D	02/15/10

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 11/10/04
Receive Date:11/10/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002185									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Silver	7440-22-4	616.7	61.670	% Recov	12/08/04	75.000	125.000	*
MS	Aluminum	7429-90-5	795.2	79.520	% Recov	12/08/04	75.000	125.000	
MS	Calcium	7440-70-2	170	n/a	% Recov	12/08/04	75.000	125.000	
MS	Iron	7439-89-6	1028	102.800	% Recov	12/08/04	75.000	125.000	
MS	Potassium	7440-09-7	10345	103.450	% Recov	12/08/04	75.000	125.000	
MS	Lithium	7439-93-2	1078.2	107.820	% Recov	12/08/04	70.000	130.000	
MS	Magnesium	7439-95-4	590	n/a	% Recov	12/08/04	75.000	125.000	
MS	Sodium	7440-23-5	830	n/a	% Recov	12/08/04	75.000	125.000	
MS	Nickel	7440-02-0	981.3	98.130	% Recov	12/08/04	75.000	125.000	
MS	Phosphorus	7723-14-0	1094	109.400	% Recov	12/08/04	70.000	130.000	
MS	Selenium	7782-49-2	1039.1	103.910	% Recov	12/08/04	75.000	125.000	
MSD	Silver	7440-22-4	675.2	67.520	% Recov	12/08/04	75.000	125.000	*
MSD	Aluminum	7429-90-5	777.3	77.730	% Recov	12/08/04	75.000	125.000	
MSD	Calcium	7440-70-2	1220	n/a	% Recov	12/08/04	75.000	125.000	
MSD	Iron	7439-89-6	1020	102.000	% Recov	12/08/04	75.000	125.000	
MSD	Potassium	7440-09-7	10085	100.850	% Recov	12/08/04	75.000	125.000	
MSD	Lithium	7439-93-2	1058.2	105.820	% Recov	12/08/04	75.000	125.000	
MSD	Magnesium	7439-95-4	670	n/a	% Recov	12/08/04	75.000	125.000	
MSD	Sodium	7440-23-5	810	n/a	% Recov	12/08/04	75.000	125.000	
MSD	Nickel	7440-02-0	986.3	98.630	% Recov	12/08/04	75.000	125.000	
MSD	Phosphorus	7723-14-0	1062	106.200	% Recov	12/08/04	75.000	125.000	
MSD	Selenium	7782-49-2	1032.1	103.210	% Recov	12/08/04	75.000	125.000	
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Silver	7440-22-4	312.3	31.230	% Recov	12/08/04	75.000	125.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Aluminum	7429-90-5	799	79.900	% Recov	12/08/04	75.000	125.000	
MS	Boron	7440-42-8	1027	102.700	% Recov	12/08/04	70.000	130.000	
MS	Calcium	7440-70-2	-14400	n/a	% Recov	12/08/04	75.000	125.000	
MS	Iron	7439-89-6	1011	101.100	% Recov	12/08/04	75.000	125.000	
MS	Potassium	7440-09-7	9900	99.000	% Recov	12/08/04	75.000	125.000	
MS	Lithium	7439-93-2	1034.4	103.440	% Recov	12/08/04	70.000	130.000	
MS	Magnesium	7439-95-4	-1160	n/a	% Recov	12/08/04	75.000	125.000	
MS	Sodium	7440-23-5	-13630	n/a	% Recov	12/08/04	75.000	125.000	
MS	Nickel	7440-02-0	962.5	96.250	% Recov	12/08/04	75.000	125.000	
MS	Phosphorus	7723-14-0	1061.8	106.180	% Recov	12/08/04	70.000	130.000	
MS	Selenium	7782-49-2	1033.6	103.360	% Recov	12/08/04	75.000	125.000	
MS	Silicon	7440-21-3	4780	95.600	% Recov	12/08/04	70.000	130.000	
MSD	Silver	7440-22-4	262.4	26.240	% Recov	12/08/04	75.000	125.000	
MSD	Aluminum	7429-90-5	769	76.900	% Recov	12/08/04	75.000	125.000	
MSD	Boron	7440-42-8	1001	100.100	% Recov	12/08/04	75.000	125.000	
MSD	Calcium	7440-70-2	-15800	n/a	% Recov	12/08/04	75.000	125.000	
MSD	Iron	7439-89-6	1003	100.300	% Recov	12/08/04	75.000	125.000	
MSD	Potassium	7440-09-7	9550	95.500	% Recov	12/08/04	75.000	125.000	
MSD	Lithium	7439-93-2	1002.4	100.240	% Recov	12/08/04	75.000	125.000	
MSD	Magnesium	7439-95-4	-1960	n/a	% Recov	12/08/04	75.000	125.000	
MSD	Sodium	7440-23-5	-14100	n/a	% Recov	12/08/04	75.000	125.000	
MSD	Nickel	7440-02-0	940.5	94.050	% Recov	12/08/04	75.000	125.000	
MSD	Phosphorus	7723-14-0	1015.8	101.580	% Recov	12/08/04	75.000	125.000	
MSD	Selenium	7782-49-2	992.6	99.260	% Recov	12/08/04	75.000	125.000	
MSD	Silicon	7440-21-3	4500	90.000	% Recov	12/08/04	75.000	125.000	
SPK-RPD	Silver	7440-22-4	26.240	17.366	RPD	12/08/04	0.000	20.000	
SPK-RPD	Aluminum	7429-90-5	76.900	3.827	RPD	12/08/04	0.000	20.000	
SPK-RPD	Boron	7440-42-8	100.100	2.564	RPD	12/08/04	0.000	20.000	
SPK-RPD	Calcium	7440-70-2		n/a	RPD	12/08/04	0.000	20.000	
SPK-RPD	Iron	7439-89-6	100.300	0.794	RPD	12/08/04	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Potassium	7440-09-7	95.500	3.599	RPD	12/08/04	0.000	20.000	
SPK-RPD	Lithium	7439-93-2	100.240	3.142	RPD	12/08/04	0.000	20.000	
SPK-RPD	Magnesium	7439-95-4		n/a	RPD	12/08/04	0.000	20.000	
SPK-RPD	Sodium	7440-23-5		n/a	RPD	12/08/04	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	94.050	2.312	RPD	12/08/04	0.000	20.000	
SPK-RPD	Phosphorus	7723-14-0	101.580	4.428	RPD	12/08/04	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	99.260	4.047	RPD	12/08/04	0.000	20.000	
SPK-RPD	Silicon	7440-21-3	90.000	6.034	RPD	12/08/04	0.000	20.000	
BATCH QC									
BLANK	Silver	7440-22-4	<1.8	n/a	ug/L	12/08/04	-4.000	4.000	U
BLANK	Aluminum	7429-90-5	<27	n/a	ug/L	12/08/04	-46.000	46.000	U
BLANK	Boron	7440-42-8	<26	n/a	ug/L	12/08/04	0.000	300.000	U
BLANK	Calcium	7440-70-2	<16	n/a	ug/L	12/08/04	-8.000	8.000	U
BLANK	Iron	7439-89-6	<21	n/a	ug/L	12/08/04	-34.000	34.000	U
BLANK	Potassium	7440-09-7	<110	n/a	ug/L	12/08/04	-730.000	730.000	U
BLANK	Lithium	7439-93-2	<1	n/a	ug/L	12/08/04	-4.000	4.000	U
BLANK	Magnesium	7439-95-4	<19	n/a	ug/L	12/08/04	-91.000	91.000	U
BLANK	Sodium	7440-23-5	<200	n/a	ug/L	12/08/04	-79.000	79.000	U
BLANK	Nickel	7440-02-0	<1.4	n/a	ug/L	12/08/04	-15.000	15.000	U
BLANK	Phosphorus	7723-14-0	<48	n/a	ug/L	12/08/04	0.000	1000.000	U
BLANK	Selenium	7782-49-2	42.1	42.100	ug/L	12/08/04	-130.000	130.000	
BLANK	Silicon	7440-21-3	<17	n/a	ug/L	12/08/04	-22.000	22.000	U
LCS	Silver	7440-22-4	1004	100.400	% Recov	12/08/04	80.000	120.000	
LCS	Aluminum	7429-90-5	807.3	80.730	% Recov	12/08/04	80.000	120.000	
LCS	Boron	7440-42-8	1021	102.100	% Recov	12/08/04	80.000	120.000	
LCS	Calcium	7440-70-2	1019	101.900	% Recov	12/08/04	80.000	120.000	
LCS	Iron	7439-89-6	1036	103.600	% Recov	12/08/04	80.000	120.000	
LCS	Potassium	7440-09-7	10490	104.900	% Recov	12/08/04	80.000	120.000	
LCS	Lithium	7439-93-2	1081	108.100	% Recov	12/08/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Magnesium	7439-95-4	1012	101.200	% Recov	12/08/04	80.000	120.000	
LCS	Sodium	7440-23-5	1103	110.300	% Recov	12/08/04	80.000	120.000	
LCS	Nickel	7440-02-0	999.8	99.980	% Recov	12/08/04	80.000	120.000	
LCS	Phosphorus	7723-14-0	1097	109.700	% Recov	12/08/04	80.000	120.000	
LCS	Selenium	7782-49-2	1090	109.000	% Recov	12/08/04	80.000	120.000	
LCS	Silicon	7440-21-3	4886	97.720	% Recov	12/08/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 11/10/04
Receive Date:11/10/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002185									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Mercury	7439-97-6	1.256	62.800	% Recov	12/13/04	70.000	130.000	*
MS	Uranium	7440-61-1	40.8293	102.073	% Recov	12/13/04	70.000	130.000	
MSD	Mercury	7439-97-6	1.794	89.700	% Recov	12/13/04	70.000	130.000	
MSD	Uranium	7440-61-1	41.8693	104.673	% Recov	12/13/04	70.000	130.000	
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Silver	7440-22-4	34.63	86.575	% Recov	12/13/04	70.000	130.000	
MS	Arsenic	7440-38-2	32.7716	81.929	% Recov	12/13/04	70.000	130.000	
MS	Barium	7440-39-3	NA	n/a	% Recov	12/13/04	70.000	130.000	
MS	Beryllium	7440-41-7	35.17	87.925	% Recov	12/13/04	70.000	130.000	
MS	Cadmium	7440-43-9	32.75	81.875	% Recov	12/13/04	70.000	130.000	
MS	Chromium	7440-47-3	34.54	86.350	% Recov	12/13/04	70.000	130.000	
MS	Copper	7440-50-8	29.337	73.343	% Recov	12/13/04	70.000	130.000	
MS	Mercury	7439-97-6	1.893	94.650	% Recov	12/13/04	70.000	130.000	
MS	Manganese	7439-96-5	NA	n/a	% Recov	12/13/04	70.000	130.000	
MS	Molybdenum	7439-98-7	36.19	90.475	% Recov	12/13/04	70.000	130.000	
MS	Nickel	7440-02-0	30.914	77.285	% Recov	12/13/04	70.000	130.000	
MS	Lead	7439-92-1	40.66	101.650	% Recov	12/13/04	70.000	130.000	
MS	Antimony	7440-36-0	40.39	100.975	% Recov	12/13/04	70.000	130.000	
MS	Selenium	7782-49-2	28.789	71.973	% Recov	12/13/04	70.000	130.000	
MS	Tin	7440-31-5	37.89	94.725	% Recov	12/13/04	70.000	130.000	
MS	Strontium	7440-24-6	NA	n/a	% Recov	12/13/04	70.000	130.000	
MS	Thallium	7440-28-0	41.8321	104.580	% Recov	12/13/04	70.000	130.000	
MS	Uranium	7440-61-1	46.483	116.207	% Recov	12/13/04	70.000	130.000	
MS	Vanadium	7440-62-2	36.697	91.743	% Recov	12/13/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Zinc	7440-66-6	NA	n/a	% Recov	12/13/04	70.000	130.000	
MSD	Silver	7440-22-4	34.68	86.700	% Recov	12/13/04	70.000	130.000	
MSD	Arsenic	7440-38-2	33.3116	83.279	% Recov	12/13/04	70.000	130.000	
MSD	Barium	7440-39-3	NA	n/a	% Recov	12/13/04	70.000	130.000	
MSD	Beryllium	7440-41-7	35.4	88.500	% Recov	12/13/04	70.000	130.000	
MSD	Cadmium	7440-43-9	32.68	81.700	% Recov	12/13/04	70.000	130.000	
MSD	Chromium	7440-47-3	35.35	88.375	% Recov	12/13/04	70.000	130.000	
MSD	Copper	7440-50-8	29.657	74.142	% Recov	12/13/04	70.000	130.000	
MSD	Mercury	7439-97-6	1.919	95.950	% Recov	12/13/04	70.000	130.000	
MSD	Manganese	7439-96-5	NA	n/a	% Recov	12/13/04	70.000	130.000	
MSD	Molybdenum	7439-98-7	36.69	91.725	% Recov	12/13/04	70.000	130.000	
MSD	Nickel	7440-02-0	30.944	77.360	% Recov	12/13/04	70.000	130.000	
MSD	Lead	7439-92-1	40.22	100.550	% Recov	12/13/04	70.000	130.000	
MSD	Antimony	7440-36-0	40.49	101.225	% Recov	12/13/04	70.000	130.000	
MSD	Selenium	7782-49-2	29.019	72.547	% Recov	12/13/04	70.000	130.000	
MSD	Tin	7440-31-5	37.47	93.675	% Recov	12/13/04	70.000	130.000	
MSD	Strontium	7440-24-6	NA	n/a	% Recov	12/13/04	70.000	130.000	
MSD	Thallium	7440-28-0	41.3221	103.305	% Recov	12/13/04	70.000	130.000	
MSD	Uranium	7440-61-1	45.453	113.633	% Recov	12/13/04	70.000	130.000	
MSD	Vanadium	7440-62-2	37.267	93.168	% Recov	12/13/04	70.000	130.000	
MSD	Zinc	7440-66-6	NA	n/a	% Recov	12/13/04	70.000	130.000	

Lab ID: W040002520
BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	36.17	90.425	% Recov	12/13/04	70.000	130.000	
MS	Arsenic	7440-38-2	35.4	88.500	% Recov	12/13/04	70.000	130.000	
MS	Barium	7440-39-3	40.6	101.500	% Recov	12/13/04	70.000	130.000	
MS	Beryllium	7440-41-7	36.97	92.425	% Recov	12/13/04	70.000	130.000	
MS	Cadmium	7440-43-9	34.46	86.150	% Recov	12/13/04	70.000	130.000	
MS	Chromium	7440-47-3	36.58	91.450	% Recov	12/13/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 11/30/04
Receive Date:11/30/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Copper	7440-50-8	32.8	82.000	% Recov	12/13/04	70.000	130.000	
MS	Mercury	7439-97-6	1.861	93.050	% Recov	12/13/04	70.000	130.000	
MS	Manganese	7439-96-5	34.14	85.350	% Recov	12/13/04	70.000	130.000	
MS	Molybdenum	7439-98-7	37.66	94.150	% Recov	12/13/04	70.000	130.000	
MS	Nickel	7440-02-0	32.262	80.655	% Recov	12/13/04	70.000	130.000	
MS	Lead	7439-92-1	39.97	99.925	% Recov	12/13/04	70.000	130.000	
MS	Antimony	7440-36-0	41.71	104.275	% Recov	12/13/04	70.000	130.000	
MS	Selenium	7782-49-2	32.55	81.375	% Recov	12/13/04	70.000	130.000	
MS	Tin	7440-31-5	38.33	95.825	% Recov	12/13/04	70.000	130.000	
MS	Strontium	7440-24-6	NA	n/a	% Recov	12/13/04	70.000	130.000	
MS	Thallium	7440-28-0	41.2978	103.245	% Recov	12/13/04	70.000	130.000	
MS	Uranium	7440-61-1	43.6	109.000	% Recov	12/13/04	70.000	130.000	
MS	Vanadium	7440-62-2	38.4	96.000	% Recov	12/13/04	70.000	130.000	
MS	Zinc	7440-66-6	28.36	70.900	% Recov	12/13/04	70.000	130.000	
MSD	Silver	7440-22-4	36.8	92.000	% Recov	12/13/04	70.000	130.000	
MSD	Arsenic	7440-38-2	36.16	90.400	% Recov	12/13/04	70.000	130.000	
MSD	Barium	7440-39-3	42.4	106.000	% Recov	12/13/04	70.000	130.000	
MSD	Beryllium	7440-41-7	37.59	93.975	% Recov	12/13/04	70.000	130.000	
MSD	Cadmium	7440-43-9	35.13	87.825	% Recov	12/13/04	70.000	130.000	
MSD	Chromium	7440-47-3	36	90.000	% Recov	12/13/04	70.000	130.000	
MSD	Copper	7440-50-8	33.4	83.500	% Recov	12/13/04	70.000	130.000	
MSD	Mercury	7439-97-6	1.867	93.350	% Recov	12/13/04	70.000	130.000	
MSD	Manganese	7439-96-5	33.74	84.350	% Recov	12/13/04	70.000	130.000	
MSD	Molybdenum	7439-98-7	37.49	93.725	% Recov	12/13/04	70.000	130.000	
MSD	Nickel	7440-02-0	33.482	83.705	% Recov	12/13/04	70.000	130.000	
MSD	Lead	7439-92-1	40.14	100.350	% Recov	12/13/04	70.000	130.000	
MSD	Antimony	7440-36-0	41.85	104.625	% Recov	12/13/04	70.000	130.000	
MSD	Selenium	7782-49-2	32.37	80.925	% Recov	12/13/04	70.000	130.000	
MSD	Tin	7440-31-5	38.77	96.925	% Recov	12/13/04	70.000	130.000	
MSD	Strontium	7440-24-6	NA	n/a	% Recov	12/13/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 11/30/04
Receive Date:11/30/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Thallium	7440-28-0	41.4278	103.570	% Recov	12/13/04	70.000	130.000	
MSD	Uranium	7440-61-1	45.2	113.000	% Recov	12/13/04	70.000	130.000	
MSD	Vanadium	7440-62-2	37.35	93.375	% Recov	12/13/04	70.000	130.000	
MSD	Zinc	7440-66-6	27.76	69.400	% Recov	12/13/04	70.000	130.000	*
SPK-RPD	Tin	7440-31-5	96.925	1.141	RPD	12/13/04	0.000	20.000	
SPK-RPD	Strontium	7440-24-6	101.750	13.648	RPD	12/13/04	0.000	20.000	

Lab ID: W040002537
BATCH QC ASSOCIATED WITH SAMPLE

MS	Arsenic	7440-38-2	37.38	93.450	% Recov	12/13/04	70.000	130.000	
MS	Cadmium	7440-43-9	36.78	91.950	% Recov	12/13/04	70.000	130.000	
MS	Chromium	7440-47-3	38.22	95.550	% Recov	12/13/04	70.000	130.000	
MS	Copper	7440-50-8	36.018	90.045	% Recov	12/13/04	70.000	130.000	
MS	Mercury	7439-97-6	1.716	85.800	% Recov	12/13/04	70.000	130.000	
MS	Lead	7439-92-1	39.215	98.038	% Recov	12/13/04	70.000	130.000	
MS	Selenium	7782-49-2	33.86	84.650	% Recov	12/13/04	70.000	130.000	
MS	Uranium	7440-61-1	40.16	100.400	% Recov	12/13/04	70.000	130.000	
MSD	Arsenic	7440-38-2	36.69	91.725	% Recov	12/13/04	70.000	130.000	
MSD	Cadmium	7440-43-9	35.31	88.275	% Recov	12/13/04	70.000	130.000	
MSD	Chromium	7440-47-3	37.59	93.975	% Recov	12/13/04	70.000	130.000	
MSD	Copper	7440-50-8	35.618	89.045	% Recov	12/13/04	70.000	130.000	
MSD	Mercury	7439-97-6	1.654	82.700	% Recov	12/13/04	70.000	130.000	
MSD	Lead	7439-92-1	38.035	95.087	% Recov	12/13/04	70.000	130.000	
MSD	Selenium	7782-49-2	33.52	83.800	% Recov	12/13/04	70.000	130.000	
MSD	Uranium	7440-61-1	38.67	96.675	% Recov	12/13/04	70.000	130.000	

Lab ID: W04D000063
BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	37.08	92.700	% Recov	12/13/04	70.000	130.000	
MS	Arsenic	7440-38-2	34.56	86.400	% Recov	12/13/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/01/04
Receive Date:12/01/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Barium	7440-39-3	39.9	99.750	% Recov	12/13/04	70.000	130.000	
MS	Beryllium	7440-41-7	37.7	94.250	% Recov	12/13/04	70.000	130.000	
MS	Cadmium	7440-43-9	34.34	85.850	% Recov	12/13/04	70.000	130.000	
MS	Chromium	7440-47-3	36.17	90.425	% Recov	12/13/04	70.000	130.000	
MS	Copper	7440-50-8	33.108	82.770	% Recov	12/13/04	70.000	130.000	
MS	Mercury	7439-97-6	1.874	93.700	% Recov	12/13/04	70.000	130.000	
MS	Manganese	7439-96-5	35.0275	87.569	% Recov	12/13/04	70.000	130.000	
MS	Molybdenum	7439-98-7	37.533	93.833	% Recov	12/13/04	70.000	130.000	
MS	Nickel	7440-02-0	33.8209	84.552	% Recov	12/13/04	70.000	130.000	
MS	Lead	7439-92-1	39.94	99.850	% Recov	12/13/04	70.000	130.000	
MS	Antimony	7440-36-0	43.15	107.875	% Recov	12/13/04	70.000	130.000	
MS	Selenium	7782-49-2	31.82	79.550	% Recov	12/13/04	70.000	130.000	
MS	Thallium	7440-28-0	39.62	99.050	% Recov	12/13/04	70.000	130.000	
MS	Uranium	7440-61-1	44.3044	110.761	% Recov	12/13/04	70.000	130.000	
MS	Vanadium	7440-62-2	38.6576	96.644	% Recov	12/13/04	70.000	130.000	
MS	Zinc	7440-66-6	29.63	74.075	% Recov	12/13/04	70.000	130.000	
MSD	Silver	7440-22-4	35.72	89.300	% Recov	12/13/04	70.000	130.000	
MSD	Arsenic	7440-38-2	34.7	86.750	% Recov	12/13/04	70.000	130.000	
MSD	Barium	7440-39-3	40.06	100.150	% Recov	12/13/04	70.000	130.000	
MSD	Beryllium	7440-41-7	37.99	94.975	% Recov	12/13/04	70.000	130.000	
MSD	Cadmium	7440-43-9	33.58	83.950	% Recov	12/13/04	70.000	130.000	
MSD	Chromium	7440-47-3	36.24	90.600	% Recov	12/13/04	70.000	130.000	
MSD	Copper	7440-50-8	33.748	84.370	% Recov	12/13/04	70.000	130.000	
MSD	Mercury	7439-97-6	1.853	92.650	% Recov	12/13/04	70.000	130.000	
MSD	Manganese	7439-96-5	35.5575	88.894	% Recov	12/13/04	70.000	130.000	
MSD	Molybdenum	7439-98-7	37.383	93.458	% Recov	12/13/04	70.000	130.000	
MSD	Nickel	7440-02-0	34.0309	85.077	% Recov	12/13/04	70.000	130.000	
MSD	Lead	7439-92-1	39.46	98.650	% Recov	12/13/04	70.000	130.000	
MSD	Antimony	7440-36-0	41.97	104.925	% Recov	12/13/04	70.000	130.000	
MSD	Selenium	7782-49-2	31.6	79.000	% Recov	12/13/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/01/04
Receive Date:12/01/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Thallium	7440-28-0	39.2	98.000	% Recov	12/13/04	70.000	130.000	
MSD	Uranium	7440-61-1	44.0244	110.061	% Recov	12/13/04	70.000	130.000	
MSD	Vanadium	7440-62-2	38.5176	96.294	% Recov	12/13/04	70.000	130.000	
MSD	Zinc	7440-66-6	30.22	75.550	% Recov	12/13/04	70.000	130.000	
SPK-RPD	Silver	7440-22-4	89.300	3.736	RPD	12/13/04	0.000	20.000	
SPK-RPD	Arsenic	7440-38-2	86.750	0.404	RPD	12/13/04	0.000	20.000	
SPK-RPD	Barium	7440-39-3	100.150	0.400	RPD	12/13/04	0.000	20.000	
SPK-RPD	Beryllium	7440-41-7	94.975	0.766	RPD	12/13/04	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	83.950	2.238	RPD	12/13/04	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	90.600	0.193	RPD	12/13/04	0.000	20.000	
SPK-RPD	Copper	7440-50-8	84.370	1.915	RPD	12/13/04	0.000	20.000	
SPK-RPD	Mercury	7439-97-6	92.650	1.127	RPD	12/13/04	0.000	20.000	
SPK-RPD	Manganese	7439-96-5	88.894	1.502	RPD	12/13/04	0.000	20.000	
SPK-RPD	Molybdenum	7439-98-7	93.458	0.400	RPD	12/13/04	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	85.077	0.619	RPD	12/13/04	0.000	20.000	
SPK-RPD	Lead	7439-92-1	98.650	1.209	RPD	12/13/04	0.000	20.000	
SPK-RPD	Antimony	7440-36-0	104.925	2.773	RPD	12/13/04	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	79.000	0.694	RPD	12/13/04	0.000	20.000	
SPK-RPD	Thallium	7440-28-0	98.000	1.066	RPD	12/13/04	0.000	20.000	
SPK-RPD	Uranium	7440-61-1	110.061	0.634	RPD	12/13/04	0.000	20.000	
SPK-RPD	Vanadium	7440-62-2	96.294	0.363	RPD	12/13/04	0.000	20.000	
SPK-RPD	Zinc	7440-66-6	75.550	1.972	RPD	12/13/04	0.000	20.000	

BATCH QC

BLANK	Silver	7440-22-4	<0.1	n/a	ug/L	12/13/04	-0.440	0.440	U
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Barium	7440-39-3	<3.5	n/a	ug/L	12/13/04	-0.440	0.440	U
BLANK	Beryllium	7440-41-7	<0.1	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L	12/13/04	-0.220	0.220	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L	12/13/04	-0.220	0.220	U
BLANK	Chromium	7440-47-3	<3.3	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Chromium	7440-47-3	<3.3	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Copper	7440-50-8	<1.3	n/a	ug/L	12/13/04	-1.100	1.100	U
BLANK	Copper	7440-50-8	<1.3	n/a	ug/L	12/13/04	-1.100	1.100	U
BLANK	Mercury	7439-97-6	<0.1	n/a	ug/L	12/13/04	-0.220	0.220	U
BLANK	Mercury	7439-97-6	<0.1	n/a	ug/L	12/13/04	-0.220	0.220	U
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Molybdenum	7439-98-7	<0.3	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Nickel	7440-02-0	<0.1	n/a	ug/L	12/13/04	-1.100	1.100	U
BLANK	Lead	7439-92-1	<0.2	n/a	ug/L	12/13/04	-2.640	2.640	U
BLANK	Lead	7439-92-1	<0.2	n/a	ug/L	12/13/04	-2.640	2.640	U
BLANK	Antimony	7440-36-0	<1.1	n/a	ug/L	12/13/04	-1.100	1.100	U
BLANK	Selenium	7782-49-2	<0.4	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Selenium	7782-49-2	<0.4	n/a	ug/L	12/13/04	-0.660	0.660	U
BLANK	Tin	7440-31-5	<0.8	n/a	ug/L	12/13/04	0.000	1000.000	U
BLANK	Strontium	7440-24-6	<0.1	n/a	ug/L	12/13/04	0.000	1000.000	U
BLANK	Thallium	7440-28-0	<0.1	n/a	ug/L	12/13/04	-0.220	0.220	U
BLANK	Uranium	7440-61-1	<0.1	n/a	ug/L	12/13/04	-0.220	0.220	U
BLANK	Uranium	7440-61-1	<0.1	n/a	ug/L	12/13/04	-0.220	0.220	U
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L	12/13/04	-0.880	0.880	U
BLANK	Zinc	7440-66-6	<3.7	n/a	ug/L	12/13/04	-8.800	8.800	U
LCS	Silver	7440-22-4	37.8	94.500	% Recov	12/13/04	85.000	115.000	
LCS	Arsenic	7440-38-2	36.61	91.525	% Recov	12/13/04	85.000	115.000	
LCS	Arsenic	7440-38-2	35.63	89.075	% Recov	12/13/04	85.000	115.000	
LCS	Barium	7440-39-3	37.3	93.250	% Recov	12/13/04	85.000	115.000	
LCS	Beryllium	7440-41-7	34.62	86.550	% Recov	12/13/04	85.000	115.000	
LCS	Cadmium	7440-43-9	36.68	91.700	% Recov	12/13/04	85.000	115.000	
LCS	Cadmium	7440-43-9	37.05	92.625	% Recov	12/13/04	85.000	115.000	
LCS	Chromium	7440-47-3	37.63	94.075	% Recov	12/13/04	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Chromium	7440-47-3	37.85	94.625	% Recov	12/13/04	85.000	115.000	
LCS	Copper	7440-50-8	36.6	91.500	% Recov	12/13/04	85.000	115.000	
LCS	Copper	7440-50-8	36.85	92.125	% Recov	12/13/04	85.000	115.000	
LCS	Mercury	7439-97-6	1.69	84.500	% Recov	12/13/04	85.000	115.000	•
LCS	Mercury	7439-97-6	1.658	82.900	% Recov	12/13/04	85.000	115.000	•
LCS	Manganese	7439-96-5	38.25	95.625	% Recov	12/13/04	85.000	115.000	
LCS	Molybdenum	7439-98-7	36.37	90.925	% Recov	12/13/04	85.000	115.000	
LCS	Nickel	7440-02-0	38.39	95.975	% Recov	12/13/04	85.000	115.000	
LCS	Lead	7439-92-1	37.48	93.700	% Recov	12/13/04	85.000	115.000	
LCS	Lead	7439-92-1	36.67	91.675	% Recov	12/13/04	85.000	115.000	
LCS	Antimony	7440-36-0	41.66	104.150	% Recov	12/13/04	85.000	115.000	
LCS	Selenium	7782-49-2	35.05	87.625	% Recov	12/13/04	85.000	115.000	
LCS	Selenium	7782-49-2	34.8	87.000	% Recov	12/13/04	85.000	115.000	
LCS	Tin	7440-31-5	36.96	92.400	% Recov	12/13/04	85.000	115.000	
LCS	Strontium	7440-24-6	37.76	94.400	% Recov	12/13/04	80.000	120.000	
LCS	Thallium	7440-28-0	37.13	92.825	% Recov	12/13/04	85.000	115.000	
LCS	Uranium	7440-61-1	37.5	93.750	% Recov	12/13/04	85.000	115.000	
LCS	Uranium	7440-61-1	37.67	94.175	% Recov	12/13/04	85.000	115.000	
LCS	Vanadium	7440-62-2	37.9	94.750	% Recov	12/13/04	85.000	115.000	
LCS	Zinc	7440-66-6	35.2	88.000	% Recov	12/13/04	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 12/08/04
Receive Date:12/08/04

Lab ID: W040002551
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	1031.1	103.110	% Recov	12/20/04	75.000	125.000	
MS	Aluminum	7429-90-5	982.4	98.240	% Recov	12/20/04	75.000	125.000	
MS	Boron	7440-42-8	1034	103.400	% Recov	12/20/04	70.000	130.000	
MS	Calcium	7440-70-2	1039.4	103.940	% Recov	12/20/04	75.000	125.000	
MS	Iron	7439-89-6	1083	108.300	% Recov	12/20/04	75.000	125.000	
MS	Potassium	7440-09-7	11130	111.300	% Recov	12/20/04	75.000	125.000	
MS	Lithium	7439-93-2	1140	114.000	% Recov	12/20/04	70.000	130.000	
MS	Magnesium	7439-95-4	1063	106.300	% Recov	12/20/04	75.000	125.000	
MS	Sodium	7440-23-5	1123	112.300	% Recov	12/20/04	75.000	125.000	
MS	Nickel	7440-02-0	1049.5	104.950	% Recov	12/20/04	75.000	125.000	
MS	Phosphorus	7723-14-0	1133	113.300	% Recov	12/20/04	70.000	130.000	
MS	Selenium	7782-49-2	1104	110.400	% Recov	12/20/04	75.000	125.000	
MS	Silicon	7440-21-3	4988	99.760	% Recov	12/20/04	70.000	130.000	
MSD	Silver	7440-22-4	1040.1	104.010	% Recov	12/20/04	75.000	125.000	
MSD	Aluminum	7429-90-5	989.9	98.990	% Recov	12/20/04	75.000	125.000	
MSD	Boron	7440-42-8	1039	103.900	% Recov	12/20/04	75.000	125.000	
MSD	Calcium	7440-70-2	1052.4	105.240	% Recov	12/20/04	75.000	125.000	
MSD	Iron	7439-89-6	1117	111.700	% Recov	12/20/04	75.000	125.000	
MSD	Potassium	7440-09-7	11140	111.400	% Recov	12/20/04	75.000	125.000	
MSD	Lithium	7439-93-2	1159	115.900	% Recov	12/20/04	75.000	125.000	
MSD	Magnesium	7439-95-4	1088	108.800	% Recov	12/20/04	75.000	125.000	
MSD	Sodium	7440-23-5	1117	111.700	% Recov	12/20/04	75.000	125.000	
MSD	Nickel	7440-02-0	1074.5	107.450	% Recov	12/20/04	75.000	125.000	
MSD	Phosphorus	7723-14-0	1047	104.700	% Recov	12/20/04	75.000	125.000	
MSD	Selenium	7782-49-2	1120	112.000	% Recov	12/20/04	75.000	125.000	
MSD	Silicon	7440-21-3	5761	115.220	% Recov	12/20/04	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 12/08/04
Receive Date:12/08/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Silver	7440-22-4	104.010	0.869	RPD	12/20/04	0.000	20.000	
SPK-RPD	Aluminum	7429-90-5	98.990	0.761	RPD	12/20/04	0.000	20.000	
SPK-RPD	Boron	7440-42-8	103.900	0.482	RPD	12/20/04	0.000	20.000	
SPK-RPD	Calcium	7440-70-2	105.240	1.243	RPD	12/20/04	0.000	20.000	
SPK-RPD	Iron	7439-89-6	111.700	3.091	RPD	12/20/04	0.000	20.000	
SPK-RPD	Potassium	7440-09-7	111.400	0.090	RPD	12/20/04	0.000	20.000	
SPK-RPD	Lithium	7439-93-2	115.900	1.653	RPD	12/20/04	0.000	20.000	
SPK-RPD	Magnesium	7439-95-4	108.800	2.325	RPD	12/20/04	0.000	20.000	
SPK-RPD	Sodium	7440-23-5	129.100	0.464	RPD	12/20/04	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	107.450	2.354	RPD	12/20/04	0.000	20.000	
SPK-RPD	Phosphorus	7723-14-0	104.700	7.890	RPD	12/20/04	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	112.000	1.439	RPD	12/20/04	0.000	20.000	
SPK-RPD	Silicon	7440-21-3	115.220	14.383	RPD	12/20/04	0.000	20.000	

BATCH QC

BLANK	Silver	7440-22-4	<1.8	n/a	ug/L	12/20/04			U
BLANK	Aluminum	7429-90-5	<27	n/a	ug/L	12/20/04			U
BLANK	Boron	7440-42-8	<26	n/a	ug/L	12/20/04			U
BLANK	Calcium	7440-70-2	34.7	34.700	ug/L	12/20/04			
BLANK	Iron	7439-89-6	34.6	34.600	ug/L	12/20/04			
BLANK	Potassium	7440-09-7	<110	n/a	ug/L	12/20/04			U
BLANK	Lithium	7439-93-2	<1	n/a	ug/L	12/20/04			U
BLANK	Magnesium	7439-95-4	39	39.000	ug/L	12/20/04			
BLANK	Sodium	7440-23-5	<200	n/a	ug/L	12/20/04			U
BLANK	Nickel	7440-02-0	<1.4	n/a	ug/L	12/20/04			U
BLANK	Phosphorus	7723-14-0	<48	n/a	ug/L	12/20/04			U
BLANK	Selenium	7782-49-2	<18	n/a	ug/L	12/20/04			U
BLANK	Silicon	7440-21-3	<17	n/a	ug/L	12/20/04			U
LCS	Silver	7440-22-4	1027	102.700	% Recov	12/20/04	80.000	120.000	
LCS	Aluminum	7429-90-5	988.4	98.840	% Recov	12/20/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Boron	7440-42-8	1012	101.200	% Recov	12/20/04	80.000	120.000	
LCS	Calcium	7440-70-2	1065	106.500	% Recov	12/20/04	80.000	120.000	
LCS	Iron	7439-89-6	1090	109.000	% Recov	12/20/04	80.000	120.000	
LCS	Potassium	7440-09-7	10990	109.900	% Recov	12/20/04	80.000	120.000	
LCS	Lithium	7439-93-2	1126	112.600	% Recov	12/20/04	80.000	120.000	
LCS	Magnesium	7439-95-4	1053	105.300	% Recov	12/20/04	80.000	120.000	
LCS	Sodium	7440-23-5	1122	112.200	% Recov	12/20/04	80.000	120.000	
LCS	Nickel	7440-02-0	1053	105.300	% Recov	12/20/04	80.000	120.000	
LCS	Phosphorus	7723-14-0	1006	100.600	% Recov	12/20/04	80.000	120.000	
LCS	Selenium	7782-49-2	1094	109.400	% Recov	12/20/04	80.000	120.000	
LCS	Silicon	7440-21-3	5011	100.220	% Recov	12/20/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/01/04
Receive Date:12/01/04

Lab ID: W040002529
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	36.82	92.050	% Recov	12/21/04	70.000	130.000	
MS	Arsenic	7440-38-2	36.99	92.475	% Recov	12/21/04	70.000	130.000	
MS	Barium	7440-39-3	41.6	104.000	% Recov	12/21/04	70.000	130.000	
MS	Beryllium	7440-41-7	39.6	99.000	% Recov	12/21/04	70.000	130.000	
MS	Cadmium	7440-43-9	35.13	87.825	% Recov	12/21/04	70.000	130.000	
MS	Chromium	7440-47-3	37.23	93.075	% Recov	12/21/04	70.000	130.000	
MS	Copper	7440-50-8	32.06	80.150	% Recov	12/21/04	70.000	130.000	
MS	Mercury	7439-97-6	2.146	107.300	% Recov	12/21/04	70.000	130.000	
MS	Manganese	7439-96-5	N/A	n/a	% Recov	12/21/04	70.000	130.000	
MS	Molybdenum	7439-98-7	41.47	103.675	% Recov	12/21/04	70.000	130.000	
MS	Nickel	7440-02-0	33.707	84.268	% Recov	12/21/04	70.000	130.000	
MS	Lead	7439-92-1	43.53	108.825	% Recov	12/21/04	70.000	130.000	
MS	Antimony	7440-36-0	44.39	110.975	% Recov	12/21/04	70.000	130.000	
MS	Selenium	7782-49-2	31.213	78.032	% Recov	12/21/04	70.000	130.000	
MS	Tin	7440-31-5	40.77	101.925	% Recov	12/21/04	70.000	130.000	
MS	Strontium	7440-24-6	N/A	n/a	% Recov	12/21/04	70.000	130.000	
MS	Thallium	7440-28-0	44.12	110.300	% Recov	12/21/04	70.000	130.000	
MS	Uranium	7440-61-1	49.292	123.230	% Recov	12/21/04	70.000	130.000	
MS	Vanadium	7440-62-2	39.479	98.697	% Recov	12/21/04	70.000	130.000	
MS	Zinc	7440-66-6	29.92	74.800	% Recov	12/21/04	70.000	130.000	
MSD	Silver	7440-22-4	35.95	89.875	% Recov	12/21/04	70.000	130.000	
MSD	Arsenic	7440-38-2	36.5	91.250	% Recov	12/21/04	70.000	130.000	
MSD	Barium	7440-39-3	32.6	81.500	% Recov	12/21/04	70.000	130.000	
MSD	Beryllium	7440-41-7	39.31	98.275	% Recov	12/21/04	70.000	130.000	
MSD	Cadmium	7440-43-9	34.75	86.875	% Recov	12/21/04	70.000	130.000	
MSD	Chromium	7440-47-3	37.34	93.350	% Recov	12/21/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/01/04
Receive Date:12/01/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Copper	7440-50-8	31.63	79.075	% Recov	12/21/04	70.000	130.000	
MSD	Mercury	7439-97-6	2.08	104.000	% Recov	12/21/04	70.000	130.000	
MSD	Manganese	7439-96-5	N/A	n/a	% Recov	12/21/04	70.000	130.000	
MSD	Molybdenum	7439-98-7	40.33	100.825	% Recov	12/21/04	70.000	130.000	
MSD	Nickel	7440-02-0	32.957	82.392	% Recov	12/21/04	70.000	130.000	
MSD	Lead	7439-92-1	42.98	107.450	% Recov	12/21/04	70.000	130.000	
MSD	Antimony	7440-36-0	43.81	109.525	% Recov	12/21/04	70.000	130.000	
MSD	Selenium	7782-49-2	29.823	74.558	% Recov	12/21/04	70.000	130.000	
MSD	Tin	7440-31-5	40.18	100.450	% Recov	12/21/04	70.000	130.000	
MSD	Strontium	7440-24-6	N/A	n/a	% Recov	12/21/04	70.000	130.000	
MSD	Thallium	7440-28-0	43.49	108.725	% Recov	12/21/04	70.000	130.000	
MSD	Uranium	7440-61-1	48.452	121.130	% Recov	12/21/04	70.000	130.000	
MSD	Vanadium	7440-62-2	39.699	99.248	% Recov	12/21/04	70.000	130.000	
MSD	Zinc	7440-66-6	29.61	74.025	% Recov	12/21/04	70.000	130.000	

Lab ID: W040002547
BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	40.24	100.600	% Recov	12/21/04	70.000	130.000	
MS	Cadmium	7440-43-9	38.58	96.450	% Recov	12/21/04	70.000	130.000	
MS	Chromium	7440-47-3	40.72	101.800	% Recov	12/21/04	70.000	130.000	
MS	Copper	7440-50-8	39.21	98.025	% Recov	12/21/04	70.000	130.000	
MS	Lead	7439-92-1	40.97	102.425	% Recov	12/21/04	70.000	130.000	
MSD	Silver	7440-22-4	41.13	102.825	% Recov	12/21/04	70.000	130.000	
MSD	Cadmium	7440-43-9	39.05	97.625	% Recov	12/21/04	70.000	130.000	
MSD	Chromium	7440-47-3	40.52	101.300	% Recov	12/21/04	70.000	130.000	
MSD	Copper	7440-50-8	39.21	98.025	% Recov	12/21/04	70.000	130.000	
MSD	Lead	7439-92-1	40.9	102.250	% Recov	12/21/04	70.000	130.000	

Lab ID: W040002570
BATCH QC ASSOCIATED WITH SAMPLE

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/09/04
Receive Date:12/10/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	40.02	100.050	% Recov	12/21/04	70.000	130.000	
MS	Arsenic	7440-38-2	39.13	97.825	% Recov	12/21/04	70.000	130.000	
MS	Barium	7440-39-3	40.91	102.275	% Recov	12/21/04	70.000	130.000	
MS	Beryllium	7440-41-7	42.39	105.975	% Recov	12/21/04	70.000	130.000	
MS	Cadmium	7440-43-9	38.01	95.025	% Recov	12/21/04	70.000	130.000	
MS	Chromium	7440-47-3	38.44	96.100	% Recov	12/21/04	70.000	130.000	
MS	Copper	7440-50-8	36.92	92.300	% Recov	12/21/04	70.000	130.000	
MS	Mercury	7439-97-6	1.987	99.350	% Recov	12/21/04	70.000	130.000	
MS	Manganese	7439-96-5	35.9	89.750	% Recov	12/21/04	70.000	130.000	
MS	Molybdenum	7439-98-7	40.98	102.450	% Recov	12/21/04	70.000	130.000	
MS	Nickel	7440-02-0	36.737	91.843	% Recov	12/21/04	70.000	130.000	
MS	Lead	7439-92-1	41.29	103.225	% Recov	12/21/04	70.000	130.000	
MS	Antimony	7440-36-0	45.92	114.800	% Recov	12/21/04	70.000	130.000	
MS	Selenium	7782-49-2	34.7238	86.809	% Recov	12/21/04	70.000	130.000	
MS	Tin	7440-31-5	41.24	103.100	% Recov	12/21/04	70.000	130.000	
MS	Strontium	7440-24-6	40.8	102.000	% Recov	12/21/04	70.000	130.000	
MS	Thallium	7440-28-0	41.2763	103.191	% Recov	12/21/04	70.000	130.000	
MS	Uranium	7440-61-1	43.8925	109.731	% Recov	12/21/04	70.000	130.000	
MS	Vanadium	7440-62-2	40.507	101.267	% Recov	12/21/04	70.000	130.000	
MS	Zinc	7440-66-6	32.14	80.350	% Recov	12/21/04	70.000	130.000	
MSD	Silver	7440-22-4	40.2	100.500	% Recov	12/21/04	70.000	130.000	
MSD	Arsenic	7440-38-2	40.14	100.350	% Recov	12/21/04	70.000	130.000	
MSD	Barium	7440-39-3	41.37	103.425	% Recov	12/21/04	70.000	130.000	
MSD	Beryllium	7440-41-7	42.11	105.275	% Recov	12/21/04	70.000	130.000	
MSD	Cadmium	7440-43-9	38.6	96.500	% Recov	12/21/04	70.000	130.000	
MSD	Chromium	7440-47-3	38.94	97.350	% Recov	12/21/04	70.000	130.000	
MSD	Copper	7440-50-8	36.55	91.375	% Recov	12/21/04	70.000	130.000	
MSD	Mercury	7439-97-6	2.061	103.050	% Recov	12/21/04	70.000	130.000	
MSD	Manganese	7439-96-5	40.6	101.500	% Recov	12/21/04	70.000	130.000	
MSD	Molybdenum	7439-98-7	41.2	103.000	% Recov	12/21/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/09/04
Receive Date:12/10/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Nickel	7440-02-0	37.147	92.867	% Recov	12/21/04	70.000	130.000	
MSD	Lead	7439-92-1	42.26	105.650	% Recov	12/21/04	70.000	130.000	
MSD	Antimony	7440-36-0	46.23	115.575	% Recov	12/21/04	70.000	130.000	
MSD	Selenium	7782-49-2	35.0238	87.559	% Recov	12/21/04	70.000	130.000	
MSD	Tin	7440-31-5	41.21	103.025	% Recov	12/21/04	70.000	130.000	
MSD	Strontium	7440-24-6	40.6	101.500	% Recov	12/21/04	70.000	130.000	
MSD	Thallium	7440-28-0	42.5363	106.341	% Recov	12/21/04	70.000	130.000	
MSD	Uranium	7440-61-1	45.0625	112.656	% Recov	12/21/04	70.000	130.000	
MSD	Vanadium	7440-62-2	40.247	100.618	% Recov	12/21/04	70.000	130.000	
MSD	Zinc	7440-66-6	33.51	83.775	% Recov	12/21/04	70.000	130.000	

Lab ID: W040002607
BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	39.15	97.875	% Recov	12/21/04	70.000	130.000	
MS	Arsenic	7440-38-2	37.98	94.950	% Recov	12/21/04	70.000	130.000	
MS	Barium	7440-39-3	42.3	105.750	% Recov	12/21/04	70.000	130.000	
MS	Beryllium	7440-41-7	41.95	104.875	% Recov	12/21/04	70.000	130.000	
MS	Cadmium	7440-43-9	37.56	93.900	% Recov	12/21/04	70.000	130.000	
MS	Chromium	7440-47-3	38.46	96.150	% Recov	12/21/04	70.000	130.000	
MS	Copper	7440-50-8	36.42	91.050	% Recov	12/21/04	70.000	130.000	
MS	Mercury	7439-97-6	1.981	99.050	% Recov	12/21/04	70.000	130.000	
MS	Manganese	7439-96-5	47.1	117.750	% Recov	12/21/04	70.000	130.000	
MS	Molybdenum	7439-98-7	41.45	103.625	% Recov	12/21/04	70.000	130.000	
MS	Nickel	7440-02-0	36.363	90.907	% Recov	12/21/04	70.000	130.000	
MS	Lead	7439-92-1	41.42	103.550	% Recov	12/21/04	70.000	130.000	
MS	Antimony	7440-36-0	45.33	113.325	% Recov	12/21/04	70.000	130.000	
MS	Selenium	7782-49-2	34.411	86.028	% Recov	12/21/04	70.000	130.000	
MS	Tin	7440-31-5	40.54	101.350	% Recov	12/21/04	70.000	130.000	
MS	Strontium	7440-24-6	41.8	104.500	% Recov	12/21/04	70.000	130.000	
MS	Thallium	7440-28-0	41.4694	103.673	% Recov	12/21/04	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/14/04
Receive Date:12/14/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Uranium	7440-61-1	44.2254	110.563	% Recov	12/21/04	70.000	130.000	
MS	Vanadium	7440-62-2	39.683	99.208	% Recov	12/21/04	70.000	130.000	
MS	Zinc	7440-66-6	30.27	75.675	% Recov	12/21/04	70.000	130.000	
MSD	Silver	7440-22-4	39.47	98.675	% Recov	12/21/04	70.000	130.000	
MSD	Arsenic	7440-38-2	38.73	96.825	% Recov	12/21/04	70.000	130.000	
MSD	Barium	7440-39-3	40.47	101.175	% Recov	12/21/04	70.000	130.000	
MSD	Beryllium	7440-41-7	41.81	104.525	% Recov	12/21/04	70.000	130.000	
MSD	Cadmium	7440-43-9	37.61	94.025	% Recov	12/21/04	70.000	130.000	
MSD	Chromium	7440-47-3	37.93	94.825	% Recov	12/21/04	70.000	130.000	
MSD	Copper	7440-50-8	36.16	90.400	% Recov	12/21/04	70.000	130.000	
MSD	Mercury	7439-97-6	2.019	100.950	% Recov	12/21/04	70.000	130.000	
MSD	Manganese	7439-96-5	41.1	102.750	% Recov	12/21/04	70.000	130.000	
MSD	Molybdenum	7439-98-7	41.16	102.900	% Recov	12/21/04	70.000	130.000	
MSD	Nickel	7440-02-0	36.393	90.983	% Recov	12/21/04	70.000	130.000	
MSD	Lead	7439-92-1	41.59	103.975	% Recov	12/21/04	70.000	130.000	
MSD	Antimony	7440-36-0	45.83	114.575	% Recov	12/21/04	70.000	130.000	
MSD	Selenium	7782-49-2	34.261	85.653	% Recov	12/21/04	70.000	130.000	
MSD	Tin	7440-31-5	40.98	102.450	% Recov	12/21/04	70.000	130.000	
MSD	Strontium	7440-24-6	42.3	105.750	% Recov	12/21/04	70.000	130.000	
MSD	Thallium	7440-28-0	41.8194	104.549	% Recov	12/21/04	70.000	130.000	
MSD	Uranium	7440-61-1	44.3954	110.989	% Recov	12/21/04	70.000	130.000	
MSD	Vanadium	7440-62-2	39.393	98.483	% Recov	12/21/04	70.000	130.000	
MSD	Zinc	7440-66-6	31.04	77.600	% Recov	12/21/04	70.000	130.000	
SPK-RPD	Silver	7440-22-4	98.675	0.814	RPD	12/21/04	0.000	20.000	
SPK-RPD	Arsenic	7440-38-2	96.825	1.955	RPD	12/21/04	0.000	20.000	
SPK-RPD	Barium	7440-39-3	101.175	4.422	RPD	12/21/04	0.000	20.000	
SPK-RPD	Beryllium	7440-41-7	104.525	0.334	RPD	12/21/04	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	94.025	0.133	RPD	12/21/04	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	94.825	1.388	RPD	12/21/04	0.000	20.000	
SPK-RPD	Copper	7440-50-8	90.400	0.716	RPD	12/21/04	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 12/14/04
Receive Date:12/14/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Mercury	7439-97-6	100.950	1.900	RPD	12/21/04	0.000	20.000	
SPK-RPD	Manganese	7439-96-5	102.750	13.605	RPD	12/21/04	0.000	20.000	
SPK-RPD	Molybdenum	7439-98-7	102.900	0.702	RPD	12/21/04	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	90.983	0.084	RPD	12/21/04	0.000	20.000	
SPK-RPD	Lead	7439-92-1	103.975	0.410	RPD	12/21/04	0.000	20.000	
SPK-RPD	Antimony	7440-36-0	114.575	1.097	RPD	12/21/04	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	85.653	0.437	RPD	12/21/04	0.000	20.000	
SPK-RPD	Tin	7440-31-5	102.450	1.079	RPD	12/21/04	0.000	20.000	
SPK-RPD	Strontium	7440-24-6	105.750	1.189	RPD	12/21/04	0.000	20.000	
SPK-RPD	Thallium	7440-28-0	104.549	0.841	RPD	12/21/04	0.000	20.000	
SPK-RPD	Uranium	7440-61-1	110.989	0.385	RPD	12/21/04	0.000	20.000	
SPK-RPD	Vanadium	7440-62-2	98.483	0.733	RPD	12/21/04	0.000	20.000	
SPK-RPD	Zinc	7440-66-6	77.600	2.512	RPD	12/21/04	0.000	20.000	

BATCH QC

BLANK	Silver	7440-22-4	<0.1	n/a	ug/L	12/21/04			U
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L	12/21/04			U
BLANK	Barium	7440-39-3	<3.5	n/a	ug/L	12/21/04			U
BLANK	Beryllium	7440-41-7	<0.1	n/a	ug/L	12/21/04			U
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L	12/21/04			U
BLANK	Chromium	7440-47-3	<3.3	n/a	ug/L	12/21/04			U
BLANK	Copper	7440-50-8	<1.3	n/a	ug/L	12/21/04			U
BLANK	Mercury	7439-97-6	<0.1	n/a	ug/L	12/21/04			U
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L	12/21/04			U
BLANK	Molybdenum	7439-98-7	<0.3	n/a	ug/L	12/21/04			U
BLANK	Nickel	7440-02-0	<0.1	n/a	ug/L	12/21/04			U
BLANK	Lead	7439-92-1	<0.2	n/a	ug/L	12/21/04			U
BLANK	Antimony	7440-36-0	<1.1	n/a	ug/L	12/21/04			U
BLANK	Selenium	7782-49-2	<0.4	n/a	ug/L	12/21/04			U
BLANK	Tin	7440-31-5	<0.8	n/a	ug/L	12/21/04			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Strontium	7440-24-6	<0.1	n/a	ug/L	12/21/04			U
BLANK	Thallium	7440-28-0	<0.1	n/a	ug/L	12/21/04			U
BLANK	Uranium	7440-61-1	<0.1	n/a	ug/L	12/21/04			U
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L	12/21/04			U
BLANK	Zinc	7440-66-6	<3.7	n/a	ug/L	12/21/04			U
LCS	Silver	7440-22-4	40.57	101.425	% Recov	12/21/04	85.000	115.000	
LCS	Arsenic	7440-38-2	38.74	96.850	% Recov	12/21/04	85.000	115.000	
LCS	Barium	7440-39-3	40.59	101.475	% Recov	12/21/04	85.000	115.000	
LCS	Beryllium	7440-41-7	39.26	98.150	% Recov	12/21/04	85.000	115.000	
LCS	Cadmium	7440-43-9	38.86	97.150	% Recov	12/21/04	85.000	115.000	
LCS	Chromium	7440-47-3	40.35	100.875	% Recov	12/21/04	85.000	115.000	
LCS	Copper	7440-50-8	39.38	98.450	% Recov	12/21/04	85.000	115.000	
LCS	Mercury	7439-97-6	1.944	97.200	% Recov	12/21/04	85.000	115.000	
LCS	Manganese	7439-96-5	40.19	100.475	% Recov	12/21/04	85.000	115.000	
LCS	Molybdenum	7439-98-7	40.18	100.450	% Recov	12/21/04	85.000	115.000	
LCS	Nickel	7440-02-0	39.47	98.675	% Recov	12/21/04	85.000	115.000	
LCS	Lead	7439-92-1	40.69	101.725	% Recov	12/21/04	85.000	115.000	
LCS	Antimony	7440-36-0	45.77	114.425	% Recov	12/21/04	85.000	115.000	
LCS	Selenium	7782-49-2	35.47	88.675	% Recov	12/21/04	85.000	115.000	
LCS	Tin	7440-31-5	40.26	100.650	% Recov	12/21/04	85.000	115.000	
LCS	Strontium	7440-24-6	40.91	102.275	% Recov	12/21/04	80.000	120.000	
LCS	Thallium	7440-28-0	40.11	100.275	% Recov	12/21/04	85.000	115.000	
LCS	Uranium	7440-61-1	40.96	102.400	% Recov	12/21/04	85.000	115.000	
LCS	Vanadium	7440-62-2	40.44	101.100	% Recov	12/21/04	85.000	115.000	
LCS	Zinc	7440-66-6	34.66	86.650	% Recov	12/21/04	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

Lab ID: W050000144
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	985.2	98.520	% Recov	02/09/05	75.000	125.000	
MS	Aluminum	7429-90-5	1057.5	105.750	% Recov	02/09/05	75.000	125.000	
MS	Boron	7440-42-8	1031.7	103.170	% Recov	02/09/05	70.000	130.000	
MS	Calcium	7440-70-2	1290	n/a	% Recov	02/09/05	75.000	125.000	
MS	Iron	7439-89-6	1057	105.700	% Recov	02/09/05	75.000	125.000	
MS	Potassium	7440-09-7	10943	109.430	% Recov	02/09/05	75.000	125.000	
MS	Lithium	7439-93-2	1085.8	108.580	% Recov	02/09/05	70.000	130.000	
MS	Magnesium	7439-95-4	910	91.000	% Recov	02/09/05	75.000	125.000	
MS	Sodium	7440-23-5	550	n/a	% Recov	02/09/05	75.000	125.000	
MS	Nickel	7440-02-0	1003.6	100.360	% Recov	02/09/05	75.000	125.000	
MS	Phosphorus	7723-14-0	1075	107.500	% Recov	02/09/05	70.000	130.000	
MS	Selenium	7782-49-2	1027.5	102.750	% Recov	02/09/05	75.000	125.000	
MS	Silicon	7440-21-3	4770	95.400	% Recov	02/09/05	70.000	130.000	
MSD	Silver	7440-22-4	949.9	94.990	% Recov	02/09/05	75.000	125.000	
MSD	Aluminum	7429-90-5	1047.5	104.750	% Recov	02/09/05	75.000	125.000	
MSD	Boron	7440-42-8	1012.7	101.270	% Recov	02/09/05	75.000	125.000	
MSD	Calcium	7440-70-2	1100	n/a	% Recov	02/09/05	75.000	125.000	
MSD	Iron	7439-89-6	1056	105.600	% Recov	02/09/05	75.000	125.000	
MSD	Potassium	7440-09-7	10773	107.730	% Recov	02/09/05	75.000	125.000	
MSD	Lithium	7439-93-2	1077.8	107.780	% Recov	02/09/05	75.000	125.000	
MSD	Magnesium	7439-95-4	930	93.000	% Recov	02/09/05	75.000	125.000	
MSD	Sodium	7440-23-5	270	n/a	% Recov	02/09/05	75.000	125.000	
MSD	Nickel	7440-02-0	1006.6	100.660	% Recov	02/09/05	75.000	125.000	
MSD	Phosphorus	7723-14-0	1011	101.100	% Recov	02/09/05	75.000	125.000	
MSD	Selenium	7782-49-2	1019.5	101.950	% Recov	02/09/05	75.000	125.000	
MSD	Silicon	7440-21-3	4920	98.400	% Recov	02/09/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Silver	7440-22-4	94.990	3.648	RPD	02/09/05	0.000	20.000	
SPK-RPD	Aluminum	7429-90-5	104.750	0.950	RPD	02/09/05	0.000	20.000	
SPK-RPD	Boron	7440-42-8	101.270	1.859	RPD	02/09/05	0.000	20.000	
SPK-RPD	Calcium	7440-70-2		n/a	RPD	02/09/05	0.000	20.000	
SPK-RPD	Iron	7439-89-6	105.600	0.095	RPD	02/09/05	0.000	20.000	
SPK-RPD	Potassium	7440-09-7	107.730	1.566	RPD	02/09/05	0.000	20.000	
SPK-RPD	Lithium	7439-93-2	107.780	0.740	RPD	02/09/05	0.000	20.000	
SPK-RPD	Magnesium	7439-95-4	93.000	2.174	RPD	02/09/05	0.000	20.000	
SPK-RPD	Sodium	7440-23-5		n/a	RPD	02/09/05	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	100.660	0.298	RPD	02/09/05	0.000	20.000	
SPK-RPD	Phosphorus	7723-14-0	101.100	6.136	RPD	02/09/05	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	101.950	0.782	RPD	02/09/05	0.000	20.000	
SPK-RPD	Silicon	7440-21-3	98.400	3.096	RPD	02/09/05	0.000	20.000	

BATCH QC

BLANK	Silver	7440-22-4	17.1	17.100	ug/L	02/09/05			
BLANK	Aluminum	7429-90-5	<27	n/a	ug/L	02/09/05			U
BLANK	Boron	7440-42-8	<26	n/a	ug/L	02/09/05			U
BLANK	Calcium	7440-70-2	26.5	26.500	ug/L	02/09/05			
BLANK	Iron	7439-89-6	<21	n/a	ug/L	02/09/05			U
BLANK	Potassium	7440-09-7	<110	n/a	ug/L	02/09/05			U
BLANK	Lithium	7439-93-2	1.9	1.900	ug/L	02/09/05			
BLANK	Magnesium	7439-95-4	<19	n/a	ug/L	02/09/05			U
BLANK	Sodium	7440-23-5	<200	n/a	ug/L	02/09/05			U
BLANK	Nickel	7440-02-0	<1.4	n/a	ug/L	02/09/05			U
BLANK	Phosphorus	7723-14-0	<48	n/a	ug/L	02/09/05			U
BLANK	Selenium	7782-49-2	<18	n/a	ug/L	02/09/05			U
BLANK	Silicon	7440-21-3	<17	n/a	ug/L	02/09/05			U
LCS	Silver	7440-22-4	1025	102.500	% Recov	02/09/05	80.000	120.000	
LCS	Aluminum	7429-90-5	1080	108.000	% Recov	02/09/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Boron	7440-42-8	1035	103.500	% Recov	02/09/05	80.000	120.000	
LCS	Calcium	7440-70-2	1051	105.100	% Recov	02/09/05	80.000	120.000	
LCS	Iron	7439-89-6	1066	106.600	% Recov	02/09/05	80.000	120.000	
LCS	Potassium	7440-09-7	11130	111.300	% Recov	02/09/05	80.000	120.000	
LCS	Lithium	7439-93-2	1114	111.400	% Recov	02/09/05	80.000	120.000	
LCS	Magnesium	7439-95-4	1052	105.200	% Recov	02/09/05	80.000	120.000	
LCS	Sodium	7440-23-5	949.7	94.970	% Recov	02/09/05	80.000	120.000	
LCS	Nickel	7440-02-0	1011	101.100	% Recov	02/09/05	80.000	120.000	
LCS	Phosphorus	7723-14-0	968	96.800	% Recov	02/09/05	80.000	120.000	
LCS	Selenium	7782-49-2	1054	105.400	% Recov	02/09/05	80.000	120.000	
LCS	Silicon	7440-21-3	5287	105.740	% Recov	02/09/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

Lab ID: W050000144
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	38.07	95.175	% Recov	02/01/05	70.000	130.000	
MS	Arsenic	7440-38-2	39.38	98.450	% Recov	02/01/05	70.000	130.000	
MS	Barium	7440-39-3	39.92	99.800	% Recov	02/01/05	70.000	130.000	
MS	Beryllium	7440-41-7	37.95	94.875	% Recov	02/01/05	70.000	130.000	
MS	Cadmium	7440-43-9	37.44	93.600	% Recov	02/01/05	70.000	130.000	
MS	Chromium	7440-47-3	39.2	98.000	% Recov	02/01/05	70.000	130.000	
MS	Copper	7440-50-8	35.09	87.725	% Recov	02/01/05	70.000	130.000	
MS	Mercury	7439-97-6	1.9	95.000	% Recov	02/01/05	70.000	130.000	
MS	Manganese	7439-96-5	38.53	96.325	% Recov	02/01/05	70.000	130.000	
MS	Molybdenum	7439-98-7	39.504	98.760	% Recov	02/01/05	70.000	130.000	
MS	Nickel	7440-02-0	35.443	88.607	% Recov	02/01/05	70.000	130.000	
MS	Lead	7439-92-1	40.18	100.450	% Recov	02/01/05	70.000	130.000	
MS	Antimony	7440-36-0	44.02	110.050	% Recov	02/01/05	70.000	130.000	
MS	Selenium	7782-49-2	36.4065	91.016	% Recov	02/01/05	70.000	130.000	
MS	Tin	7440-31-5	39.38	98.450	% Recov	02/01/05	70.000	130.000	
MS	Strontium	7440-24-6	40.6	101.500	% Recov	02/01/05	70.000	130.000	
MS	Thallium	7440-28-0	40.64	101.600	% Recov	02/01/05	70.000	130.000	
MS	Uranium	7440-61-1	42.0993	105.248	% Recov	02/01/05	70.000	130.000	
MS	Vanadium	7440-62-2	38.8	97.000	% Recov	02/01/05	70.000	130.000	
MS	Zinc	7440-66-6	33.68	84.200	% Recov	02/01/05	70.000	130.000	
MSD	Silver	7440-22-4	37.95	94.875	% Recov	02/01/05	70.000	130.000	
MSD	Arsenic	7440-38-2	37.91	94.775	% Recov	02/01/05	70.000	130.000	
MSD	Barium	7440-39-3	40.71	101.775	% Recov	02/01/05	70.000	130.000	
MSD	Beryllium	7440-41-7	37.4	93.500	% Recov	02/01/05	70.000	130.000	
MSD	Cadmium	7440-43-9	36.94	92.350	% Recov	02/01/05	70.000	130.000	
MSD	Chromium	7440-47-3	39.51	98.775	% Recov	02/01/05	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Copper	7440-50-8	35.76	89.400	% Recov	02/01/05	70.000	130.000	
MSD	Mercury	7439-97-6	1.876	93.800	% Recov	02/01/05	70.000	130.000	
MSD	Manganese	7439-96-5	37.33	93.325	% Recov	02/01/05	70.000	130.000	
MSD	Molybdenum	7439-98-7	39.664	99.160	% Recov	02/01/05	70.000	130.000	
MSD	Nickel	7440-02-0	35.263	88.157	% Recov	02/01/05	70.000	130.000	
MSD	Lead	7439-92-1	40.38	100.950	% Recov	02/01/05	70.000	130.000	
MSD	Antimony	7440-36-0	43.02	107.550	% Recov	02/01/05	70.000	130.000	
MSD	Selenium	7782-49-2	35.0965	87.741	% Recov	02/01/05	70.000	130.000	
MSD	Tin	7440-31-5	38.9	97.250	% Recov	02/01/05	70.000	130.000	
MSD	Strontium	7440-24-6	40.9	102.250	% Recov	02/01/05	70.000	130.000	
MSD	Thallium	7440-28-0	40.62	101.550	% Recov	02/01/05	70.000	130.000	
MSD	Uranium	7440-61-1	41.9193	104.798	% Recov	02/01/05	70.000	130.000	
MSD	Vanadium	7440-62-2	39.66	99.150	% Recov	02/01/05	70.000	130.000	
MSD	Zinc	7440-66-6	32.4	81.000	% Recov	02/01/05	70.000	130.000	
SPK-RPD	Silver	7440-22-4	94.875	0.316	RPD	02/01/05	0.000	20.000	
SPK-RPD	Arsenic	7440-38-2	94.775	3.804	RPD	02/01/05	0.000	20.000	
SPK-RPD	Barium	7440-39-3	101.775	1.960	RPD	02/01/05	0.000	20.000	
SPK-RPD	Beryllium	7440-41-7	93.500	1.460	RPD	02/01/05	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	92.350	1.344	RPD	02/01/05	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	98.775	0.788	RPD	02/01/05	0.000	20.000	
SPK-RPD	Copper	7440-50-8	89.400	1.891	RPD	02/01/05	0.000	20.000	
SPK-RPD	Mercury	7439-97-6	93.800	1.271	RPD	02/01/05	0.000	20.000	
SPK-RPD	Manganese	7439-96-5	93.325	3.164	RPD	02/01/05	0.000	20.000	
SPK-RPD	Molybdenum	7439-98-7	99.160	0.404	RPD	02/01/05	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	88.157	0.509	RPD	02/01/05	0.000	20.000	
SPK-RPD	Lead	7439-92-1	100.950	0.497	RPD	02/01/05	0.000	20.000	
SPK-RPD	Antimony	7440-36-0	107.550	2.298	RPD	02/01/05	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	87.741	3.664	RPD	02/01/05	0.000	20.000	
SPK-RPD	Tin	7440-31-5	97.250	1.226	RPD	02/01/05	0.000	20.000	
SPK-RPD	Strontium	7440-24-6	102.250	0.736	RPD	02/01/05	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Thallium	7440-28-0	101.550	0.049	RPD	02/01/05	0.000	20.000	
SPK-RPD	Uranium	7440-61-1	104.798	0.428	RPD	02/01/05	0.000	20.000	
SPK-RPD	Vanadium	7440-62-2	99.150	2.192	RPD	02/01/05	0.000	20.000	
SPK-RPD	Zinc	7440-66-6	81.000	3.874	RPD	02/01/05	0.000	20.000	

Lab ID: W050000163
BATCH QC ASSOCIATED WITH SAMPLE

MS	Silver	7440-22-4	37.75	94.375	% Recov	02/01/05	70.000	130.000	
MS	Arsenic	7440-38-2	8.5448	21.362	% Recov	02/01/05	70.000	130.000	*
MS	Barium	7440-39-3	43.2	108.000	% Recov	02/01/05	70.000	130.000	
MS	Cadmium	7440-43-9	35.85	89.625	% Recov	02/01/05	70.000	130.000	
MS	Chromium	7440-47-3	NA	n/a	% Recov	02/01/05	70.000	130.000	
MS	Mercury	7439-97-6	1.864	93.200	% Recov	02/01/05	70.000	130.000	
MS	Lead	7439-92-1	NA	n/a	% Recov	02/01/05	70.000	130.000	
MS	Selenium	7782-49-2	6.274	15.685	% Recov	02/01/05	70.000	130.000	*
MSD	Silver	7440-22-4	37.82	94.550	% Recov	02/01/05	70.000	130.000	
MSD	Arsenic	7440-38-2	8.0628	20.157	% Recov	02/01/05	70.000	130.000	*
MSD	Barium	7440-39-3	45.6	114.000	% Recov	02/01/05	70.000	130.000	
MSD	Cadmium	7440-43-9	37.27	93.175	% Recov	02/01/05	70.000	130.000	
MSD	Chromium	7440-47-3	NA	n/a	% Recov	02/01/05	70.000	130.000	
MSD	Mercury	7439-97-6	1.911	95.550	% Recov	02/01/05	70.000	130.000	
MSD	Lead	7439-92-1	NA	n/a	% Recov	02/01/05	70.000	130.000	
MSD	Selenium	7782-49-2	6.064	15.160	% Recov	02/01/05	70.000	130.000	*

Lab ID: W05C000026
BATCH QC ASSOCIATED WITH SAMPLE

MS	Arsenic	7440-38-2	39.15	97.875	% Recov	02/01/05	70.000	130.000
MS	Cadmium	7440-43-9	39.42	98.550	% Recov	02/01/05	70.000	130.000
MS	Chromium	7440-47-3	40.55	101.375	% Recov	02/01/05	70.000	130.000
MS	Copper	7440-50-8	37.75	94.375	% Recov	02/01/05	70.000	130.000

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 01/26/05
Receive Date:01/27/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Mercury	7439-97-6	1.85	92.500	% Recov	02/01/05	70.000	130.000	
MS	Lead	7439-92-1	39.35	98.375	% Recov	02/01/05	70.000	130.000	
MS	Selenium	7782-49-2	39.88	99.700	% Recov	02/01/05	70.000	130.000	
MS	Uranium	7440-61-1	39.96	99.900	% Recov	02/01/05	70.000	130.000	
MSD	Arsenic	7440-38-2	38.16	95.400	% Recov	02/01/05	70.000	130.000	
MSD	Cadmium	7440-43-9	38.53	96.325	% Recov	02/01/05	70.000	130.000	
MSD	Chromium	7440-47-3	41.06	102.650	% Recov	02/01/05	70.000	130.000	
MSD	Copper	7440-50-8	38.31	95.775	% Recov	02/01/05	70.000	130.000	
MSD	Mercury	7439-97-6	1.845	92.250	% Recov	02/01/05	70.000	130.000	
MSD	Lead	7439-92-1	39.63	99.075	% Recov	02/01/05	70.000	130.000	
MSD	Selenium	7782-49-2	37.66	94.150	% Recov	02/01/05	70.000	130.000	
MSD	Uranium	7440-61-1	39.71	99.275	% Recov	02/01/05	70.000	130.000	

BATCH QC

BLANK	Silver	7440-22-4	<0.1	n/a	ug/L	02/01/05			U
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L	02/01/05			U
BLANK	Barium	7440-39-3	<3.5	n/a	ug/L	02/01/05			U
BLANK	Beryllium	7440-41-7	<0.1	n/a	ug/L	02/01/05			U
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L	02/01/05			U
BLANK	Chromium	7440-47-3	<3.3	n/a	ug/L	02/01/05			U
BLANK	Copper	7440-50-8	<1.3	n/a	ug/L	02/01/05			U
BLANK	Mercury	7439-97-6	<0.1	n/a	ug/L	02/01/05			U
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L	02/01/05			U
BLANK	Molybdenum	7439-98-7	<0.3	n/a	ug/L	02/01/05			U
BLANK	Nickel	7440-02-0	<0.1	n/a	ug/L	02/01/05			U
BLANK	Lead	7439-92-1	<0.2	n/a	ug/L	02/01/05			U
BLANK	Antimony	7440-36-0	<1.1	n/a	ug/L	02/01/05			U
BLANK	Selenium	7782-49-2	<0.4	n/a	ug/L	02/01/05			U
BLANK	Tin	7440-31-5	<0.8	n/a	ug/L	02/01/05			U
BLANK	Strontium	7440-24-6	<0.1	n/a	ug/L	02/01/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Thallium	7440-28-0	<0.1	n/a	ug/L	02/01/05			U
BLANK	Uranium	7440-61-1	<0.1	n/a	ug/L	02/01/05			U
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L	02/01/05			U
BLANK	Zinc	7440-66-6	<3.7	n/a	ug/L	02/01/05			U
LCS	Silver	7440-22-4	39.81	99.525	% Recov	02/01/05	85.000	115.000	
LCS	Arsenic	7440-38-2	38.19	95.475	% Recov	02/01/05	85.000	115.000	
LCS	Barium	7440-39-3	40.34	100.850	% Recov	02/01/05	85.000	115.000	
LCS	Beryllium	7440-41-7	36.92	92.300	% Recov	02/01/05	85.000	115.000	
LCS	Cadmium	7440-43-9	37.99	94.975	% Recov	02/01/05	85.000	115.000	
LCS	Chromium	7440-47-3	40.3	100.750	% Recov	02/01/05	85.000	115.000	
LCS	Copper	7440-50-8	38.21	95.525	% Recov	02/01/05	85.000	115.000	
LCS	Mercury	7439-97-6	1.818	90.900	% Recov	02/01/05	85.000	115.000	
LCS	Manganese	7439-96-5	39.87	99.675	% Recov	02/01/05	85.000	115.000	
LCS	Molybdenum	7439-98-7	39.46	98.650	% Recov	02/01/05	85.000	115.000	
LCS	Nickel	7440-02-0	38.62	96.550	% Recov	02/01/05	85.000	115.000	
LCS	Lead	7439-92-1	40.07	100.175	% Recov	02/01/05	85.000	115.000	
LCS	Antimony	7440-36-0	43.48	108.700	% Recov	02/01/05	85.000	115.000	
LCS	Selenium	7782-49-2	36.13	90.325	% Recov	02/01/05	85.000	115.000	
LCS	Tin	7440-31-5	38.98	97.450	% Recov	02/01/05	85.000	115.000	
LCS	Strontium	7440-24-6	40.47	101.175	% Recov	02/01/05	80.000	120.000	
LCS	Thallium	7440-28-0	40.06	100.150	% Recov	02/01/05	85.000	115.000	
LCS	Uranium	7440-61-1	40.65	101.625	% Recov	02/01/05	85.000	115.000	
LCS	Vanadium	7440-62-2	40.41	101.025	% Recov	02/01/05	85.000	115.000	
LCS	Zinc	7440-66-6	35.5	88.750	% Recov	02/01/05	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

Lab ID: W050001669
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Aluminum	7429-90-5	738.8	73.880	% Recov	06/07/05	75.000	125.000	
MS	Boron	7440-42-8	1070	107.000	% Recov	06/07/05	70.000	130.000	
MS	Calcium	7440-70-2	0e0	n/a	% Recov	06/07/05	75.000	125.000	
MS	Iron	7439-89-6	1018.6	101.860	% Recov	06/07/05	75.000	125.000	
MS	Potassium	7440-09-7	10620	106.200	% Recov	06/07/05	75.000	125.000	
MS	Lithium	7439-93-2	1140.5	114.050	% Recov	06/07/05	70.000	130.000	
MS	Magnesium	7439-95-4	1080	n/a	% Recov	06/07/05	75.000	125.000	
MS	Sodium	7440-23-5	1310	n/a	% Recov	06/07/05	75.000	125.000	
MS	Phosphorus	7723-14-0	1075	107.500	% Recov	06/07/05	70.000	130.000	
MS	Silicon	7440-21-3	5250	105.000	% Recov	06/07/05	70.000	130.000	
MSD	Aluminum	7429-90-5	774.2	77.420	% Recov	06/07/05	75.000	125.000	
MSD	Boron	7440-42-8	1059	105.900	% Recov	06/07/05	75.000	125.000	
MSD	Calcium	7440-70-2	700	n/a	% Recov	06/07/05	75.000	125.000	
MSD	Iron	7439-89-6	1036.6	103.660	% Recov	06/07/05	75.000	125.000	
MSD	Potassium	7440-09-7	10580	105.800	% Recov	06/07/05	75.000	125.000	
MSD	Lithium	7439-93-2	1134.5	113.450	% Recov	06/07/05	75.000	125.000	
MSD	Magnesium	7439-95-4	1060	n/a	% Recov	06/07/05	75.000	125.000	
MSD	Sodium	7440-23-5	1290	n/a	% Recov	06/07/05	75.000	125.000	
MSD	Phosphorus	7723-14-0	1058	105.800	% Recov	06/07/05	75.000	125.000	
MSD	Silicon	7440-21-3	5320	106.400	% Recov	06/07/05	75.000	125.000	
SPK-RPD	Aluminum	7429-90-5	77.420	4.679	RPD	06/07/05	0.000	20.000	
SPK-RPD	Boron	7440-42-8	105.900	1.033	RPD	06/07/05	0.000	20.000	
SPK-RPD	Calcium	7440-70-2		n/a	RPD	06/07/05	0.000	20.000	
SPK-RPD	Iron	7439-89-6	103.660	1.752	RPD	06/07/05	0.000	20.000	
SPK-RPD	Potassium	7440-09-7	105.800	0.377	RPD	06/07/05	0.000	20.000	
SPK-RPD	Lithium	7439-93-2	113.450	0.527	RPD	06/07/05	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Magnesium	7439-95-4		n/a	RPD	06/07/05	0.000	20.000	
SPK-RPD	Sodium	7440-23-5		n/a	RPD	06/07/05	0.000	20.000	
SPK-RPD	Phosphorus	7723-14-0	105.800	1.594	RPD	06/07/05	0.000	20.000	
SPK-RPD	Silicon	7440-21-3	106.400	1.325	RPD	06/07/05	0.000	20.000	
BATCH QC									
BLANK	Aluminum	7429-90-5	30.7	30.700	ug/L	06/07/05			
BLANK	Boron	7440-42-8	<26	n/a	ug/L	06/07/05			U
BLANK	Calcium	7440-70-2	29.2	29.200	ug/L	06/07/05			
BLANK	Iron	7439-89-6	<21	n/a	ug/L	06/07/05			U
BLANK	Potassium	7440-09-7	<110	n/a	ug/L	06/07/05			U
BLANK	Lithium	7439-93-2	<1	n/a	ug/L	06/07/05			U
BLANK	Magnesium	7439-95-4	21.4	21.400	ug/L	06/07/05			
BLANK	Sodium	7440-23-5	<200	n/a	ug/L	06/07/05			U
BLANK	Phosphorus	7723-14-0	<48	n/a	ug/L	06/07/05			U
BLANK	Silicon	7440-21-3	<17	n/a	ug/L	06/07/05			U
LCS	Aluminum	7429-90-5	925.1	92.510	% Recov	06/07/05	80.000	120.000	
LCS	Boron	7440-42-8	1030	103.000	% Recov	06/07/05	80.000	120.000	
LCS	Calcium	7440-70-2	1020	102.000	% Recov	06/07/05	80.000	120.000	
LCS	Iron	7439-89-6	1030	103.000	% Recov	06/07/05	80.000	120.000	
LCS	Potassium	7440-09-7	10660	106.600	% Recov	06/07/05	80.000	120.000	
LCS	Lithium	7439-93-2	1138	113.800	% Recov	06/07/05	80.000	120.000	
LCS	Magnesium	7439-95-4	1031	103.100	% Recov	06/07/05	80.000	120.000	
LCS	Sodium	7440-23-5	1130	113.000	% Recov	06/07/05	80.000	120.000	
LCS	Phosphorus	7723-14-0	1009	100.900	% Recov	06/07/05	80.000	120.000	
LCS	Silicon	7440-21-3	5000	100.000	% Recov	06/07/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 06/07/05
Receive Date:06/07/05

Lab ID: W050001692
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Silver	7440-22-4	35.83	89.575	% Recov	06/14/05	70.000	130.000	
MS	Arsenic	7440-38-2	36.15	90.375	% Recov	06/14/05	70.000	130.000	
MS	Barium	7440-39-3	36.98	92.450	% Recov	06/14/05	70.000	130.000	
MS	Beryllium	7440-41-7	38.15	95.375	% Recov	06/14/05	70.000	130.000	
MS	Cadmium	7440-43-9	34.84	87.100	% Recov	06/14/05	70.000	130.000	
MS	Chromium	7440-47-3	38.22	95.550	% Recov	06/14/05	70.000	130.000	
MS	Copper	7440-50-8	34.02	85.050	% Recov	06/14/05	70.000	130.000	
MS	Mercury	7439-97-6	2.018	100.900	% Recov	06/14/05	70.000	130.000	
MS	Manganese	7439-96-5	36.95	92.375	% Recov	06/14/05	70.000	130.000	
MS	Molybdenum	7439-98-7	39.355	98.387	% Recov	06/14/05	70.000	130.000	
MS	Nickel	7440-02-0	35.024	87.560	% Recov	06/14/05	70.000	130.000	
MS	Lead	7439-92-1	41.03	102.575	% Recov	06/14/05	70.000	130.000	
MS	Antimony	7440-36-0	43.65	109.125	% Recov	06/14/05	70.000	130.000	
MS	Selenium	7782-49-2	31.316	78.290	% Recov	06/14/05	70.000	130.000	
MS	Tin	7440-31-5	38.53	96.325	% Recov	06/14/05	70.000	130.000	
MS	Strontium	7440-24-6	NA	n/a	% Recov	06/14/05	70.000	130.000	
MS	Thallium	7440-28-0	39.55	98.875	% Recov	06/14/05	70.000	130.000	
MS	Uranium	7440-61-1	42.917	107.293	% Recov	06/14/05	70.000	130.000	
MS	Vanadium	7440-62-2	39.73	99.325	% Recov	06/14/05	70.000	130.000	
MS	Zinc	7440-66-6	28.24	70.600	% Recov	06/14/05	70.000	130.000	
MSD	Silver	7440-22-4	36.89	92.225	% Recov	06/14/05	70.000	130.000	
MSD	Arsenic	7440-38-2	36.32	90.800	% Recov	06/14/05	70.000	130.000	
MSD	Barium	7440-39-3	39.58	98.950	% Recov	06/14/05	70.000	130.000	
MSD	Beryllium	7440-41-7	38.47	96.175	% Recov	06/14/05	70.000	130.000	
MSD	Cadmium	7440-43-9	35.55	88.875	% Recov	06/14/05	70.000	130.000	
MSD	Chromium	7440-47-3	37.47	93.675	% Recov	06/14/05	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 06/07/05
Receive Date:06/07/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Copper	7440-50-8	33.85	84.625	% Recov	06/14/05	70.000	130.000	
MSD	Mercury	7439-97-6	2.027	101.350	% Recov	06/14/05	70.000	130.000	
MSD	Manganese	7439-96-5	37.5	93.750	% Recov	06/14/05	70.000	130.000	
MSD	Molybdenum	7439-98-7	39.855	99.637	% Recov	06/14/05	70.000	130.000	
MSD	Nickel	7440-02-0	35.264	88.160	% Recov	06/14/05	70.000	130.000	
MSD	Lead	7439-92-1	41.19	102.975	% Recov	06/14/05	70.000	130.000	
MSD	Antimony	7440-36-0	44.38	110.950	% Recov	06/14/05	70.000	130.000	
MSD	Selenium	7782-49-2	31.746	79.365	% Recov	06/14/05	70.000	130.000	
MSD	Tin	7440-31-5	39.78	99.450	% Recov	06/14/05	70.000	130.000	
MSD	Strontium	7440-24-6	NA	n/a	% Recov	06/14/05	70.000	130.000	
MSD	Thallium	7440-28-0	39.88	99.700	% Recov	06/14/05	70.000	130.000	
MSD	Uranium	7440-61-1	42.887	107.218	% Recov	06/14/05	70.000	130.000	
MSD	Vanadium	7440-62-2	39.73	99.325	% Recov	06/14/05	70.000	130.000	
MSD	Zinc	7440-66-6	29.89	74.725	% Recov	06/14/05	70.000	130.000	
SPK-RPD	Silver	7440-22-4	92.225	2.915	RPD	06/14/05	0.000	20.000	
SPK-RPD	Arsenic	7440-38-2	90.800	0.469	RPD	06/14/05	0.000	20.000	
SPK-RPD	Barium	7440-39-3	98.950	6.792	RPD	06/14/05	0.000	20.000	
SPK-RPD	Beryllium	7440-41-7	96.175	0.835	RPD	06/14/05	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	88.875	2.017	RPD	06/14/05	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	93.675	1.982	RPD	06/14/05	0.000	20.000	
SPK-RPD	Copper	7440-50-8	84.625	0.501	RPD	06/14/05	0.000	20.000	
SPK-RPD	Mercury	7439-97-6	101.350	0.445	RPD	06/14/05	0.000	20.000	
SPK-RPD	Manganese	7439-96-5	93.750	1.478	RPD	06/14/05	0.000	20.000	
SPK-RPD	Molybdenum	7439-98-7	99.637	1.262	RPD	06/14/05	0.000	20.000	
SPK-RPD	Nickel	7440-02-0	88.160	0.683	RPD	06/14/05	0.000	20.000	
SPK-RPD	Lead	7439-92-1	102.975	0.389	RPD	06/14/05	0.000	20.000	
SPK-RPD	Antimony	7440-36-0	110.950	1.659	RPD	06/14/05	0.000	20.000	
SPK-RPD	Selenium	7782-49-2	79.365	1.364	RPD	06/14/05	0.000	20.000	
SPK-RPD	Tin	7440-31-5	99.450	3.192	RPD	06/14/05	0.000	20.000	
SPK-RPD	Strontium	7440-24-6	95.000	16.216	RPD	06/14/05	0.000	20.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date: 06/07/05
Receive Date:06/07/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Thallium	7440-28-0	99.700	0.831	RPD	06/14/05	0.000	20.000	
SPK-RPD	Uranium	7440-61-1	107.218	0.070	RPD	06/14/05	0.000	20.000	
SPK-RPD	Vanadium	7440-62-2	99.325	0.000	RPD	06/14/05	0.000	20.000	
SPK-RPD	Zinc	7440-66-6	74.725	5.677	RPD	06/14/05	0.000	20.000	
BATCH QC									
BLANK	Silver	7440-22-4	<0.1	n/a	ug/L	06/14/05			U
BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L	06/14/05			U
BLANK	Barium	7440-39-3	<4	n/a	ug/L	06/14/05			U
BLANK	Beryllium	7440-41-7	<0.1	n/a	ug/L	06/14/05			U
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L	06/14/05			U
BLANK	Chromium	7440-47-3	<4	n/a	ug/L	06/14/05			U
BLANK	Copper	7440-50-8	<2	n/a	ug/L	06/14/05			U
BLANK	Mercury	7439-97-6	<0.1	n/a	ug/L	06/14/05			U
BLANK	Manganase	7439-96-5	<0.1	n/a	ug/L	06/14/05			U
BLANK	Molybdenum	7439-98-7	<0.3	n/a	ug/L	06/14/05			U
BLANK	Nickel	7440-02-0	<0.1	n/a	ug/L	06/14/05			U
BLANK	Lead	7439-92-1	<0.2	n/a	ug/L	06/14/05			U
BLANK	Antimony	7440-36-0	<1	n/a	ug/L	06/14/05			U
BLANK	Selenium	7782-49-2	<0.4	n/a	ug/L	06/14/05			U
BLANK	Tin	7440-31-5	<1	n/a	ug/L	06/14/05			U
BLANK	Strontium	7440-24-6	<0.2	n/a	ug/L	06/14/05			U
BLANK	Thallium	7440-28-0	<0.1	n/a	ug/L	06/14/05			U
BLANK	Uranium	7440-61-1	<0.1	n/a	ug/L	06/14/05			U
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L	06/14/05			U
BLANK	Zinc	7440-66-6	<4	n/a	ug/L	06/14/05			U
LCS	Silver	7440-22-4	38.99	97.475	% Recov	06/14/05	85.000	115.000	
LCS	Arsenic	7440-38-2	36.52	91.300	% Recov	06/14/05	85.000	115.000	
LCS	Barium	7440-39-3	40.02	100.050	% Recov	06/14/05	85.000	115.000	
LCS	Beryllium	7440-41-7	36.51	91.275	% Recov	06/14/05	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	Cadmium	7440-43-9	37.87	94.675	% Recov	06/14/05	85.000	115.000	
LCS	Chromium	7440-47-3	40.97	102.425	% Recov	06/14/05	85.000	115.000	
LCS	Copper	7440-50-8	39.83	99.575	% Recov	06/14/05	85.000	115.000	
LCS	Mercury	7439-97-6	1.903	95.150	% Recov	06/14/05	85.000	115.000	
LCS	Manganese	7439-96-5	40.89	102.225	% Recov	06/14/05	85.000	115.000	
LCS	Molybdenum	7439-98-7	39.74	99.350	% Recov	06/14/05	85.000	115.000	
LCS	Nickel	7440-02-0	39.38	98.450	% Recov	06/14/05	85.000	115.000	
LCS	Lead	7439-92-1	39.67	99.175	% Recov	06/14/05	85.000	115.000	
LCS	Antimony	7440-36-0	45.34	113.350	% Recov	06/14/05	85.000	115.000	
LCS	Selenium	7782-49-2	34.76	86.900	% Recov	06/14/05	85.000	115.000	
LCS	Tin	7440-31-5	39.28	98.200	% Recov	06/14/05	85.000	115.000	
LCS	Strontium	7440-24-6	40.07	100.175	% Recov	06/14/05	80.000	120.000	
LCS	Thallium	7440-28-0	38.5	96.250	% Recov	06/14/05	85.000	115.000	
LCS	Uranium	7440-61-1	38.61	96.525	% Recov	06/14/05	85.000	115.000	
LCS	Vanadium	7440-62-2	40.79	101.975	% Recov	06/14/05	85.000	115.000	
LCS	Zinc	7440-66-6	36.61	91.525	% Recov	06/14/05	85.000	115.000	

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ÖááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááMultiLIMSá¢
°                              SAMPLE INQUIRY - History                    HISTORY   °
ûááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
°Wl#            Bat#            ID        °Prot                                        °
°Grp 20051157   Due  12/27/05 Inst ICP407 °Para Uranium by ICP-MS                      °
°Cust Groundwater Remediation Program     °Samp Logged 06/01/05 14:21                  °
°Proj                                     °Samp Rec'd  06/01/05 14:15                  °
°Samp W050001670 Al M  Rep# 0 Mx WATER    °Samp Date   06/01/05 12:10                  °
°Samp ID  B1D7Y4       TRENT              °Samp Prep   12/21/05 08:37 Analyst          °
°Site     GPP-WATER                       °Analysis Dt 12/21/05 08:53 jfg              °
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°Öááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááá¢
û° QC Type  °Parameter° Actual     ° Found      ° Result     °Analyst °  Date  °
°ûááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááÇ
°°BLANK     °U-MS     °1           °0           °0.000000    °kdf     °12/21/05°
°°DUP       °U-MS     °n/a         °n/a         °            °kdf     °12/21/05°
°°LCS       °U-MS     °40          °44.5        °111.250000  °kdf     °12/21/05°
°°MS        °U-MS     °100         °123         °123.000000  °kdf     °12/21/05°
°°MSD       °U-MS     °n/a         °n/a         °            °kdf     °12/21/05°
°°          °         °            °            °            °        °        °
°°          °         °            °            °            °        °        °
°°          °         °            °            °            °        °        °
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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20061212
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 09/19/06
Receive Date:09/19/06

Lab ID: W060003266

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	Cadmium	7440-43-9	36.02	90.050	% Recov	70.000	130.000				10/04/06
MS	Manganese	7439-96-5	32.92	82.300	% Recov	70.000	130.000				10/04/06
MS	Lead	7439-92-1	39.22	98.050	% Recov	70.000	130.000				10/04/06
MS	Uranium	7440-61-1	41.359	103.398	% Recov	70.000	130.000				10/04/06
MSD	Cadmium	7440-43-9	36.38	90.950	% Recov	70.000	130.000				10/04/06
MSD	Manganese	7439-96-5	34.72	86.800	% Recov	70.000	130.000				10/04/06
MSD	Lead	7439-92-1	39.77	99.425	% Recov	70.000	130.000				10/04/06
MSD	Uranium	7440-61-1	41.089	102.723	% Recov	70.000	130.000				10/04/06
SPK-RPD	Cadmium	7440-43-9	90.950		RPD			0.994	20.000		10/04/06
SPK-RPD	Manganese	7439-96-5	86.800		RPD			5.322	20.000		10/04/06
SPK-RPD	Lead	7439-92-1	99.425		RPD			1.393	20.000		10/04/06
SPK-RPD	Uranium	7440-61-1	102.723		RPD			0.655	20.000		10/04/06

BATCH QC

BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	10/04/06
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	10/04/06
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	10/04/06
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	10/04/06
LCS	Cadmium	7440-43-9	37.36	93.400	% Recov	85.000	115.000				10/04/06
LCS	Manganese	7439-96-5	39.32	98.300	% Recov	85.000	115.000				10/04/06
LCS	Lead	7439-92-1	39.19	97.975	% Recov	85.000	115.000				10/04/06
LCS	Uranium	7440-61-1	38.58	96.450	% Recov	85.000	115.000				10/04/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 07/20/07
Receive Date:07/20/07

Lab ID: W07GR01863

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	Calcium	7440-70-2	NA	n/a	% Recov	75.000	125.000				07/31/07
MS	Iron	7439-89-6	976	97.600	% Recov	75.000	125.000				07/31/07
MS	Potassium	7440-09-7	10024	100.240	% Recov	75.000	125.000				07/31/07
MS	Magnesium	7439-95-4	NA	n/a	% Recov	75.000	125.000				07/31/07
MS	Sodium	7440-23-5	NA	n/a	% Recov	75.000	125.000				07/31/07
MSD	Calcium	7440-70-2	NA	n/a	% Recov	75.000	125.000				07/31/07
MSD	Iron	7439-89-6	1085	108.500	% Recov	75.000	125.000				07/31/07
MSD	Potassium	7440-09-7	10694	106.940	% Recov	75.000	125.000				07/31/07
MSD	Magnesium	7439-95-4	NA	n/a	% Recov	75.000	125.000				07/31/07
MSD	Sodium	7440-23-5	NA	n/a	% Recov	75.000	125.000				07/31/07
SPK-RPD	Calcium	7440-70-2			RPD			n/a	20.000		07/31/07
SPK-RPD	Iron	7439-89-6	108.500		RPD			10.577	20.000		07/31/07
SPK-RPD	Potassium	7440-09-7	106.940		RPD			6.468	20.000		07/31/07
SPK-RPD	Magnesium	7439-95-4			RPD			n/a	20.000		07/31/07
SPK-RPD	Sodium	7440-23-5			RPD			n/a	20.000		07/31/07

BATCH QC

BLANK	Calcium	7440-70-2	<34	n/a	ug/L					U	07/31/07
BLANK	Iron	7439-89-6	16.8	16.800	ug/L						07/31/07
BLANK	Potassium	7440-09-7	<45	n/a	ug/L					U	07/31/07
BLANK	Magnesium	7439-95-4	<6	n/a	ug/L					U	07/31/07
BLANK	Sodium	7440-23-5	<27	n/a	ug/L					U	07/31/07
LCS	Calcium	7440-70-2	1019	101.900	% Recov	80.000	120.000				07/31/07
LCS	Iron	7439-89-6	1003	100.300	% Recov	80.000	120.000				07/31/07
LCS	Potassium	7440-09-7	9570	95.700	% Recov	80.000	120.000				07/31/07
LCS	Magnesium	7439-95-4	995.4	99.540	% Recov	80.000	120.000				07/31/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
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	Sodium	7440-23-5	986	98.600	% Recov	80.000	120.000				07/31/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 06/25/07
Receive Date:06/25/07

Lab ID: W07GR01488
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	Arsenic	7440-38-2	36.773	91.933	% Recov	70.000	130.000				07/18/07
MS	Cadmium	7440-43-9	36.35	90.875	% Recov	70.000	130.000				07/18/07
MS	Chromium	7440-47-3	36.1	90.250	% Recov	70.000	130.000				07/18/07
MS	Manganese	7439-96-5	34.64	86.600	% Recov	70.000	130.000				07/18/07
MS	Nickel	7440-02-0	35.2414	88.103	% Recov	70.000	130.000				07/18/07
MS	Lead	7439-92-1	39.9	99.750	% Recov	70.000	130.000				07/18/07
MS	Antimony	7440-36-0	45.43	113.575	% Recov	70.000	130.000				07/18/07
MS	Uranium	7440-61-1	39.561	98.903	% Recov	70.000	130.000				07/18/07
MS	Vanadium	7440-62-2	36.652	91.630	% Recov	70.000	130.000				07/18/07
MSD	Arsenic	7440-38-2	37.093	92.733	% Recov	70.000	130.000				07/18/07
MSD	Cadmium	7440-43-9	36.91	92.275	% Recov	70.000	130.000				07/18/07
MSD	Chromium	7440-47-3	36.62	91.550	% Recov	70.000	130.000				07/18/07
MSD	Manganese	7439-96-5	35.54	88.850	% Recov	70.000	130.000				07/18/07
MSD	Nickel	7440-02-0	35.4814	88.704	% Recov	70.000	130.000				07/18/07
MSD	Lead	7439-92-1	40.36	100.900	% Recov	70.000	130.000				07/18/07
MSD	Antimony	7440-36-0	45.92	114.800	% Recov	70.000	130.000				07/18/07
MSD	Uranium	7440-61-1	39.821	99.552	% Recov	70.000	130.000				07/18/07
MSD	Vanadium	7440-62-2	36.442	91.105	% Recov	70.000	130.000				07/18/07
SPK-RPD	Arsenic	7440-38-2	92.733		RPD			0.866	20.000		07/18/07
SPK-RPD	Cadmium	7440-43-9	92.275		RPD			1.529	20.000		07/18/07
SPK-RPD	Chromium	7440-47-3	91.550		RPD			1.430	20.000		07/18/07
SPK-RPD	Manganese	7439-96-5	88.850		RPD			2.565	20.000		07/18/07
SPK-RPD	Nickel	7440-02-0	88.704		RPD			0.680	20.000		07/18/07
SPK-RPD	Lead	7439-92-1	100.900		RPD			1.146	20.000		07/18/07
SPK-RPD	Antimony	7440-36-0	114.800		RPD			1.073	20.000		07/18/07
SPK-RPD	Uranium	7440-61-1	99.552		RPD			0.654	20.000		07/18/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 06/25/07
Receive Date:06/25/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
SPK-RPD	Vanadium	7440-62-2	91.105		RPD			0.575	20.000		07/18/07

Lab ID: W07GR01526
BATCH QC ASSOCIATED WITH SAMPLE

MS	Arsenic	7440-38-2	38.137	95.343	% Recov	70.000	130.000				07/18/07
MS	Cadmium	7440-43-9	36.95	92.375	% Recov	70.000	130.000				07/18/07
MS	Chromium	7440-47-3	37.6468	94.117	% Recov	70.000	130.000				07/18/07
MS	Manganese	7439-96-5	37.42	93.550	% Recov	70.000	130.000				07/18/07
MS	Nickel	7440-02-0	37.3927	93.482	% Recov	70.000	130.000				07/18/07
MS	Antimony	7440-36-0	45.67	114.175	% Recov	70.000	130.000				07/18/07
MS	Vanadium	7440-62-2	37.666	94.165	% Recov	70.000	130.000				07/18/07
MSD	Arsenic	7440-38-2	37.197	92.993	% Recov	70.000	130.000				07/18/07
MSD	Cadmium	7440-43-9	36.4	91.000	% Recov	70.000	130.000				07/18/07
MSD	Chromium	7440-47-3	37.0368	92.592	% Recov	70.000	130.000				07/18/07
MSD	Manganese	7439-96-5	36.74	91.850	% Recov	70.000	130.000				07/18/07
MSD	Nickel	7440-02-0	36.8927	92.232	% Recov	70.000	130.000				07/18/07
MSD	Antimony	7440-36-0	45	112.500	% Recov	70.000	130.000				07/18/07
MSD	Vanadium	7440-62-2	37.206	93.015	% Recov	70.000	130.000				07/18/07
SPK-RPD	Arsenic	7440-38-2	92.993		RPD			2.496	20.000		07/18/07
SPK-RPD	Cadmium	7440-43-9	91.000		RPD			1.500	20.000		07/18/07
SPK-RPD	Chromium	7440-47-3	92.592		RPD			1.634	20.000		07/18/07
SPK-RPD	Manganese	7439-96-5	91.850		RPD			1.834	20.000		07/18/07
SPK-RPD	Nickel	7440-02-0	92.232		RPD			1.346	20.000		07/18/07
SPK-RPD	Antimony	7440-36-0	112.500		RPD			1.478	20.000		07/18/07
SPK-RPD	Vanadium	7440-62-2	93.015		RPD			1.229	20.000		07/18/07

BATCH QC

BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	07/18/07
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	07/18/07
BLANK	Chromium	7440-47-3	0.582	0.582	ug/L						07/18/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
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
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	07/18/07
BLANK	Nickel	7440-02-0	<0.2	n/a	ug/L					U	07/18/07
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	07/18/07
BLANK	Antimony	7440-36-0	<0.3	n/a	ug/L					U	07/18/07
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	07/18/07
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L					U	07/18/07
LCS	Arsenic	7440-38-2	36.55	91.375	% Recov	85.000	115.000				07/18/07
LCS	Cadmium	7440-43-9	37.05	92.625	% Recov	85.000	115.000				07/18/07
LCS	Chromium	7440-47-3	38.28	95.700	% Recov	85.000	115.000				07/18/07
LCS	Manganese	7439-96-5	37.74	94.350	% Recov	85.000	115.000				07/18/07
LCS	Nickel	7440-02-0	38.36	95.900	% Recov	85.000	115.000				07/18/07
LCS	Lead	7439-92-1	38.97	97.425	% Recov	85.000	115.000				07/18/07
LCS	Antimony	7440-36-0	44.79	111.975	% Recov	85.000	115.000				07/18/07
LCS	Uranium	7440-61-1	37.53	93.825	% Recov	85.000	115.000				07/18/07
LCS	Vanadium	7440-62-2	37.75	94.375	% Recov	85.000	115.000				07/18/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
Matrix: WATER
Test: Technetium by ICP-MS

Sample Date: 07/09/07
Receive Date:07/09/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR01729											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Technetium by ICP-MS	7440-26-8	.191	94.089	% Recov	70.000	130.000				07/25/07
MSD	Technetium by ICP-MS	7440-26-8	.192	94.581	% Recov	70.000	130.000				07/25/07
SPK-RPD	Technetium by ICP-MS	7440-26-8	94.581		RPD			0.522	20.000		07/25/07
BATCH QC											
BLANK	Technetium by ICP-MS	7440-26-8	< .001	n/a	ug/L	-999.000	999.000			U	07/25/07
LCS	Technetium by ICP-MS	7440-26-8	.2011	99.064	% Recov	85.000	115.000				07/25/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071433
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 08/09/07
Receive Date:08/09/07

Lab ID: W07GR02099

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	Calcium	7440-70-2	NA	n/a	% Recov	75.000	125.000				08/31/07
MS	Iron	7439-89-6	959.3	95.930	% Recov	75.000	125.000				08/31/07
MS	Potassium	7440-09-7	9792	97.920	% Recov	75.000	125.000				08/31/07
MS	Magnesium	7439-95-4	NA	n/a	% Recov	75.000	125.000				08/31/07
MS	Sodium	7440-23-5	NA	n/a	% Recov	75.000	125.000				08/31/07
MSD	Calcium	7440-70-2	NA	n/a	% Recov	75.000	125.000				08/31/07
MSD	Iron	7439-89-6	951	95.100	% Recov	75.000	125.000				08/31/07
MSD	Potassium	7440-09-7	9832	98.320	% Recov	75.000	125.000				08/31/07
MSD	Magnesium	7439-95-4	NA	n/a	% Recov	75.000	125.000				08/31/07
MSD	Sodium	7440-23-5	NA	n/a	% Recov	75.000	125.000				08/31/07
SPK-RPD	Calcium	7440-70-2			RPD			n/a	20.000		08/31/07
SPK-RPD	Iron	7439-89-6	95.100		RPD			0.869	20.000		08/31/07
SPK-RPD	Potassium	7440-09-7	98.320		RPD			0.408	20.000		08/31/07
SPK-RPD	Magnesium	7439-95-4			RPD			n/a	20.000		08/31/07
SPK-RPD	Sodium	7440-23-5			RPD			n/a	20.000		08/31/07

BATCH QC

BLANK	Calcium	7440-70-2	<34	n/a	ug/L					U	08/31/07
BLANK	Iron	7439-89-6	16.5	16.500	ug/L						08/31/07
BLANK	Potassium	7440-09-7	<45	n/a	ug/L					U	08/31/07
BLANK	Magnesium	7439-95-4	<6	n/a	ug/L					U	08/31/07
BLANK	Sodium	7440-23-5	<27	n/a	ug/L					U	08/31/07
LCS	Calcium	7440-70-2	1029	102.900	% Recov	80.000	120.000				08/31/07
LCS	Iron	7439-89-6	972.8	97.280	% Recov	80.000	120.000				08/31/07
LCS	Potassium	7440-09-7	9781	97.810	% Recov	80.000	120.000				08/31/07
LCS	Magnesium	7439-95-4	946.2	94.620	% Recov	80.000	120.000				08/31/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20071433
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	Sodium	7440-23-5	936.8	93.680	% Recov	80.000	120.000				08/31/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071433
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 08/08/07
Receive Date:08/08/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02074											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	31.2349	78.087	% Recov	70.000	130.000				08/22/07
MS	Cadmium	7440-43-9	33.26	83.150	% Recov	70.000	130.000				08/22/07
MS	Chromium	7440-47-3	33.4429	83.607	% Recov	70.000	130.000				08/22/07
MS	Manganese	7439-96-5	32.56	81.400	% Recov	70.000	130.000				08/22/07
MS	Nickel	7440-02-0	33.6598	84.149	% Recov	70.000	130.000				08/22/07
MS	Antimony	7440-36-0	40.1495	100.374	% Recov	70.000	130.000				08/22/07
MS	Vanadium	7440-62-2	33.193	82.982	% Recov	70.000	130.000				08/22/07
MSD	Arsenic	7440-38-2	38.7949	96.987	% Recov	70.000	130.000				08/22/07
MSD	Cadmium	7440-43-9	37.6	94.000	% Recov	70.000	130.000				08/22/07
MSD	Chromium	7440-47-3	36.9629	92.407	% Recov	70.000	130.000				08/22/07
MSD	Manganese	7439-96-5	37.48	93.700	% Recov	70.000	130.000				08/22/07
MSD	Nickel	7440-02-0	37.0598	92.650	% Recov	70.000	130.000				08/22/07
MSD	Antimony	7440-36-0	44.4595	111.149	% Recov	70.000	130.000				08/22/07
MSD	Vanadium	7440-62-2	37.033	92.582	% Recov	70.000	130.000				08/22/07
SPK-RPD	Arsenic	7440-38-2	96.987		RPD			21.591	20.000 *		08/22/07
SPK-RPD	Cadmium	7440-43-9	94.000		RPD			12.250	20.000		08/22/07
SPK-RPD	Chromium	7440-47-3	92.407		RPD			9.999	20.000		08/22/07
SPK-RPD	Manganese	7439-96-5	93.700		RPD			14.049	20.000		08/22/07
SPK-RPD	Nickel	7440-02-0	92.650		RPD			9.617	20.000		08/22/07
SPK-RPD	Antimony	7440-36-0	111.149		RPD			10.188	20.000		08/22/07
SPK-RPD	Vanadium	7440-62-2	92.582		RPD			10.936	20.000		08/22/07
Lab ID: W07GR02077											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Arsenic	7440-38-2	31.0225	77.556	% Recov	70.000	130.000				08/22/07
MS	Cadmium	7440-43-9	31.63	79.075	% Recov	70.000	130.000				08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20071433
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 08/08/07
Receive Date:08/08/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	Chromium	7440-47-3	32.515	81.287	% Recov	70.000	130.000				08/22/07
MS	Manganese	7439-96-5	32.74	81.850	% Recov	70.000	130.000				08/22/07
MS	Nickel	7440-02-0	31.687	79.218	% Recov	70.000	130.000				08/22/07
MS	Lead	7439-92-1	35.85	89.625	% Recov	70.000	130.000				08/22/07
MS	Antimony	7440-36-0	39.4041	98.510	% Recov	70.000	130.000				08/22/07
MS	Uranium	7440-61-1	35.878	89.695	% Recov	70.000	130.000				08/22/07
MS	Vanadium	7440-62-2	32.763	81.907	% Recov	70.000	130.000				08/22/07
MSD	Arsenic	7440-38-2	35.7125	89.281	% Recov	70.000	130.000				08/22/07
MSD	Cadmium	7440-43-9	35.21	88.025	% Recov	70.000	130.000				08/22/07
MSD	Chromium	7440-47-3	34.975	87.438	% Recov	70.000	130.000				08/22/07
MSD	Manganese	7439-96-5	39.44	98.600	% Recov	70.000	130.000				08/22/07
MSD	Nickel	7440-02-0	33.817	84.543	% Recov	70.000	130.000				08/22/07
MSD	Lead	7439-92-1	38.09	95.225	% Recov	70.000	130.000				08/22/07
MSD	Antimony	7440-36-0	43.4441	108.610	% Recov	70.000	130.000				08/22/07
MSD	Uranium	7440-61-1	38.158	95.395	% Recov	70.000	130.000				08/22/07
MSD	Vanadium	7440-62-2	36.033	90.082	% Recov	70.000	130.000				08/22/07
SPK-RPD	Arsenic	7440-38-2	89.281		RPD			14.056	20.000		08/22/07
SPK-RPD	Cadmium	7440-43-9	88.025		RPD			10.712	20.000		08/22/07
SPK-RPD	Chromium	7440-47-3	87.438		RPD			7.291	20.000		08/22/07
SPK-RPD	Manganese	7439-96-5	98.600		RPD			18.565	20.000		08/22/07
SPK-RPD	Nickel	7440-02-0	84.543		RPD			6.503	20.000		08/22/07
SPK-RPD	Lead	7439-92-1	95.225		RPD			6.059	20.000		08/22/07
SPK-RPD	Antimony	7440-36-0	108.610		RPD			9.753	20.000		08/22/07
SPK-RPD	Uranium	7440-61-1	95.395		RPD			6.159	20.000		08/22/07
SPK-RPD	Vanadium	7440-62-2	90.082		RPD			9.506	20.000		08/22/07

BATCH QC

BLANK	Arsenic	7440-38-2	<0.4	n/a	ug/L					U	08/22/07
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	08/22/07
BLANK	Chromium	7440-47-3	<0.5	n/a	ug/L					U	08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20071433
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
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	08/22/07
BLANK	Nickel	7440-02-0	<0.2	n/a	ug/L					U	08/22/07
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	08/22/07
BLANK	Antimony	7440-36-0	<0.3	n/a	ug/L					U	08/22/07
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	08/22/07
BLANK	Vanadium	7440-62-2	<0.2	n/a	ug/L					U	08/22/07
LCS	Arsenic	7440-38-2	35.28	88.200	% Recov	85.000	115.000				08/22/07
LCS	Cadmium	7440-43-9	36.2	90.500	% Recov	85.000	115.000				08/22/07
LCS	Chromium	7440-47-3	37.23	93.075	% Recov	85.000	115.000				08/22/07
LCS	Manganese	7439-96-5	37.05	92.625	% Recov	85.000	115.000				08/22/07
LCS	Nickel	7440-02-0	37.23	93.075	% Recov	85.000	115.000				08/22/07
LCS	Lead	7439-92-1	37.07	92.675	% Recov	85.000	115.000				08/22/07
LCS	Antimony	7440-36-0	43.19	107.975	% Recov	85.000	115.000				08/22/07
LCS	Uranium	7440-61-1	36.28	90.700	% Recov	85.000	115.000				08/22/07
LCS	Vanadium	7440-62-2	36.62	91.550	% Recov	85.000	115.000				08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071433
Matrix: WATER
Test: TC99 screen by ICP-200.8 MS

Sample Date: 08/13/07
Receive Date:08/13/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02135											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Technetium screen by ICP-MS	7440-26-8-SCRN	0.19	95.000	% Recov	70.000	130.000				09/05/07
MSD	Technetium screen by ICP-MS	7440-26-8-SCRN	0.2	100.000	% Recov	70.000	130.000				09/05/07
SPK-RPD	Technetium screen by ICP-MS	7440-26-8-SCRN	100.000		RPD			5.128	20.000		09/05/07
BATCH QC											
BLANK	Technetium screen by ICP-MS	7440-26-8-SCRN	<1e-3	n/a	ug/L					U	09/05/07
LCS	Technetium screen by ICP-MS	7440-26-8-SCRN	0.21	105.000	% Recov	49.000	125.000				09/05/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071455
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 08/08/07
Receive Date:08/08/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02074											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cadmium	7440-43-9	33.26	83.150	% Recov	70.000	130.000				08/22/07
MS	Manganese	7439-96-5	32.56	81.400	% Recov	70.000	130.000				08/22/07
MSD	Cadmium	7440-43-9	37.6	94.000	% Recov	70.000	130.000				08/22/07
MSD	Manganese	7439-96-5	37.48	93.700	% Recov	70.000	130.000				08/22/07
SPK-RPD	Cadmium	7440-43-9	94.000		RPD			12.250	20.000		08/22/07
SPK-RPD	Manganese	7439-96-5	93.700		RPD			14.049	20.000		08/22/07
Lab ID: W07GR02077											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cadmium	7440-43-9	31.63	79.075	% Recov	70.000	130.000				08/22/07
MS	Manganese	7439-96-5	32.74	81.850	% Recov	70.000	130.000				08/22/07
MS	Lead	7439-92-1	35.85	89.625	% Recov	70.000	130.000				08/22/07
MS	Uranium	7440-61-1	35.878	89.695	% Recov	70.000	130.000				08/22/07
MSD	Cadmium	7440-43-9	35.21	88.025	% Recov	70.000	130.000				08/22/07
MSD	Manganese	7439-96-5	39.44	98.600	% Recov	70.000	130.000				08/22/07
MSD	Lead	7439-92-1	38.09	95.225	% Recov	70.000	130.000				08/22/07
MSD	Uranium	7440-61-1	38.158	95.395	% Recov	70.000	130.000				08/22/07
SPK-RPD	Cadmium	7440-43-9	88.025		RPD			10.712	20.000		08/22/07
SPK-RPD	Manganese	7439-96-5	98.600		RPD			18.565	20.000		08/22/07
SPK-RPD	Lead	7439-92-1	95.225		RPD			6.059	20.000		08/22/07
SPK-RPD	Uranium	7440-61-1	95.395		RPD			6.159	20.000		08/22/07
BATCH QC											
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	08/22/07
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	08/22/07
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20071455
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
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	08/22/07
LCS	Cadmium	7440-43-9	36.2	90.500	% Recov	85.000	115.000				08/22/07
LCS	Manganese	7439-96-5	37.05	92.625	% Recov	85.000	115.000				08/22/07
LCS	Lead	7439-92-1	37.07	92.675	% Recov	85.000	115.000				08/22/07
LCS	Uranium	7440-61-1	36.28	90.700	% Recov	85.000	115.000				08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20072125
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 11/09/07
Receive Date:11/12/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02902											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cadmium	7440-43-9	36.62	91.550	% Recov	70.000	130.000				12/07/07
MS	Manganese	7439-96-5	37.02	92.550	% Recov	70.000	130.000				12/07/07
MS	Uranium	7440-61-1	37.5654	93.913	% Recov	70.000	130.000				12/07/07
MSD	Cadmium	7440-43-9	37.37	93.425	% Recov	70.000	130.000				12/07/07
MSD	Manganese	7439-96-5	38.37	95.925	% Recov	70.000	130.000				12/07/07
MSD	Uranium	7440-61-1	38.4354	96.088	% Recov	70.000	130.000				12/07/07
SPK-RPD	Cadmium	7440-43-9	93.425		RPD			2.027	20.000		12/07/07
SPK-RPD	Manganese	7439-96-5	95.925		RPD			3.581	20.000		12/07/07
SPK-RPD	Uranium	7440-61-1	96.088		RPD			2.289	20.000		12/07/07
Lab ID: W07GR02904											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Cadmium	7440-43-9	36.66	91.650	% Recov	70.000	130.000				12/07/07
MS	Manganese	7439-96-5	36.867	92.167	% Recov	70.000	130.000				12/07/07
MS	Lead	7439-92-1	37.54	93.850	% Recov	70.000	130.000				12/07/07
MS	Uranium	7440-61-1	35.36	88.400	% Recov	70.000	130.000				12/07/07
MSD	Cadmium	7440-43-9	37.29	93.225	% Recov	70.000	130.000				12/07/07
MSD	Manganese	7439-96-5	37.797	94.492	% Recov	70.000	130.000				12/07/07
MSD	Lead	7439-92-1	38.36	95.900	% Recov	70.000	130.000				12/07/07
MSD	Uranium	7440-61-1	36.32	90.800	% Recov	70.000	130.000				12/07/07
SPK-RPD	Cadmium	7440-43-9	93.225		RPD			1.704	20.000		12/07/07
SPK-RPD	Manganese	7439-96-5	94.492		RPD			2.491	20.000		12/07/07
SPK-RPD	Lead	7439-92-1	95.900		RPD			2.161	20.000		12/07/07
SPK-RPD	Uranium	7440-61-1	90.800		RPD			2.679	20.000		12/07/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20072125
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
BATCH QC											
BLANK	Cadmium	7440-43-9	<0.1	n/a	ug/L					U	12/07/07
BLANK	Manganese	7439-96-5	<0.1	n/a	ug/L					U	12/07/07
BLANK	Lead	7439-92-1	<0.1	n/a	ug/L					U	12/07/07
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	12/07/07
LCS	Cadmium	7440-43-9	36.7	91.750	% Recov	85.000	115.000				12/07/07
LCS	Manganese	7439-96-5	36.87	92.175	% Recov	85.000	115.000				12/07/07
LCS	Lead	7439-92-1	37.87	94.675	% Recov	85.000	115.000				12/07/07
LCS	Uranium	7440-61-1	36.03	90.075	% Recov	85.000	115.000				12/07/07

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90678
Project Number F09-009

QC Batch 54198
Associated Samples 90678001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #11384**							
Chromium	7440-47-3		<0.50	ug/L					U	07/15/09
Uranium	7440-61-1		<0.050	ug/L					U	07/15/09
LCS			**QC Sample #11385**							
Chromium	7440-47-3		41.3	ug/L	103.3	85 - 115				07/15/09
Uranium	7440-61-1		42.8	ug/L	107.1	85 - 115				07/15/09
MS			**QC Sample #11386**							
			Original 90682001							
Chromium	7440-47-3		37.8	ug/L	94.6	70 - 130				07/15/09
Uranium	7440-61-1		52.1	ug/L	130.2	70 - 130			X1	07/15/09
MSD			**QC Sample #11387**							
			Original 90682001					**Paired**	**11386**	
Chromium	7440-47-3		37.4	ug/L	93.6	70 - 130	1.10	20		07/15/09
Uranium	7440-61-1		51.6	ug/L	129	70 - 130	0.90	20	X1	07/15/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90895

QC Batch 60435
Associated Samples 90895001

Test ICP-2008 MS All possible metal

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13728**							
Chromium	7440-47-3		<0.50	ug/L					U	08/27/09
Uranium	7440-61-1		<0.050	ug/L					U	08/27/09
LCS			**QC Sample #13729**							
Chromium	7440-47-3		38.7	ug/L	96.7	85 - 115				08/27/09
Uranium	7440-61-1		39.9	ug/L	99.8	85 - 115				08/27/09
MS			**QC Sample #13730**							
			Original 90864001							
Chromium	7440-47-3		38.3	ug/L	95.8	70 - 130				08/27/09
Uranium	7440-61-1		43.9	ug/L	109.6	70 - 130				08/27/09
MSD			**QC Sample #13731**							
			Original 90864001					**Paired**	**13730**	
Chromium	7440-47-3		37.9	ug/L	94.8	70 - 130	1.00	20		08/27/09
Uranium	7440-61-1		43.9	ug/L	109.8	70 - 130	0.20	20		08/27/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90900
Project Number F09-043

QC Batch 58238
Associated Samples 90900001, 90900002

Test Technicium-99 by ICP MS

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13354**							
Technetium-99	14133-76-7		<0.0010	ug/L					U	08/18/09
LCS			**QC Sample #13355**							
Technetium-99	14133-76-7		0.042	ug/L	96.7	49 - 125				08/18/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF91148

QC Batch 64544
Associated Samples 91148001

Test Technicium-99 by ICP MS

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #15707**							
Technetium-99	14133-76-7		<0.0010	ug/L					U	09/25/09
LCS			**QC Sample #15708**							
Technetium-99	14133-76-7		0.043	ug/L	97.9	49 - 125				09/25/09

Date: 14 April 2010
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: CPP 200 Area, 200 Area SGRP, and 200 Area
Subject: General Chemistry - Sample Data Groups (SDGs) WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90900 and WSCF91148

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90900 and WSCF91148 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
B1BJC2	11/22/2004	Water	C	See note 1
B1BJD9	12/07/2004	Water	C	See note 1
B1BJH6	1/25/2005	Water	C	See note 1
B1D7K5	6/01/2005	Water	C	See note 2
B1JX48	10/02/2006	Water	C	See note 3
B1L952	7/12/2007	Water	C	See note 4
B1L965	8/13/2007	Water	C	See note 4
B1P0X1	8/15/2007	Water	C	See note 3
B1P0M7	11/29/2007	Water	C	See note 3
B21F31	8/18/2009	Water	C	See note 5
B21F32	8/18/2009	Water	C	See note 5
B21FV4	9/25/2009	Water	C	See note 5

1 – 150.1 (pH); 300.0 (chloride, fluoride, nitrate, nitrite, phosphate and sulfate); 300.7 (ammonia); 335.2 (total cyanide); 7196 (hexavalent chromium)
2 – 150.1 (pH); 300.0 (chloride, fluoride, nitrate, nitrite, phosphate and sulfate); 300.7 (ammonia); 7196 (hexavalent chromium)
3 – 300.0 (fluoride and nitrate); 7196A (hexavalent chromium)
4 – 300.0 (chloride, fluoride, nitrate, nitrite, and sulfate); 2320B (alkalinity); 7196 (hexavalent chromium)
5 – 300.0 (nitrate); 7196 (hexavalent chromium)

Data validation was conducted in accordance with the CHPRC validation statement of work and the following sampling and analysis plans (SAPs).

Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network, DOE/RL-2002-17, Rev. 0.

Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant, DOE/RL-2006-19, Rev. 0.

Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006, DOE/RL-2006-46, Rev. 0.

Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit, DOE/RL-2008-57, Rev. 1.

Appendices 1 through 6 provide the following information as indicated below:

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

DATA QUALITY OBJECTIVES

- **Holding Times and Sample Preservation**

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

- All anions except nitrate, nitrite, and phosphate – analysis within 28 days of sample collection
- Nitrate, nitrite, and phosphate – analysis within 48 hours of sample collection
- Nitrogen in ammonium – analysis within 28 days of sample collection
- Alkalinity – analysis within 14 days of sample collection
- Chromium(VI) – analysis within 24 hours of extraction
- pH – analysis as soon as possible after sample collection
- Total cyanide – analysis within 14 days of sample collection

Sample preservation for the above analyses requires chilling to 4 degrees Celsius. In addition, nitrogen in ammonium is brought to pH<2 with sulfuric acid and total cyanide is brought to pH>12 with sodium hydroxide.

The samples were extracted and analyzed within the prescribed holding times and properly preserved with the following exception.

For SDG WSCF20042209, sample B1BJC2 was analyzed for pH the day after sample collection. The pH result should be qualified as an estimate and flagged “J.”

- **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 analysis.

Field Blanks

No field blanks were submitted for analysis.

Equipment Blanks

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results and laboratory control sample results. According to SAP DOE/RL-2002-17, the laboratory control sample and matrix spike accuracy limits are the ones specified in the associated U.S. EPA analytical procedures. According to SAPs DOE/RL-2006-19 and DOE/RL-2006-46, the laboratory control sample and matrix spike sample accuracy limits are 75% to 125%. The limits for reported analytes not listed in the SAPs are specified by the DV procedure.

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

All MS/MSD recoveries were acceptable.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, laboratory duplicate sample results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to SAP DOE/RL-2002-17, the RPD limits are the ones specified in the associated U.S. EPA analytical procedures. According to SAPs DOE/RL-2006-19 and DOE/RL-2006-46, the RPD limits are ±25%. 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 required detection limits with differences <1X the required detection limits no precision infraction occurred.

MS/MSD Samples

All MS/MSD RPD values were acceptable.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable.

Field Duplicate Samples

No field duplicates were submitted for analysis.

Field Split Samples

No field splits were submitted for analysis.

- **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 WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90900 and WSCF91148 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

A minor deficiency leading to qualification of the pH result for sample B1BJC2 as an estimate was due to a holding time infraction.

REFERENCES

HNF-20433, Rev. 0, *Data Validation Procedure for Chemical Analyses*, June 2004.

DOE/RL-2002-17, Rev. 0, *Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network*, June 2002.

DOE/RL-2006-19, Rev. 0, *Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant*, March 2006.

DOE/RL-2006-46, Rev. 0, *Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006*, August 2006.

DOE/RL-2008-57, Rev. 1, *Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit*, August 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

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

- **U** ─ The constituent was analyzed for 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 MDL. 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.

- **UR** ─ Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

- **R** ─ Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

Appendix 2

Summary of Data Qualification

General Chemistry Data Qualification Summary			
SDG: See Comments	Reviewer: AQA	Project: CPP 200 Area, 200 Area SGRP, and 200 Area	Page 1 of 1
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
pH	J	B1BJC2	Analysis beyond the holding time

Comments: SDGs WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90900 and WSCF91148

Appendix 3

Annotated Laboratory Reports

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic														
W040002315	B1BJC2	TRENT	57-12-5	Cyanide	WATER	LA-695-402	U	< 4.00	ug/L	1.00	4.0	12/01/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	18540-29-9	Hexavalent Chromium	WATER	LA-265-403	U	< 3.00e-03	mg/L	1.00	3.0e-03	11/23/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	NH4-N	Nitrogen in ammonium	WATER	LA-503-401		0.814	mg/L	5.00	0.015	11/23/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	PH J	pH Measurement	WATER	LA-212-402		7.75	pH	1.00	0.010	11/23/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	16984-48-8	Fluoride	WATER	LA-533-410	U	< 0.180	mg/L	10.00	0.18	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	16887-00-6	Chloride	WATER	LA-533-410		15.2	mg/L	10.00	0.34	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	NO2-N	Nitrogen in Nitrite	WATER	LA-533-410	B	0.748	mg/L	10.00	0.060	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	NO3-N	Nitrogen in Nitrate	WATER	LA-533-410		198	mg/L	5.01e+002	11	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	PO4-P	Phosphate (P) by IC	WATER	LA-533-410	U	< 0.780	mg/L	10.00	0.78	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	14808-79-8	Sulfate	WATER	LA-533-410		27.3	mg/L	10.00	1.5	11/22/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7429-90-5	Aluminum	WATER	LA-505-411		76.0	ug/L	1.00	27	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-89-6	Iron	WATER	LA-505-411	U	< 21.0	ug/L	1.00	21	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-95-4	Magnesium	WATER	LA-505-411		5.60e+04	ug/L	10.00	1.9e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-02-0	Nickel	WATER	LA-505-411		3.60	ug/L	1.00	1.4	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-09-7	Potassium	WATER	LA-505-411		1.02e+04	ug/L	1.00	1.1e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-22-4	Silver	WATER	LA-505-411	E	4.50	ug/L	1.00	1.8	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-23-5	Sodium	WATER	LA-505-411		1.04e+05	ug/L	10.00	2.0e+03	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-70-2	Calcium	WATER	LA-505-411		1.83e+05	ug/L	10.00	1.6e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-93-2	Lithium	WATER	LA-505-411		14.6	ug/L	1.00	1.0	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-42-8	Boron	WATER	LA-505-411	U	< 26.0	ug/L	1.00	26	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-21-3	Silicon	WATER	LA-505-411		1.80e+04	ug/L	10.00	1.7e+02	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7723-14-0	Phosphorus	WATER	LA-505-411		85.2	ug/L	1.00	48	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7782-49-2	Selenium	WATER	LA-505-411	C	66.4	ug/L	1.00	18	12/08/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7439-96-5	Manganese	WATER	LA-505-412		261	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-02-0	Nickel	WATER	LA-505-412		4.66	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04
W040002315	B1BJC2	TRENT	7440-22-4	Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/13/04	11/22/04	11/22/04

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
E - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.
C - The Analyte was found in the Associated Blank.
J - Analyte is an estimate, has potentially larger errors

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
W040002540	B1BJD9	GRP	TRENT	57-12-5	Cyanide	WATER	LA-695-402	U	< 4.00	ug/L	1.00	4.0	12/08/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	18540-29-9	Hexavalent Chromium	WATER	LA-265-403	U	< 3.00e-03	mg/L	1.00	3.0e-03	12/08/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	NH4-N	Nitrogen in ammonium	WATER	LA-503-401	B	0.0234	mg/L	2.00	6.0e-03	12/08/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	PH	pH Measurement	WATER	LA-212-402		7.82	pH	1.00	0.010	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	16984-48-8	Fluoride	WATER	LA-533-410		0.328	mg/L	1.00	0.018	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	16887-00-6	Chloride	WATER	LA-533-410		12.7	mg/L	20.00	0.68	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	NO2-N	Nitrogen in Nitrite	WATER	LA-533-410	B	0.0770	mg/L	1.00	6.0e-03	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	NO3-N	Nitrogen in Nitrate	WATER	LA-533-410		14.8	mg/L	20.00	0.44	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	PO4-P	Phosphate (P) by IC	WATER	LA-533-410	U	< 0.0780	mg/L	1.00	0.078	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	14808-79-8	Sulfate	WATER	LA-533-410		24.5	mg/L	20.00	3.0	12/07/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7429-90-5	Aluminum	WATER	LA-505-411	U	< 27.0	ug/L	1.00	27	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-89-6	Iron	WATER	LA-505-411	U	< 21.0	ug/L	1.00	21	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-95-4	Magnesium	WATER	LA-505-411		1.43e+04	ug/L	1.00	19	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-02-0	Nickel	WATER	LA-505-411		1.80	ug/L	1.00	1.4	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-09-7	Potassium	WATER	LA-505-411		4.75e+03	ug/L	1.00	1.1e+02	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-22-4	Silver	WATER	LA-505-411	U	< 1.80	ug/L	1.00	1.8	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-23-5	Sodium	WATER	LA-505-411		1.72e+04	ug/L	1.00	2.0e+02	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-70-2	Calcium	WATER	LA-505-411		4.40e+04	ug/L	1.00	16	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-93-2	Lithium	WATER	LA-505-411		4.80	ug/L	1.00	1.0	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-42-8	Boron	WATER	LA-505-411	U	< 26.0	ug/L	1.00	26	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-21-3	Silicon	WATER	LA-505-411		2.18e+04	ug/L	1.00	17	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7723-14-0	Phosphorus	WATER	LA-505-411		50.5	ug/L	1.00	48	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7782-49-2	Selenium	WATER	LA-505-411	U	< 18.0	ug/L	1.00	18	12/20/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7439-96-5	Manganese	WATER	LA-505-412		78.0	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-02-0	Nickel	WATER	LA-505-412		1.19	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	7440-22-4	Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	12/21/04	12/07/04	12/07/04

LS
4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic														
W050000144	B1BJH6	TRENT	57-12-5	Cyanide	WATER	LA-695-402	U	< 4.00	ug/L	1.00	4.0	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	18540-29-9	Hexavalent Chromium	WATER	LA-265-403	U	< 3.00e-03	mg/L	1.00	3.0e-03	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	NH4-N	Nitrogen in ammonium	WATER	LA-503-401	B	0.0271	mg/L	1.00	3.0e-03	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	PH	pH Measurement	WATER	LA-212-402		7.77	pH	1.00	0.010	01/25/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	16984-48-8	Fluoride	WATER	LA-533-410		0.335	mg/L	2.00	0.036	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	16887-00-6	Chloride	WATER	LA-533-410		8.62	mg/L	20.00	0.68	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	NO2-N	Nitrogen in Nitrite	WATER	LA-533-410	U	< 0.0120	mg/L	2.00	0.012	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	NO3-N	Nitrogen in Nitrate	WATER	LA-533-410		12.5	mg/L	20.00	0.44	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	PO4-P	Phosphate (P) by IC	WATER	LA-533-410	U	< 0.156	mg/L	2.00	0.16	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	14808-79-8	Sulfate	WATER	LA-533-410		21.1	mg/L	2.00	0.30	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7429-90-5	Aluminum	WATER	LA-505-411		51.5	ug/L	1.00	27	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-89-6	Iron	WATER	LA-505-411	U	< 21.0	ug/L	1.00	21	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-95-4	Magnesium	WATER	LA-505-411		1.24e+04	ug/L	1.00	19	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-02-0	Nickel	WATER	LA-505-411		1.40	ug/L	1.00	1.4	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-09-7	Potassium	WATER	LA-505-411		4.34e+03	ug/L	1.00	1.1e+02	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-22-4	Silver	WATER	LA-505-411	U	< 1.80	ug/L	1.00	1.8	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-23-5	Sodium	WATER	LA-505-411		2.44e+04	ug/L	1.00	2.0e+02	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-70-2	Calcium	WATER	LA-505-411		3.68e+04	ug/L	1.00	16	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-93-2	Lithium	WATER	LA-505-411	C	6.20	ug/L	1.00	1.0	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-42-8	Boron	WATER	LA-505-411		29.3	ug/L	1.00	26	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-21-3	Silicon	WATER	LA-505-411		2.18e+04	ug/L	1.00	17	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7723-14-0	Phosphorus	WATER	LA-505-411	U	< 48.0	ug/L	1.00	48	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7782-49-2	Selenium	WATER	LA-505-411		23.5	ug/L	1.00	18	02/09/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7439-96-5	Manganese	WATER	LA-505-412		29.4	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-02-0	Nickel	WATER	LA-505-412		1.94	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	7440-22-4	Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	02/01/05	01/25/05	01/25/05

LS
4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
J - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
C - The Analyte was found in the Associated Blank.
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic													
W050001669	B1D7K5 TRENT	18540-29-9	Hexavalent Chromium	WATER	LA-265-403		0.0172	mg/L	1.00	3.0e-03	06/02/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	NH4-N	Nitrogen in ammonium	WATER	LA-503-401	B	0.0124	mg/L	1.00	2.0e-03	06/10/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	PH	pH Measurement	WATER	LA-212-402		7.68	pH	1.00	0.010	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	16984-48-8	Fluoride	WATER	LA-533-410	U	< 0.918	mg/L	51.00	0.92	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	16887-00-6	Chloride	WATER	LA-533-410		29.3	mg/L	51.00	1.7	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	NO2-N	Nitrogen in Nitrite	WATER	LA-533-410	U	< 0.306	mg/L	51.00	0.31	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	NO3-N	Nitrogen in Nitrate	WATER	LA-533-410		63.7	mg/L	51.00	1.1	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	PO4-P	Phosphate (P) by IC	WATER	LA-533-410	U	< 3.98	mg/L	51.00	4.0	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	14808-79-8	Sulfate	WATER	LA-533-410		59.9	mg/L	51.00	7.6	06/01/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7429-90-5	Aluminum	WATER	LA-505-411	U	< 27.0	ug/L	1.00	27	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7439-89-6	Iron	WATER	LA-505-411		39.4	ug/L	1.00	21	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7439-95-4	Magnesium	WATER	LA-505-411		3.84e+04	ug/L	1.00e+002	1.9e+03	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-09-7	Potassium	WATER	LA-505-411		6.32e+03	ug/L	1.00	1.1e+02	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-23-5	Sodium	WATER	LA-505-411		1.69e+04	ug/L	1.00	2.0e+02	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-70-2	Calcium	WATER	LA-505-411		1.09e+05	ug/L	1.00e+002	1.6e+03	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7439-93-2	Lithium	WATER	LA-505-411		11.5	ug/L	1.00	1.0	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-42-8	Boron	WATER	LA-505-411	U	< 26.0	ug/L	1.00	26	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-21-3	Silicon	WATER	LA-505-411		2.10e+04	ug/L	1.00	17	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7723-14-0	Phosphorus	WATER	LA-505-411	U	< 48.0	ug/L	1.00	48	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7439-96-5	Manganese	WATER	LA-505-412		24.0	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-02-0	Nickel	WATER	LA-505-412		1.85	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-22-4	Silver	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-36-0	Antimony	WATER	LA-505-412	U	< 1.00	ug/L	1.00	1.0	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-39-3	Barium	WATER	LA-505-412		80.1	ug/L	1.00	4.0	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-41-7	Beryllium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05
W050001669	B1D7K5 TRENT	7440-43-9	Cadmium	WATER	LA-505-412	U	< 0.100	ug/L	1.00	0.10	06/14/05	06/01/05	06/01/05

LS 4-14-2010

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
J - Analyte is an estimate, has potentially larger errors
B - The analyte < the RDL but > = the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

DF=Dilution Factor

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

Report WGPP/ver. 1.1
Groundwater Remediation Program

REVISED Dayer 1/3/06

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent A0-21
SAF Number: F06-022
Sample # W060003428
Client ID: B1JX48 TRENT WSCF

Matrix: WATER

Group #: WSCF20061212
Department: Inorganic
Sampled: 10/02/06
Received: 10/02/06

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		0.432	mg/L			1.00	5.5e-03		10/02/06
Nitrogen in Nitrate	NO3-N	LA-533-410		6.26	mg/L			10.00	0.073		10/02/06
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	U	< 2.00e-03	mg/L			1.00	2.0e-03		10/03/06
~~**ICP-200.8 MS All possible meta Prep**~~											~~10/03/06~~
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		55.0	ug/L			1.00	0.100	0.100	10/04/06
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L		LS	1.00	0.100	0.200	10/04/06
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L		4-14-2010	1.00	0.100	0.250	10/04/06
Uranium	7440-61-1	LA-505-412		0.076	ug/L			1.00	0.0500	0.100	10/04/06

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

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
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: F07-006
Sample # W07GR01755
Client ID: B1L952 TRENT WSCF

Matrix: WATER

Group #: WSCF20071194
Department: Inorganic
Sampled: 07/12/07
Received: 07/12/07

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	D	4.23	mg/L			5.00	0.030		07/13/07
Chloride	16887-00-6	LA-533-410	D	28.7	mg/L			5.00	0.15		07/13/07
Nitrogen in Nitrite	NO2-N	LA-533-410	BD	0.252	mg/L			5.00	0.050		07/13/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	292	mg/L			1.01e+002	0.50		07/13/07
Sulfate	14808-79-8	LA-533-410	D	61.9	mg/L			5.00	0.35		07/13/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403		0.162	mg/L			1.00	2.0e-03		07/12/07
~~**ICP Metals Analysis, Grd H20 P Prep**~~											~~**07/30/07**~~
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	CD	145	ug/L			5.00	45		07/31/07
Magnesium	7439-95-4	LA-505-411	D	2.68e+04	ug/L			5.00	30		07/31/07
Potassium	7440-09-7	LA-505-411	D	8.64e+03	ug/L			5.00	2.2e+02		07/31/07
Sodium	7440-23-5	LA-505-411	D	4.40e+05	ug/L			5.00	1.4e+02		07/31/07
Calcium	7440-70-2	LA-505-411	D	7.66e+04	ug/L			5.00	1.7e+02		07/31/07
ICP-200.8 MS All possible meta Prep											**07/17/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		78.1	ug/L			1.00	0.100		07/18/07
Nickel	7440-02-0	LA-505-412		2.30	ug/L			1.00	0.200		07/18/07
Antimony	7440-36-0	LA-505-412		0.314	ug/L			1.00	0.300		07/18/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100		07/18/07
Chromium	7440-47-3	LA-505-412		118	ug/L			1.00	0.500		07/18/07
Vanadium	7440-62-2	LA-505-412		27.4	ug/L			1.00	0.200		07/18/07
Lead	7439-92-1	LA-505-412		0.275	ug/L			1.00	0.100		07/18/07
Uranium	7440-61-1	LA-505-412		4.91	ug/L			1.00	0.0500		07/18/07

LS
4-14-2010

MDL=Minimum Detection Limit
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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)
U - Analyzed for but not detected above limiting criteria.(org)
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: F07-006
Sample # W07GR01755
Client ID: B1L952 TRENT WSCF

Matrix: WATER

Group #: WSCF20071194
Department: Inorganic
Sampled: 07/12/07
Received: 07/12/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
~~Arsenic~~	~~7440-38-2~~	~~LA-505-412~~		~~7.01~~	~~ug/L~~			~~1.00~~	~~0.400~~		~~07/18/07~~
Technetium by ICP-MS											
~~Technetium by ICP-MS~~	~~7440-26-8~~	~~LA-505-412~~		~~0.0144~~	~~ug/L~~			~~1.00~~	~~1.0e-03~~		~~07/25/07~~
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		180	mg/L		LS 4-14-2010	1.00	1.0		07/16/07

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)
U - Analyzed for but not detected above limiting criteria.(org)

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: F07-006
Sample # W07GR02135
Client ID: B1L965 TRENT WSCF

Matrix: WATER

Group #: WSCF20071433
Department: Inorganic
Sampled: 08/13/07
Received: 08/13/07

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		0.251	mg/L			1.00	6.0e-03		08/14/07
Chloride	16887-00-6	LA-533-410		10.1	mg/L			1.00	0.030		08/14/07
Nitrogen in Nitrite	NO2-N	LA-533-410	B	0.0239	mg/L			1.00	0.010		08/14/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	17.4	mg/L			10.00	0.050		08/14/07
Sulfate	14808-79-8	LA-533-410	D	32.7	mg/L			10.00	0.70		08/14/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403		0.0143	mg/L			1.00	2.0e-03		08/13/07
~~**ICP Metals Analysis, Grd H20 P Prep**~~											~~**08/21/07**~~
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	C	33.4	ug/L			1.00	9.0		08/31/07
Magnesium	7439-95-4	LA-505-411		1.56e+04	ug/L			1.00	6.0		08/31/07
Potassium	7440-09-7	LA-505-411		5.22e+03	ug/L			1.00	45		08/31/07
Sodium	7440-23-5	LA-505-411		1.36e+04	ug/L			1.00	27		08/31/07
Calcium	7440-70-2	LA-505-411		4.72e+04	ug/L			1.00	34		08/31/07
ICP-200.8 MS All possible meta Prep											**08/20/07**
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		26.2	ug/L			1.00	0.100		08/22/07
Nickel	7440-02-0	LA-505-412		0.648	ug/L			1.00	0.200		08/22/07
Antimony	7440-36-0	LA-505-412	U	< 0.300	ug/L			1.00	0.300		08/22/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/22/07
Chromium	7440-47-3	LA-505-412		12.3	ug/L			1.00	0.500		08/22/07
Vanadium	7440-62-2	LA-505-412		23.0	ug/L			1.00	0.200		08/22/07
Lead	7439-92-1	LA-505-412	U	< 0.100	ug/L			1.00	0.100		08/22/07
~~Uranium~~	~~7440-61-1~~	~~LA-505-412~~		~~0.698~~	~~ug/L~~			~~1.00~~	~~0.0500~~		~~08/22/07~~

LS
4-14-2010

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
C - The Analyte was found in the Associated Blank.(inorg)
E - Analyte is an estimate, has potentially larger errors(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: F07-006
Sample # W07GR02135
Client ID: B1L965 TRENT WSCF

Matrix: WATER

Group #: WSCF20071433
Department: Inorganic
Sampled: 08/13/07
Received: 08/13/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
~~Arsenic~~	~~7440-38-2~~	~~LA-505-412~~	~~E~~	~~1.23~~	~~ug/L~~			~~1.00~~	~~0.400~~		~~08/22/07~~
TC99 screen by ICP-200.8 MS Prep											**09/04/07**
TC99 screen by ICP-200.8 MS											
~~Technetium screen by ICP-MS~~	~~7440-26-8 SCRN~~	~~LA-505-412~~	~~U~~	~~< 1.00e-03~~	~~ug/L~~			~~1.00~~	~~1.0e-03~~		~~09/05/07~~
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		110	mg/L		LS 4-14-2010	1.00	1.0		08/22/07

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

C - The Analyte was found in the Associated Blank.(inorg)
E - Analyte is an estimate, has potentially larger errors(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: F07-052
Sample # W07GR02157
Client ID: B1P0X1 TRENT WSCF

Matrix: WATER

Group #: WSCF20071455
Department: Inorganic
Sampled: 08/15/07
Received: 08/15/07

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		0.296	mg/L			1.00	6.0e-03		08/15/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	13.0	mg/L			10.00	0.050		08/15/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403		4.90e-03	mg/L			1.00	2.0e-03		08/15/07
~~**ICP-200.8 MS All possible meta Prep**~~											~~08/20/07~~
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		10.9	ug/L			1.00	0.100		08/22/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L		<5 4-14-2010	1.00	0.100		08/22/07
Lead	7439-92-1	LA-505-412		0.459	ug/L			1.00	0.100		08/22/07
~~Uranium~~	~~7440-61-1~~	~~LA-505-412~~		~~0.022~~	~~ug/L~~			~~1.00~~	~~0.0500~~		~~08/22/07~~

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR03133
Client ID: B1P0M7 TRENT WSCF

Matrix: WATER

Group #: WSCF20072125
Department: Inorganic
Sampled: 11/29/07
Received: 11/29/07

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		0.210	mg/L			1.00	6.0e-03		11/30/07
Nitrogen in Nitrate	NO3-N	LA-533-410	D	43.8	mg/L			13.00	0.065		11/30/07
Hexavalent Chromium											
Hexavalent Chromium	18540-29-9	LA-265-403	B	3.00e-03	mg/L			1.00	2.0e-03		11/30/07
~~**ICP-200.8 MS All possible meta Prep**~~											~~12/06/07~~
ICP-200.8 MS All possible meta											
Manganese	7439-96-5	LA-505-412		49.1	ug/L			1.00	0.100		12/07/07
Cadmium	7440-43-9	LA-505-412	U	< 0.100	ug/L		<5	1.00	0.100		12/07/07
Lead	~~7439-92-1~~	LA-505-412	U	< 0.100	ug/L		4-14-2010	1.00	0.100		12/07/07
~~Uranium~~	~~7440-61-1~~	~~LA-505-412~~		~~1.44~~	~~ug/L~~			~~1.00~~	~~0.0500~~		~~12/07/07~~

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
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 Michael Neely
Department Inorganic

Group # WSCF90900
Project Number F09-043

Sample # 90900001
SAF# F09-043
Sample ID B21F31

Matrix WATER
Sampled 08/18/09
Received 08/18/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/19/09**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		3.01		ug/mL	1	0.031	0.10	08/19/09
Cr(VI)										**08/18/09**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00300		mg/L	1	0.0020	0.0050	08/18/09

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

B - Analyte < the RDL 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 sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF90900
Project Number F09-043

Sample # 90900002
SAF# F09-043
Sample ID B21F32

Matrix WATER
Sampled 08/18/09
Received 08/18/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/19/09**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		3.35		ug/mL	1	0.031	0.10	08/19/09
Cr(VI)										**08/18/09**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00380		mg/L	1	0.0020	0.0050	08/18/09

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

B - Analyte < the RDL 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 sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Inorganic

Group # WSCF91148

Sample # 91148001
SAF# F09-043
Sample ID B21FV4

Matrix WATER
Sampled 09/25/09
Received 09/25/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**09/25/09**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410	D	9.34		ug/mL	10	0.31	1.0	09/25/09
Cr(VI)										**09/25/09**
Cr(VI)										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	09/25/09

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

B - Analyte < the RDL 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 sample recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042209**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4303, 240' – 250', GRP samples (B1BJC2 and B1BJC9) were received at the WSCF Laboratory on November 22, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx/Gx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Strontium-89/90 and Technetium-99) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 13 through 14 for QC details. Analytical Note:

- Nitrite - Sample B1BJC2 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 20 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Selenium – The analyte was detected in the associated preparation Blank sample and evaluated. Sample B1BJC2 result was C-flagged.
- Silver – Matrix Spike and Matrix Spike Duplicate recovery were below established laboratory limits. Sample B1BJC2 was E (estimate) flagged.
- Calcium, Magnesium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 21 through 28 for QC details. Analytical Notes:

- Preparation Date: 10-dec-2004.
- Barium, Manganese, Strontium and Zinc - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Mercury – The Laboratory Control Sample recovery was below established laboratory limits. Sample B1BJC2 result was below the detection limit and not flagged.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 29 for QC details. Analytical Note:

- Duplicate QC sample was analyzed on sample# PFP04-243-93 (SDG# 20042218, a non GPP group). pH QC samples are analyzed for laboratory controls only.

All other laboratory QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 40 for QC details. Analytical Notes:

- Preparation Date: 29-nov-2004.

- Terphenyl-d14 (surrogate) – Matrix Spike Duplicate recovery was below established laboratory limits and Matrix Spike/Spike Duplicate Relative Percent Difference exceeded the laboratory limits. The sample results were not flagged.

- 2-Fluorophenol, Terphenyl-d14 and 2,4,6-Tribromophenol (surrogates) were below established limits. The Matrix Spike and Matrix Spike Duplicate were analyzed on B1BJC2 and since no target compounds were detected, the sample was not re-analyzed or flagged.

All other QC controls are within the established limits.

TPHD-WA- The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 41 for QC details. Analytical Notes:

- Preparation Date: 24-nov-2004.

- Kerosene - Matrix Spike Duplicate Relative Percent Difference exceeded established laboratory limits. All other QC control samples were within limits and sample B1BJC2 result was not flagged.

All other QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 42 through 44 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9W0 (SDG# 20042208, SAF# F03-019).

- Toluene - sample B1BJC2 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

- Toluene - sample B1BJC2 result was B; analyte was detected in the associated Blank QC sample.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 46 through 51 for QC details. Analytical Note:

- Neptunium-237 – The Laboratory Control Sample recovery was below established laboratory limits. The sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	84.4
LCS		Sr-85	96.3
B1BJC2	W040002315	Sr-85	103.1
DUPLICATE	W040002315	Sr-85	85.0

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 1 OF 3
COLLECTOR Alexander/Gent/Thomas M Elwood 11/22	COMPANY CONTACT TRENT, SJ TELEPHONE NO. 373-5869	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 7N DATA TURNAROUND
SAMPLING LOCATION 200-ZP-1, C4303; ~~220~~ ft. open hole 240-250 ft RJG 11-18-04	PROJECT DESIGNATION 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO. F04-032	AIR QUALITY ☐ 45 Days / 45 Days
ICE CHEST NO. GPP-03-017	FIELD LOGBOOK NO. COA 119325ES10	METHOD OF SHIPMENT Government Vehicle	
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE
20042209

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL RJG 11-9-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC2	WATER	11/22/04	10:00	✓✓✓	✓	✓	✓	✓	✓	✓	✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
M Elwood	11/22/04 12:30	[illegible]	11/22/04 1230
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
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-001	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N **AIR QUALITY** ☐	**DATA TURNAROUND** **45 Days**
SAMPLING LOCATION 200-ZP-1, C4303; ~~220 ft~~ open hole 240-250ft	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032		
ICE CHEST NO. GPP-03-017	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas Mahoud	COMPANY CONTACT: TRENT, SJ; TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N; AIR QUALITY: ☐; DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; 220 ft. GPP-03-017	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	
ICE CHEST NO.	FIELD LOGBOOK NO.; COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None
TYPE OF CONTAINER	P	P	P	P
NO. OF CONTAINER(S)	1	2	2	1
VOLUME	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B1BJC2	WATER	11/22/04	10:00	✓	✓✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Rowlaiwat	11/22/4 12/35	KBeebe KBeebe	11/22/04 1730
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: Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-008	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas Mahood	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4303;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
GPP-03-017		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC9	WATER	11/22/04	10:00	✓									
2004000236													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. L. Mahood	11/22/04 12:30	[illegible]	11/22/04 1230
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

Filtered

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042338**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater, C4301, 270', GRP samples (B1BJD9 and B1BJF6) were received at the WSCF Laboratory on December 07, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.

- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium), GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. Analytical Notes:

- Nitrite - Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrite – The Duplicate Relative Percent Difference exceeded established laboratory limits. The RPD criterion is not applicable to sample results less than ten times the Method Detection Limit.

All other QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 26 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC3 (Lab Sample# W040002529, SDG# 20042296, SAF# F04-032).
- Manganese and Strontium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Matrix Spike precision was evaluated on sample# B19386 (SDG# 20042408, SAF# F04-014.)
- Calcium, Iron and Magnesium - The analytes detected in the associated preparation Blank. Sample was evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 27 for QC details. Laboratory Control samples and Duplicate samples were analyzed as per the GRP Letter of Instruction. Analytical Note:

- Sample Duplicate was analyzed on Sample #PFF-04-243-97 (non GRP sample).

All laboratory QC controls for the method were within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 09-dec-2004.
- Terphenyl-d14 (surrogate) – The Matrix Spike and Sample B1BJD9 surrogate recovery were less than the established laboratory limits. The Matrix Spike Relative Percent Difference exceeds established laboratory limits. Sample results were not flagged.

All other QC controls are within the established limits.

TPHD–WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike, Laboratory Control Sample and Laboratory Control Sample Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 39 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Matrix Spike QC sample was analyzed on sample# B1BJC3 (SDG# 20042296, SAF# F04-032).
- Precision was evaluated on the Laboratory Sample and Laboratory Sample Duplicate.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 42 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BRB2 (SDG# 20042308, SAF# F04-006).

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Matrix Spike (Technetium-99 only), Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 44 through 48 for QC details. Analytical Note:

- Technetium-99 - Matrix Spike and Duplicate QC samples were analyzed on sample# B1BXJ0 (SDG# 20042328, SAF# F04-006).

- Neptunium-237 – Laboratory Control Sample recovery was below established laboratory limits. Sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
BLANK		Sr-85	92.8
LCS		Sr-85	108.2
B1BJD9	W040002540	Sr-85	33.0
DUPLICATE	W040002540	Sr-85	38.0

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.

Herlene S. Rich
WSCF Production Control

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

1/4-05

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 1 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
200-ZP-1, C4301; ~~240ft~~ 270' DMG 12/7/04	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE: 20042338

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL RJA	~~150mL~~ 250mL 1-10-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJD9 W04002540	WATER	12/7/04	0930	X3	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT	12/7/04 2115	Victor Timms	12/07/04 12:15
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

FILTERED @ 0.45 µM

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-030	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240 ft.~~ 270' 12/7/04 PMG	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 3 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4301; 240 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None								
TYPE OF CONTAINER	P	P	P	P								
NO. OF CONTAINER(S)	1	2	2	1								
VOLUME	1000mL	1000mL	1000mL	500mL								
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;								

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJD9	WATER	12/7/04	0930	X	X	X	X							

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	FILTERED @ 0.45 µm
PMGENT	12/7/04 12:15	Victor Sims	12/7/04 12:15	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-049	PAGE 1 OF 1

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301 ~~240 ft~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C												
TYPE OF CONTAINER	aGs*												
NO. OF CONTAINER(S)	3												
VOLUME	40mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJF6 W04002344	WATER	12/7/04	0830	X										

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
AMGENT/ 12/7/04		Victor 12/7/04	12:15
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20050155**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4302, 235' GRP samples (B1BJH6 and B1BJJ3) were received at the WSCF Laboratory on January 25, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Acknowledgement of Samples Received are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Note:

- Sample B1BJH6 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold time for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 09-feb-2005.
- Calcium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Silver, Calcium and Lithium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results, with the following exceptions: Sample B1BJH6 result was C-flagged for Lithium.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 24 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

pH - The hold time for this analysis was met. Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 25 for QC details. Analytical Note:

- Duplicate QC samples were analyzed on sample# B1C371 (SDG# 20050167, SAF# F02-001).

All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 32 through 37 for QC details. Analytical Notes:

- Preparation Date: 31-jan-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9N2 (SDG# 20050186, SAF# F03-019).
- Terphenyl-d14 (surrogate) – Matrix and Matrix Spike Duplicate recoveries were below established laboratory limits. Surrogate recovery for the sample was within limits and the sample B1BJH6 results were not flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 38 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 39 through 41 for QC details. Analytical Note:

- Carbon Tetrachloride - sample B1BJJ3 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 43 through 47 for QC details. Analytical Notes:

- Strontium-89/90 - Duplicate QC samples was analyzed on sample# B1BRC5 (SDG# 20050180, SAF# F02-003).

- Neptunium-237 – Duplicate Relative Percent Difference exceeded established laboratory limit and the Laboratory Control Sample recovery was below established laboratory limits. Sample result was X-flagged.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	69.0
LCS		Sr-85	101.4
B1BRC5	W050000169	Sr-85	69.6
DUPLICATE		Sr-85	80.6

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1BRC6	W050000170	Sr-85	71.0
B1BJH6	W050000144	Sr-85	76.8

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc. 2/24	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 1 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302; 235 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

20050155

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJH6	WATER	1/25/05	0745	X	X	X	X	X	X	X	X	X	X
W05000144													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
AMGENT/Thomas	1/25/05 1040	[illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-059	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4302; 235 ft.	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (HG); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4302; 235 ft.	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO. — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None	
TYPE OF CONTAINER	P	P	P	P	
NO. OF CONTAINER(S)	1	2	2	1	
VOLUME	1000mL	1000mL	1000mL	500mL	
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B1BJH6	WATER	1/25/05	0745	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: PMGENT/	DATE/TIME: 1/25/05 1640	RECEIVED BY/STORED IN: KBarber	DATE/TIME: 1/25/05 1640	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-078	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C												
TYPE OF CONTAINER	aGs*												
NO. OF CONTAINER(S)	3												
VOLUME	40mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJJ3	WATER	1/25/05	0845	X										
W05C000148														

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT/[illegible]	1/25/05 1040	[illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20051157, Rev. 1**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4694 (I-1), samples (B1D7K5 and B1D7Y4) were received at the WSCF Laboratory on June 1, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

Compliant to GRP direction on December 9, 2005, uranium analysis was performed on sample B1D7Y4. The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 47 through 48, for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).
- Sample B1D7K5 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

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Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide – Sample was not analyzed for cyanide. Since the pH of the sample was less than 12, the analysis was cancelled.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 16 through 17 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Aluminum, Calcium and Magnesium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.
- Calcium, Magnesium and Sodium – Due to insufficient spike concentration, Matrix Spike Matrix Spike Duplicate and Spike Relative Percent Difference results are reported as "n/a".
- Aluminum – The Matrix Spike and Matrix Spike Duplicate recoveries are biased low. Sample B1D7K5 result is potentially biased low.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. For the uranium analysis, a Blank, Laboratory Control Sample and Duplicate QC samples were analyzed. There was not enough sample material for a Matrix Spike or Matrix Spike Duplicate Analysis. See pages 18 through 21a for QC details. Analytical Notes:

- Preparation Date: 13-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7K0 (SDG# 20051190, SAF# F04-032) for all metals except uranium.
- Strontium – Due to high sample concentrations, the Matrix Spike and Matrix Spike recoveries are reported as "n/a".
- Uranium Analysis – Added per client request on December 9, 2005. A Duplicate QC sample was analyzed on sample# B1D7K5.

All other QC controls are within the established limits.

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pH - The hold time for this analysis was met. A Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 22 for QC details. All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 29 through 34 for QC details. Analytical Notes:

- Preparation Date: 06-jun-2005.
- Bis (2-ethylhexyl) phthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was B flagged.
- Diethylphthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was less than the reportable detection limit, but greater than or equal to the method detection limit. Sample B1D7K5 result was BJ flagged.
- Phenol-5d (surrogate) – recovery was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.
- Pentachlorophenol – Laboratory Control Sample result was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 35 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 38 for QC details.

All QC controls are within the established limits.

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Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate QC

samples were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 44 for QC details. Analytical Note:

- Strontium-89/90 - Duplicate QC sample was analyzed on sample# B1CWD7 (SDG# 20051152, SAF# F02-003).

All QC controls are within the established limits.

- Uranium-234 and Uranium-235 - Additional Batch QC Data are summarized below:

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
Uranium-234/ Uranium-235				
BLANK		U-234	5.428E-02	
BLANK		U-235	2.232E-02	
B1D7K5	W050001669	U-234	1.182E+00	
DUPLICATE	W050001669	U-234	1.227E+00	3.7%
B1D7K5	W050001669	U-235	4.361E-02	
DUPLICATE	W050001669	U-235	4.716E-02	7.8%

- Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontrium-85			
BLANK		Sr-85	95.9%
LCS		Sr-85	89.6%
B1CWD7	W050001657	Sr-85	93.8%
DUPLICATE	W050001657	Sr-85	93.1%
B1D7K5	W050001669	Sr-85	81.6%

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1/3/06

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Uranium-232			
BLANK		U-232	74.8%
LCS		U-232	70.4%
B1D7K5	W050001669	U-232	91.2%
DUPLICATE	W050001669	U-232	86.2%

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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Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 | PAGE 1 OF 2

COLLECTOR: Alexander/Gent/Mahood

COMPANY CONTACT: TRENT, SJ

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: TRENT, SJ

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

AIR QUALITY: ☐

SAMPLING LOCATION: 200-ZP-1, C4694, I-1

PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater

SAF NO.: F04-032

ICE CHEST NO.:

FIELD LOGBOOK NO.:

COA: 119325ES10

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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

2005157

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	G/P	P	G/P	G/P	G/P	G/P	aG	G/P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	5/26/05 ~~60mL~~ 125mL Rem	5/26/05 ~~150mL~~ 125mL Rem	5/26/05 ~~120mL~~ 125mL Rem	500mL	1000mL PDW P.O.Mu 6/29/2005	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	1210	3 ✓	4 ✓	✓	✓	✓	✓	✓	2 ✓	✓

W6500K6-9

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.O. Mahood/Richard O. Mahood	6/1/5 1415	[illegible]	6/1/5 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {3+4 Methylphenol (cresol, m+p)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010B (TAL) {Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium} ICP Metals - 6010B (Add-On) {Boron, Lithium, Phosphorus, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

LABORATORY SECTION — RECEIVED BY | TITLE | DATE/TIME

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

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A-6003-618(03/03)

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146

COLLECTOR Alexander/Gent/Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 7N	**DATA TURNAROUND** 45 Days / 45 Days	**AIR QUALITY** [ ]	
SAMPLING LOCATION 200-ZP-1, C4694, I-1	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**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=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	None	None	~~HCl to pH <2 CSL 2nd~~			
TYPE OF CONTAINER	G/P	G/P	P	~~40m~~ ~~Rem 5/26/05~~ As			
NO. OF CONTAINER(S)	2	2	1	3			
VOLUME	1000mL	1000mL	500mL	~~40mL~~		Add	
SAMPLE ANALYSIS	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	~~Special Instructions~~ ~~All preps 1 of 2~~	5/31/05 Rem	Uranium - Isotopic PDhi P.O. Mix 6/18/2005	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	12:10	2✓	2✓	✓						
~~B1D7K5-A~~	~~WATER~~ Rem 5/31/05								Add Uranium analysis - ICP-MS PDhi P.O. Mix 12/22/2005			

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Mahood/Robert D. McLeod	6/1/5 1415	[illegible]	6/1/05 1415
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

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

REVISED RDAyers 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-169	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Mahood	TRENT, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
200-ZP-1, C4694, I-B1 Rem 6/1/05	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1D7Y4	WATER	6-1-5	1210	3✓									
[illegible]													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Richard C. Mahood / R.C. Mahood	6/1/05 1415	[illegible]	6/1/05 1415
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)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

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A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20061212**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F06-022**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 / 200-UP-1 RI Sampling and Analysis (Laundry Facility) Groundwater samples (B1JX34 and B1JX48) were received at the WSCF Laboratory on October 2, 2006. 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 (GRP) – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

It should be noted that the attached chain of custody was stamped "iced", initialed and dated 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,* page 12, page 22 and page 28, for a complete listing of approved analytical methods

Inorganic Comments

Anions - Hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 9 for QC details.

All QC controls are within the established limits.

Hexavalent Chromium - The hold time for this analysis was met. A Blank, Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 10 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 11 for QC details. Analytical Notes:

- Preparation Date: 03-oct-2006.
- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX20 (SDG# 20061146, SAF# F06-022).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 18 through 20 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX35 (SDG# 20061236, SAF# F06-022).
- Chloroform- sample B1JX48 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF's radiochemical methods. A Blank, Duplicate QC, Matrix Spike (Technetium only) and a Laboratory Control Sample were analyzed with this delivery group. See pages 24 and 26 for QC details. Analytical Note:

- Strontium-90 – Batch QC was performed on a non-GRP (Sample# S667124, SDG# 20061204). Refer to table below for Batch QC detail.

Batch QC Data (Results) - Based on SDG# 20061204				
Sample Number	**Lab Sample ID**	**Isotope**	**QC**	
			Results (pCi/L)	**RPD %**
Strontium-90				
S667124	W060003424	Sr-90	3.100E+00	
DUPLICATE	W060003424	Sr-90	3.050E+00	1.6%

All QC controls are within the established limits.

Strontium-85 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery**
Strontium-85			
BLANK		Sr-85	94.3%
LCS		Sr-85	96.8%
S667124	W060003424	Sr-85	83.5%
DUPLICATE	W060003424	Sr-85	80.7%
B1JX48	W060003428	Sr-85	88.5%

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

11/01/06

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F06-022-110 PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes 20061212	BYRNES, ME	373-3996	TRENT, SJ	7N	
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
C5103 (299-W14-72), I-1 FB 2941	200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		F06-022	☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121075~~ES20	**METHOD OF SHIPMENT**		
			GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

TIE to: B1JX39

PRESERVATION	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1JX34 W06000342 7	WATER	10-2-06	1340	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [signature] 11-2-06	1415	K Bates [signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

ICED
KB Initial
10/2/06 Date

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

Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F06-022-129 | PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes	BYRNES, ME	373-3996	TRENT, SJ		
SAMPLING LOCATION C5103 (299-W14-72), I-1 294'	**PROJECT DESIGNATION** 200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		**SAF NO.** F06-022	**AIR QUALITY** ☐	**45 Days / 45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121875~~ES20 10-2-06	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

TIE TO : B1JX39

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	P	P	P	P	P
NO. OF CONTAINER(S)	3	1	1	1	2	2
VOLUME	40mL	~~120~~mL 125	125mL	500mL	1L	1L
SAMPLE ANALYSIS	VOA - 8260B (TCL);	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Strontium-89,90 -- Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1JX48 W06000342 8	WATER	10-2-06	1325	X	X	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope/ [signature] 10-2-06	1415	[signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
VB Initial
10/2/06 Date

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

Sample Delivery Group	**WSCF20071194**
Sample Matrix	**Water**
Data Deliverable	**Summary Report**

Introduction

One (1) groundwater sample was received at the WSCF Laboratory on July 12, 2007. Sample was 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 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 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 13 through 15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Sample Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Note(s):

- Nitrite Sample Duplicate RPD above laboratory acceptance limit, however the Matrix Spike/Matrix Spike Duplicate RPD is within acceptance limits.

All other QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21 through 22 for QC details. Analytical Note(s):

- Iron preparation Blank is high resulting in a "C" flag.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23 through 26 for QC details. Analytical Note(s):

- Chromium preparation Blank positive, however the value is so low in comparison to the sample result no impact evident, no flag applied.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31 through 33 for QC details. Analytical Note:

- Acetone preparation Blank was high, however sample result is "<" therefore no impact to the sample.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 36 through 37 for QC details. All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

for Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John Trechter for Pauline Mix
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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071194	ROHAY, VJ	373-3807	TRENT, SJ	7N	
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	45 Days / 45 Days
C5244 - 1-42 222.3'	T4/T5 Well Installation Characterization - Groundwater		F07-006	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L952 W076R01755	WATER	7.12.07	1155	X	X	X	X	X	X	X	X		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [illegible]	7.12.07 1530	TA Frazier [illegible]	7-12-07 1530
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

** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

ICED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	**WSCF20071433**
Sample Matrix	**Water**
Data Deliverable	**Summary Report**

Introduction

One groundwater sample was received at the WSCF Laboratory on August 13, 2007. Sample was 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18-19 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF21 (SDG# 20071437, SAF# F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. Analytical Note(s):

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1PCL9 (SDG# 20071438, SAF# F02-013).

All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21-22 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).
- Iron contamination detected in the Blank was evaluated and sample result was C flagged.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23-26 for QC details. Analytical Note(s):

- Tc-99 via ICP-MS – Developmental result included in this SDG.
- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).
- Arsenic (B1P3V9) – Spike Relative Percent Difference (RPD) slightly exceeded established laboratory standards. Sample result was E flagged.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. Analytical Note(s):

- Duplicate was analyzed on sample# B1P3W1 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31-33 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.
- Acetone contamination detected in the Blank was evaluated and there was no affect on sample result.

All other QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 35-36 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Tritium – Duplicate and Matrix Spike were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071433	ROHAY, VJ	373-3807	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	
C5244 - 1-53 381	T4/T5 Well Installation Characterization - Groundwater		F07-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L965 W07GR02135	WATER	8-13-07	0935	✓	✓	✓	✓	✓	✓	✓	✓		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Howard Pfister	8/13/07 1025	TA Frazier Teresa Frazier	8/13/07 1025

SPECIAL INSTRUCTIONS
** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

NCED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	WSCF20071455
Sample Matrix	Water
Data Deliverable	Summary Report

Introduction

Three (3) groundwater samples were received at the WSCF Laboratory on August 15, 2007. 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 17 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 18 for QC details.

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All 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 per the GRP Letter of Instruction. See pages 19-20 for QC details. Analytical Note(s):

- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24-26 for QC details. Analytical Note(s):

- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 29-31 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope, Pfister, Moekler, Julian 20071455	Trent, SJ	373-5869	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
C5574, I-2 326'	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None	
TYPE OF CONTAINER	P	G/P	aG	G/P	G/P	G/P	
NO. OF CONTAINER(S)	1	1	1	1	2	2	
VOLUME	120mL	125mL	500mL	500mL	1L	1L	
SAMPLE ANALYSIS	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy {Cesium-137}	Strontium-89,90 – Total Sr;	Technetium-99 {Technetium-99}	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1P0X1 W076R0215 7	WATER	8-15-07	1125	✓	✓	✓	✓	✓	✓			
				025886	025886	W2213020	024618	024186				

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.D. Julian	8-15-07 1225	TA Frazier / Frazier	8/15/07 1225
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) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
Initial
Date

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julin	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 ~~0~~ Days / ~~0~~ 45 Days
SAMPLING LOCATION: C5574, I-2 326'	PROJECT DESIGNATION: 200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		SAF NO.: F07-052		DJA 8-3-07
ICE CHEST NO.	FIELD LOGBOOK NO.	COA: 122597ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE		
SHIPPED TO: DJA 8-3-07 ~~Field Analysis Activities~~ WSCF	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=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	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P0W2 Q158	WATER	8-15-07	1125	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julin / [signature] 8-15-07	1225	TA Pfrazier / [signature] 8/15/07	1225
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)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform}

ICED
Initial
Date

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julian	Trent, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION C5574, I-2-FB 8-15-07 ~~2975'~~ 326'	**PROJECT DESIGNATION** 200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		**SAF NO.** F07-052	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597ES10	**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=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	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P153 2159	WATER	8-15-07	1057	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.L. Pfister	8-15-07 1225	TA FRAZIER / Jerex Fraziu	8/15/07 1225

SPECIAL INSTRUCTIONS

ICED
Initial
Date

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF20072125

Introduction

Three groundwater sample was received at the WSCF Laboratory on November 29, 2007. Sample was 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 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 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 14, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 16 for QC details.

- Matrix Spike, Matrix Spike Duplicate and Sample Duplicate analyzed on sample # B1R0R0 (SDG 20072127, SAF F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The holding time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 17 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The holding time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 18 through 19 for QC details.

- Matrix Spike and Matrix Spike Duplicate analyzed on samples # B1PLB6 (SDG 20072033, SAF F07-030) and B1PLD2 (SDG 20072034, SAF F07-076).

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF20072125

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24 through 26 for QC details.

All QC controls are within the established limits.

Radiochemistry Comments

There are no holding times associated with WSCF's radiochemical methods.

A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction, including Matrix Spike on Tc-99. See pages 28 through 30 for QC details.

- Technetium – 99 Duplicate and Matrix Spike analyzed on sample # B1RF77 (SDG 20072108, SAF F08-014).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John E. Trechter
WSCF Client Services

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization 20072125	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None
TYPE OF CONTAINER	P	~~G~~/P 11-5-07	aG	~~G~~/P 11-5-07	~~G~~/P	~~G~~/P
NO. OF CONTAINER(S)	1	1	1	1	2	2
VOLUME	120mL	125mL	500mL	500mL	1L	1L
SAMPLE ANALYSIS	IC Anions - 300.0 (Fluoride, Nitrogen in Nitrate)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 – Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1P0M7 W07GR0313 3	WATER	11/29/7	1250	✓	✓	✓	✓	✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	11/29/7 1410	TA Frazier [signature]	11/29/07 1410

SPECIAL INSTRUCTIONS
(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1-FB	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HCl ~~or H2SO4~~ to pH <2/Cool 4C 11-5-07
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1P0L8 3134	WATER	11/29/7	1245

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	11/29/7 1410	TA Pnazim [illegible]	11/29/07 1410
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

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 1A	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	24 hours ~~0 Days~~ / ~~0~~ 15 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
~~Field Analysis Activities~~ WSCF	N/A		N/A		

ajl 11-5-07

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
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	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)	**PRESERVATION**	HCl to pH <2/Cool 4C
		TYPE OF CONTAINER	aGs*
		NO. OF CONTAINER(S)	3
		VOLUME	40mL
	SPECIAL HANDLING AND/OR STORAGE	**SAMPLE ANALYSIS**	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P117 313S	WATER	11/29/7	1250	\

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	11/29/7 1410	TA FIZAZIRI [illegible]	11/29/07 1410
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)~~VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride, Chloroform)~~

8260_VOA_GCMS ajl 11-5-07

ICED

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF90900

Introduction

Two (2) S&GRP samples were received at the WSCF Laboratory on August 18, 2009. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

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

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

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

All QC controls are within the established limits.

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

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF90900

Organic Comments

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

- The additional chemicals are a part of the QC and spike controls and cannot be removed from the report menu.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

All 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			F09-043-061	PAGE 1 OF 1
COLLECTOR: Mokler / Brotherton	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND
SAMPLING LOCATION: C7027 (299-W12-2); EWS-002	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	24 Hours / 15 Days
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-585-8	ACTUAL SAMPLE DEPTH: 385.5'	COA: 302022ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization 90900	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	HNO3 to pH <2(UI-TREX)	HCl to pH <2/Cool~4C					
TYPE OF CONTAINER	aG	P	Nalgene	aGs*					
NO. OF CONTAINER(S)	1	1	1	3					
VOLUME	500mL	500mL	500mL	40mL					
SAMPLE ANALYSIS	Chromium hex - 7196;	IC Anions - 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B21F31 001	WATER	8/18/09	08:13	✓	✓	✓	✓					

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Brotherton	DATE/TIME: 8/18/09 0925	RECEIVED BY/STORED IN: TA Frazier	DATE/TIME: 8/18/09 0925
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride, Chloroform, Trichloroethene)

F. Clifford per FWS B. Orth

ORIGINAL

ICED

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F09-043-062	PAGE 1 OF 1
COLLECTOR: Mokler / Brotherton	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND
SAMPLING LOCATION: C7027 (299-W12-2); EW5-002D	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	24 Hours / 15 Days
ICE CHEST NO.: N/A	FIELD LOGBOOK NO.: HNF-N-585-8	ACTUAL SAMPLE DEPTH: 325.5	COA: 302022ES10	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	HNO3 to pH <2(ULTREX)	HCl to pH <2/Cool~4C						
TYPE OF CONTAINER	aG	P	Nalgene	aGs*						
NO. OF CONTAINER(S)	1	1	1	3						
VOLUME	500mL	500mL	500mL	40mL						
SAMPLE ANALYSIS	Chromium Hex - 7196	IC Anions 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS						

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B21F32 002	WATER	8/18/09	08:13	✓	✓	✓	✓						

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Brotherton	DATE/TIME: 8/13/09 0725	RECEIVED BY/STORED IN: T A Frazier	DATE/TIME: 8/18/09 0725
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene}

FILTERED PER PWS BOTH

☐ ORIGINAL

ICED

Wednesday, August 19, 2009 1:06:59 AM
Page 3 of 3

ChemWare

Attachment 2
Narrative
WSCF91148

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on September 25, 2009. 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

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

All QC controls are within the established limits.

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

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF91148

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

All QC controls are within the established limits.

Organic Comments

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

All 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			F09-043-154	PAGE 1 OF 1
COLLECTOR: BAILEY	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 1A	DATA TURNAROUND: 24 Hours / 15 Days
SAMPLING LOCATION: C7029 (299-W12-4); EW19-005	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-5858	ACTUAL SAMPLE DEPTH: 357	COA: 302022ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization 91148	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	HNO3 to pH <2(Lt TREX)	HCl to pH <2/Cool~4C
TYPE OF CONTAINER	aG	P	Nalgene	aGa*
NO. OF CONTAINER(S)	1	1	1	3
VOLUME	500mL	500mL	500mL	40mL
SAMPLE ANALYSIS	Chromium Hex 7196;	IC Anions 300.0 (Nitrogen in Nitrate)	Tc-99 by ICPMS (Technetium-99)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

ICED

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B21FV4 001	WATER	9-25-09	0750	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JK BAILEY / [signature]	9-25-09 0840	T A Frazier [signature]	9-25-09 0840
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene}

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

A-6003-618(01/06)

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY DATA VALIDATION CHECKLISTS

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: CPP 200 Area, 200 Area SGRP, 200 Area			DATA PACKAGE: VSR10-014		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 4-14-2010	
			SDG: See below*		
ANALYSES PERFORMED					
Anions/IC X	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity X
Ammonia X	BOD/COD	Chloride	Chromium-VI X	pH X	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate	Total CN X	Sulfide

SAMPLES/MATRIX

SDG WSCF20042209: B1BJC2
SDG WSCF20042338: B1BJD9
SDG WSCF20050155: B1BJH6
SDG WSCF20051157: B1D7K5
SDG WSCF20061212: B1JX48
SDG WSCF20071194: B1L952
SDG WSCF20071433: B1L965
SDG WSCF20071455: B1P0X1
SDG WSCF20072125: B1P0M7
SDG WSCF90900: B21F31, B21F32
SDG WSCF91148: B21FV4

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:

*WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051157, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90900 & WSCF91148

GENERAL CHEMISTRY DATA VALIDATION CHECKLISTS

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

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

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

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

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

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

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

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

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

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

Comments: None

GENERAL CHEMISTRY DATA VALIDATION CHECKLISTS

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

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

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

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

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

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

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

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

Comments: None

6. HOLDING TIMES (all levels)

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

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

Comments:

WSCF20042209: Sample B1BJC2 analyzed for pH the day after collection

GENERAL CHEMISTRY DATA VALIDATION CHECKLISTS

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Ammonia (N) by IC

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Ammonia (N) by IC	7664-41-7	7.83e-01	3.882	RPD	11/23/04	0.000	20.000	
MS	Ammonia (N) by IC	7664-41-7	1.66e-01	101.220	% Recov	11/23/04	75.000	125.000	
MSD	Ammonia (N) by IC	7664-41-7	1.71e-01	104.268	% Recov	11/23/04	75.000	125.000	
BATCH QC									
BLANK	Ammonia (N) by IC	7664-41-7	<3.00e-3	n/a	mg/L	11/23/04	0.000	30.000	U
BLANK	Ammonia (N) by IC	7664-41-7	<3.00e-3	n/a	mg/L	11/23/04	0.000	30.000	U
LCS	Ammonia (N) by IC	7664-41-7	7.61e+01	92.579	% Recov	11/23/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

Lab ID: W040002315

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Chloride	16887-00-6	1.45e+01	4.714	RPD	11/22/04	0.000	20.000	
DUP	Fluoride	16984-48-8	<1.80e-1	n/a	RPD	11/22/04	0.000	20.000	U
DUP	Nitrogen in Nitrite	NO2-N	7.56e-01	1.064	RPD	11/22/04	0.000	20.000	
DUP	Nitrogen in Nitrate	NO3-N	2.09e+02	5.405	RPD	11/22/04	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<7.80e-1	n/a	RPD	11/22/04	0.000	20.000	U
DUP	Sulfate	14808-79-8	2.87e+01	5.000	RPD	11/22/04	0.000	20.000	
MS	Chloride	16887-00-6	8.89e-01	89.798	% Recov	11/22/04	75.000	125.000	
MS	Fluoride	16984-48-8	5.05e-01	103.272	% Recov	11/22/04	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	4.83e-01	95.833	% Recov	11/22/04	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	4.48e-01	100.448	% Recov	11/22/04	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	8.19e-01	85.401	% Recov	11/22/04	75.000	125.000	
MS	Sulfate	14808-79-8	1.78e+00	90.355	% Recov	11/22/04	75.000	125.000	
MSD	Chloride	16887-00-6	9.29e-01	93.838	% Recov	11/22/04	75.000	125.000	
MSD	Fluoride	16984-48-8	4.99e-01	102.045	% Recov	11/22/04	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	5.11e-01	101.389	% Recov	11/22/04	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	4.41e-01	98.879	% Recov	11/22/04	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	9.38e-01	97.810	% Recov	11/22/04	75.000	125.000	
MSD	Sulfate	14808-79-8	1.81e+00	91.878	% Recov	11/22/04	75.000	125.000	

BATCH QC

BLANK	Chloride	16887-00-6	<3.40e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Chloride	16887-00-6	<3.40e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.80e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.80e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6.00e-3	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6.00e-3	n/a	mg/L	11/22/04	0.000	300.000	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Nitrogen in Nitrate	NO3-N	<2.20e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<2.20e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.50e-1	n/a	mg/L	11/22/04	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.50e-1	n/a	mg/L	11/22/04	0.000	300.000	U
LCS	Chloride	16887-00-6	2.04e+02	102.000	% Recov	11/22/04	80.000	120.000	
LCS	Fluoride	16984-48-8	9.27e+01	93.921	% Recov	11/22/04	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	9.30e+01	93.000	% Recov	11/22/04	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	8.80e+01	97.669	% Recov	11/22/04	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	1.89e+02	97.523	% Recov	11/22/04	80.000	120.000	
LCS	Sulfate	14808-79-8	3.63e+02	90.977	% Recov	11/22/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Hexavalent chromium

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Hexavalent chromium	18540-29-9	<0.003	n/a	RPD	11/23/04	0.000	15.000	U
MS	Hexavalent chromium	18540-29-9	0.0499	100.808	% Recov	11/23/04	85.000	115.000	
MSD	Hexavalent chromium	18540-29-9	0.0499	100.808	% Recov	11/23/04	85.000	115.000	
SPK-RPD	Hexavalent chromium	18540-29-9	100.808	0.000	RPD	11/23/04	0.000	20.000	
BATCH QC									
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	11/23/04	0.000	2.000	U
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	11/23/04	0.000	2.000	U
LCS	Hexavalent chromium	18540-29-9	0.0474	102.155	% Recov	11/23/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Cyanide by Midi/Spectrophotom

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

Lab ID: W040002315

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MS	Cyanide by Midi/Spectrophotom	57-12-5	94.7	94.700	% Recov	12/01/04	75.000	125.000	
MSD	Cyanide by Midi/Spectrophotom	57-12-5	89.6	89.600	% Recov	12/01/04	75.000	125.000	
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	89.600	5.534	RPD	12/01/04	0.000	20.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	1	1.000	ug/L	12/01/04	-4.000	4.000	
BLNK-PREP	Cyanide by Midi/Spectrophotom	57-12-5	1	1.000	ug/L	12/01/04	-4.000	4.000	
LCS	Cyanide by Midi/Spectrophotom	57-12-5	99.5	99.500	% Recov	12/01/04	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: pH Direct Measurement

SAF Number: F04-032
Sample Date: 11/23/04
Receive Date:11/23/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002317									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	pH Direct Measurement	PH	7.788	0.026	RPD	11/23/04	0.000	20.000	
BATCH QC									
LCS	pH Direct Measurement	PH	8.004	1.000	Ratio	11/23/04	0.900	1.100	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Ammonia (N) by IC

SAF Number: F04-032
Sample Date: 12/08/04
Receive Date: 12/08/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002551									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Ammonia (N) by IC	7664-41-7	<3.00e-3	n/a	RPD	12/08/04	0.000	20.000	U
MS	Ammonia (N) by IC	7664-41-7	1.70e-01	103.659	% Recov	12/08/04	75.000	125.000	
MSD	Ammonia (N) by IC	7664-41-7	1.53e-01	93.293	% Recov	12/08/04	75.000	125.000	
BATCH QC									
BLANK	Ammonia (N) by IC	7664-41-7	<3.00e-3	n/a	mg/L	12/08/04	0.000	30.000	U
BLANK	Ammonia (N) by IC	7664-41-7	<1.50e0	n/a	mg/L	12/08/04	0.000	30.000	U
LCS	Ammonia (N) by IC	7664-41-7	8.86e+01	107.786	% Recov	12/08/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

Lab ID: W040002540

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Chloride	16887-00-6	1.30e+01	2.335	RPD	12/07/04	0.000	20.000	
DUP	Fluoride	16984-48-8	3.31e-01	0.910	RPD	12/07/04	0.000	20.000	
DUP	Nitrogen in Nitrite	NO2-N	6.10e-02	23.188	RPD	12/07/04	0.000	20.000	*
DUP	Nitrogen in Nitrate	NO3-N	1.50e+01	1.342	RPD	12/07/04	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	RPD	12/07/04	0.000	20.000	U
DUP	Sulfate	14808-79-8	2.51e+01	2.419	RPD	12/07/04	0.000	20.000	
MS	Chloride	16887-00-6	1.04e+00	105.051	% Recov	12/07/04	75.000	125.000	
MS	Fluoride	16984-48-8	5.09e-01	104.090	% Recov	12/07/04	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	5.19e-01	102.976	% Recov	12/07/04	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	4.70e-01	105.381	% Recov	12/07/04	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	8.51e-01	88.738	% Recov	12/07/04	75.000	125.000	
MS	Sulfate	14808-79-8	1.90e+00	96.447	% Recov	12/07/04	75.000	125.000	
MSD	Chloride	16887-00-6	1.03e+00	104.040	% Recov	12/07/04	75.000	125.000	
MSD	Fluoride	16984-48-8	4.90e-01	100.204	% Recov	12/07/04	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	4.66e-01	92.460	% Recov	12/07/04	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	4.81e-01	107.848	% Recov	12/07/04	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	8.89e-01	92.701	% Recov	12/07/04	75.000	125.000	
MSD	Sulfate	14808-79-8	1.95e+00	98.985	% Recov	12/07/04	75.000	125.000	

BATCH QC

BLANK	Chloride	16887-00-6	<3.40e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Chloride	16887-00-6	<3.40e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.80e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.80e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6.00e-3	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6.00e-3	n/a	mg/L	12/07/04	0.000	300.000	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Nitrogen in Nitrate	NO3-N	<2.20e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<2.20e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.50e-1	n/a	mg/L	12/07/04	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.50e-1	n/a	mg/L	12/07/04	0.000	300.000	U
LCS	Chloride	16887-00-6	2.07e+02	103.500	% Recov	12/07/04	80.000	120.000	
LCS	Fluoride	16984-48-8	9.14e+01	92.604	% Recov	12/07/04	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	9.87e+01	99.096	% Recov	12/07/04	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	8.98e+01	99.667	% Recov	12/07/04	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	1.87e+02	96.491	% Recov	12/07/04	80.000	120.000	
LCS	Sulfate	14808-79-8	3.80e+02	95.238	% Recov	12/07/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Hexavalent chromium

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002540									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Hexavalent chromium	18540-29-9	<0.003	n/a	RPD	12/08/04	0.000	15.000	U
MS	Hexavalent chromium	18540-29-9	0.0512	103.434	% Recov	12/08/04	85.000	115.000	
MSD	Hexavalent chromium	18540-29-9	0.0512	103.434	% Recov	12/08/04	85.000	115.000	
SPK-RPD	Hexavalent chromium	18540-29-9	103.434	0.000	RPD	12/08/04	0.000	20.000	
BATCH QC									
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	12/08/04	0.000	2.000	U
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	12/08/04	0.000	2.000	U
LCS	Hexavalent chromium	18540-29-9	0.0464	100.000	% Recov	12/08/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Cyanide by Midi/Spectrophotom

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002540									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Cyanide by Midi/Spectrophotom	57-12-5	87.0	87.000	% Recov	12/08/04	75.000	125.000	
MSD	Cyanide by Midi/Spectrophotom	57-12-5	99.8	99.800	% Recov	12/08/04	75.000	125.000	
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	99.800	13.704	RPD	12/08/04	0.000	20.000	
BATCH QC									
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	1	1.000	ug/L	12/08/04	-4.000	4.000	
BLNK-PREP	Cyanide by Midi/Spectrophotom	57-12-5	1	1.000	ug/L	12/08/04	-4.000	4.000	
LCS	Cyanide by Midi/Spectrophotom	57-12-5	99.8	99.800	% Recov	12/08/04	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: pH Direct Measurement

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002537									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	pH Direct Measurement	PH	7.578	0.079	RPD	12/07/04	0.000	20.000	
BATCH QC									
LCS	pH Direct Measurement	PH	7.994	0.999	Ratio	12/07/04	0.900	1.100	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Ammonia (N) by IC

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Ammonia (N) by IC	7664-41-7	2.44e-02	10.485	RPD	01/26/05	0.000	20.000	
MS	Ammonia (N) by IC	7664-41-7	1.69e-01	103.049	% Recov	01/26/05	75.000	125.000	
MSD	Ammonia (N) by IC	7664-41-7	1.68e-01	102.439	% Recov	01/26/05	75.000	125.000	
BATCH QC									
BLANK	Ammonia (N) by IC	7664-41-7	<3.00e-3	n/a	mg/L	01/26/05	0.000	30.000	U
BLANK	Ammonia (N) by IC	7664-41-7	<3.00e-3	n/a	mg/L	01/26/05	0.000	30.000	U
LCS	Ammonia (N) by IC	7664-41-7	8.52e+01	103.398	% Recov	01/26/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

Lab ID: W050000144

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Chloride	16887-00-6	7.95e+00	8.087	RPD	01/26/05	0.000	20.000	
DUP	Fluoride	16984-48-8	3.45e-01	2.941	RPD	01/26/05	0.000	20.000	
DUP	Nitrogen in Nitrite	NO2-N	<1.20e-2	n/a	RPD	01/26/05	0.000	20.000	U
DUP	Nitrogen in Nitrate	NO3-N	1.25e+01	0.000	RPD	01/26/05	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<1.56e-1	n/a	RPD	01/26/05	0.000	20.000	U
DUP	Sulfate	14808-79-8	2.11e+01	0.000	RPD	01/26/05	0.000	20.000	
MS	Chloride	16887-00-6	9.87e-01	99.697	% Recov	01/26/05	75.000	125.000	
MS	Fluoride	16984-48-8	5.38e-01	110.020	% Recov	01/26/05	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	4.36e-01	86.508	% Recov	01/26/05	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	4.66e-01	104.484	% Recov	01/26/05	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	8.70e-01	90.719	% Recov	01/26/05	75.000	125.000	
MS	Sulfate	14808-79-8	2.08e+00	105.584	% Recov	01/26/05	75.000	125.000	
MSD	Chloride	16887-00-6	9.79e-01	98.889	% Recov	01/26/05	75.000	125.000	
MSD	Fluoride	16984-48-8	5.32e-01	108.793	% Recov	01/26/05	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	4.34e-01	86.111	% Recov	01/26/05	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	4.46e-01	100.000	% Recov	01/26/05	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	8.67e-01	90.407	% Recov	01/26/05	75.000	125.000	
MSD	Sulfate	14808-79-8	1.99e+00	101.015	% Recov	01/26/05	75.000	125.000	

BATCH QC

BLANK	Chloride	16887-00-6	<3.40e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Chloride	16887-00-6	<3.40e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.80e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.80e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6.00e-3	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6.00e-3	n/a	mg/L	01/26/05	0.000	300.000	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Nitrogen in Nitrate	NO3-N	<2.20e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<2.20e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.80e-2	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.50e-1	n/a	mg/L	01/26/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.50e-1	n/a	mg/L	01/26/05	0.000	300.000	U
LCS	Chloride	16887-00-6	2.06e+02	103.000	% Recov	01/26/05	80.000	120.000	
LCS	Fluoride	16984-48-8	1.02e+02	103.343	% Recov	01/26/05	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	9.99e+01	99.900	% Recov	01/26/05	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	9.01e+01	100.000	% Recov	01/26/05	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	1.84e+02	94.943	% Recov	01/26/05	80.000	120.000	
LCS	Sulfate	14808-79-8	3.83e+02	95.990	% Recov	01/26/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Hexavalent chromium

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Hexavalent chromium	18540-29-9	<0.003	n/a	RPD	01/26/05	0.000	15.000	U
MS	Hexavalent chromium	18540-29-9	0.0514	103.838	% Recov	01/26/05	85.000	115.000	
MSD	Hexavalent chromium	18540-29-9	0.0514	103.838	% Recov	01/26/05	85.000	115.000	
SPK-RPD	Hexavalent chromium	18540-29-9	103.838	0.000	RPD	01/26/05	0.000	20.000	
BATCH QC									
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	01/26/05	0.000	2.000	U
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	01/26/05	0.000	2.000	U
LCS	Hexavalent chromium	18540-29-9	0.0467	100.647	% Recov	01/26/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Cyanide by Midi/Spectrophotom

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Cyanide by Midi/Spectrophotom	57-12-5	89.8	89.800	% Recov	01/26/05	75.000	125.000	
MSD	Cyanide by Midi/Spectrophotom	57-12-5	87.3	87.300	% Recov	01/26/05	75.000	125.000	
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	87.300	2.823	RPD	01/26/05	0.000	20.000	
BATCH QC									
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	<1	n/a	ug/L	01/26/05	-4.000	4.000	U
BLNK-PREP	Cyanide by Midi/Spectrophotom	57-12-5	<1	n/a	ug/L	01/26/05	-4.000	4.000	U
LCS	Cyanide by Midi/Spectrophotom	57-12-5	91.1	91.100	% Recov	01/26/05	85.000	115.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: pH Direct Measurement

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000145									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	pH Direct Measurement	PH	7.621	0.223	RPD	01/25/05	0.000	20.000	
Lab ID: W050000151									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	pH Direct Measurement	PH	8.260	0.097	RPD	01/25/05	0.000	20.000	
BATCH QC									
LCS	pH Direct Measurement	PH	8.001	1.000	Ratio	01/25/05	0.900	1.100	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Ammonia (N) by IC

SAF Number: F04-032
Sample Date: 06/07/05
Receive Date:06/07/05

Lab ID: W050001685

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Ammonia (N) by IC	7664-41-7	4.20e-03	4.878	RPD	06/10/05	0.000	20.000	
MS	Ammonia (N) by IC	7664-41-7	1.62e-01	98.780	% Recov	06/10/05	75.000	125.000	
MSD	Ammonia (N) by IC	7664-41-7	1.60e-01	97.561	% Recov	06/10/05	75.000	125.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Ammonia (N) by IC	7664-41-7	<2.00e-3	n/a	mg/L	06/10/05	0.000	30.000	U
BLANK	Ammonia (N) by IC	7664-41-7	<2.00e-3	n/a	mg/L	06/10/05	0.000	30.000	U
LCS	Ammonia (N) by IC	7664-41-7	8.39e+01	101.820	% Recov	06/10/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

Lab ID: W050001669

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Chloride	16887-00-6	30.1128	2.666	RPD	06/01/05	0.000	20.000	
DUP	Fluoride	16984-48-8	<0.918	n/a	RPD	06/01/05	0.000	20.000	U
DUP	Nitrogen in Nitrite	NO2-N	<0.306	n/a	RPD	06/01/05	0.000	20.000	U
DUP	Nitrogen in Nitrate	NO3-N	63.0926	0.992	RPD	06/01/05	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<3.978	n/a	RPD	06/01/05	0.000	20.000	U
DUP	Sulfate	14808-79-8	60.7523	1.461	RPD	06/01/05	0.000	20.000	
MS	Chloride	16887-00-6	0.95841	96.809	% Recov	06/01/05	75.000	125.000	
MS	Fluoride	16984-48-8	0.462041	94.487	% Recov	06/01/05	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	0.489149	97.053	% Recov	06/01/05	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	0.430294	96.478	% Recov	06/01/05	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	0.897025	93.538	% Recov	06/01/05	75.000	125.000	
MS	Sulfate	14808-79-8	1.919069	97.415	% Recov	06/01/05	75.000	125.000	
MSD	Chloride	16887-00-6	0.982796	99.272	% Recov	06/01/05	75.000	125.000	
MSD	Fluoride	16984-48-8	0.469451	96.002	% Recov	06/01/05	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	0.473543	93.957	% Recov	06/01/05	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	0.432684	97.014	% Recov	06/01/05	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	0.86081	89.761	% Recov	06/01/05	75.000	125.000	
MSD	Sulfate	14808-79-8	1.898508	96.371	% Recov	06/01/05	75.000	125.000	

BATCH QC

BLANK	Chloride	16887-00-6	<3.4e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Chloride	16887-00-6	<3.4e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.8e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<1.8e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6e-3	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<6e-3	n/a	mg/L	06/01/05	0.000	300.000	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F04-032
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Nitrogen in Nitrate	NO3-N	<2.2e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<2.2e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.8e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<7.8e-2	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<0.15	n/a	mg/L	06/01/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<0.15	n/a	mg/L	06/01/05	0.000	300.000	U
LCS	Chloride	16887-00-6	193.8182	96.909	% Recov	06/01/05	80.000	120.000	
LCS	Fluoride	16984-48-8	94.5305	94.531	% Recov	06/01/05	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	92.282	92.282	% Recov	06/01/05	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	84.0396	92.555	% Recov	06/01/05	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	187.8854	96.948	% Recov	06/01/05	80.000	120.000	
LCS	Sulfate	14808-79-8	371.6082	93.135	% Recov	06/01/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Hexavalent chromium

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050001669									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Hexavalent chromium	18540-29-9	0.0130	0.000	RPD	06/02/05	0.000	15.000	
MS	Hexavalent chromium	18540-29-9	0.0430	87.045	% Recov	06/02/05	85.000	115.000	
MSD	Hexavalent chromium	18540-29-9	0.0430	87.045	% Recov	06/02/05	85.000	115.000	
SPK-RPD	Hexavalent chromium	18540-29-9	87.045	0.000	RPD	06/02/05	0.000	20.000	
BATCH QC									
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	06/02/05	0.000	2.000	U
BLANK	Hexavalent chromium	18540-29-9	<0.003	n/a	mg/L	06/02/05	0.000	2.000	U
LCS	Hexavalent chromium	18540-29-9	0.0410	88.362	% Recov	06/02/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: pH Direct Measurement

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050001669									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	pH Direct Measurement	PH	7.631	0.575	RPD	06/01/05	0.000	20.000	
BATCH QC									
LCS	pH Direct Measurement	PH	8.174	1.022	Ratio	06/01/05	0.900	1.100	

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20061212
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 10/02/06
Receive Date:10/02/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W060003428											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Fluoride	16984-48-8	0.4281		RPD			0.999	20.000		10/02/06
DUP	Nitrogen in Nitrate	NO3-N	6.1731		RPD			1.342	20.000		10/02/06
MS	Fluoride	16984-48-8	0.575	116.162	% Recov	75.000	125.000				10/02/06
MS	Nitrogen in Nitrate	NO3-N	0.4587	105.448	% Recov	75.000	125.000				10/02/06
MSD	Fluoride	16984-48-8	0.5964	120.485	% Recov	75.000	125.000				10/02/06
MSD	Nitrogen in Nitrate	NO3-N	0.4633	106.506	% Recov	75.000	125.000				10/02/06
BATCH QC											
BLANK	Fluoride	16984-48-8	<5.5e-3	n/a	mg/L	0.000	300.000			U	10/02/06
BLANK	Fluoride	16984-48-8	<5.5e-3	n/a	mg/L	0.000	300.000			U	10/02/06
BLANK	Nitrogen in Nitrate	NO3-N	<7.3e-3	n/a	mg/L	0.000	300.000			U	10/02/06
BLANK	Nitrogen in Nitrate	NO3-N	<7.3e-3	n/a	mg/L	0.000	300.000			U	10/02/06
LCS	Fluoride	16984-48-8	107.8038	107.804	% Recov	80.000	120.000				10/02/06
LCS	Nitrogen in Nitrate	NO3-N	88.6793	100.887	% Recov	80.000	120.000				10/02/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20061212
Matrix: WATER
Test: Hexavalent chromium

Sample Date: 10/02/06
Receive Date:10/02/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W060003428											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	<0.002		RPD			n/a	15.000	U	10/03/06
MS	Hexavalent chromium	18540-29-9	0.0549	103.977	% Recov	85.000	115.000				10/03/06
MSD	Hexavalent chromium	18540-29-9	0.0549	103.977	% Recov	85.000	115.000				10/03/06
SPK-RPD	Hexavalent chromium	18540-29-9	103.977		RPD			0.000	20.000		10/03/06
Lab ID: W06P000002											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.2480		RPD			0.000	15.000		10/03/06
MS	Hexavalent chromium	18540-29-9	0.0523	99.053	% Recov	85.000	115.000				10/03/06
MSD	Hexavalent chromium	18540-29-9	0.0523	99.053	% Recov	85.000	115.000				10/03/06
SPK-RPD	Hexavalent chromium	18540-29-9	99.053		RPD			0.000	20.000		10/03/06
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	10/03/06
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	10/03/06
LCS	Hexavalent chromium	18540-29-9	0.0512	103.018	% Recov	80.000	120.000				10/03/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 07/12/07
Receive Date:07/12/07

Lab ID: W07GR01755

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	Chloride	16887-00-6	28.5481		RPD			0.525	20.000		07/13/07
DUP	Fluoride	16984-48-8	4.8225		RPD			13.166	20.000		07/13/07
DUP	Nitrogen in Nitrite	NO2-N	0.313		RPD			21.515	20.000 *		07/13/07
DUP	Nitrogen in Nitrate	NO3-N	292.5352		RPD			0.088	20.000		07/13/07
DUP	Sulfate	14808-79-8	61.7612		RPD			0.197	20.000		07/13/07
MS	Chloride	16887-00-6	0.92502	93.436	% Recov	75.000	125.000				07/13/07
MS	Fluoride	16984-48-8	0.58246	116.028	% Recov	75.000	125.000				07/13/07
MS	Nitrogen in Nitrite	NO2-N	0.4669	94.706	% Recov	75.000	125.000				07/13/07
MS	Nitrogen in Nitrate	NO3-N	0.371882	82.457	% Recov	75.000	125.000				07/13/07
MS	Sulfate	14808-79-8	2.0714	104.616	% Recov	75.000	125.000				07/13/07
MSD	Chloride	16887-00-6	0.9462	95.576	% Recov	75.000	125.000				07/13/07
MSD	Fluoride	16984-48-8	0.5828	116.096	% Recov	75.000	125.000				07/13/07
MSD	Nitrogen in Nitrite	NO2-N	0.46692	94.710	% Recov	75.000	125.000				07/13/07
MSD	Nitrogen in Nitrate	NO3-N	0.373365	82.786	% Recov	75.000	125.000				07/13/07
MSD	Sulfate	14808-79-8	2.04932	103.501	% Recov	75.000	125.000				07/13/07
SPK-RPD	Chloride	16887-00-6	95.576		RPD			2.264	20.000		07/13/07
SPK-RPD	Fluoride	16984-48-8	116.096		RPD			0.059	20.000		07/13/07
SPK-RPD	Nitrogen in Nitrite	NO2-N	94.710		RPD			0.004	20.000		07/13/07
SPK-RPD	Nitrogen in Nitrate	NO3-N	82.786		RPD			0.398	20.000		07/13/07
SPK-RPD	Sulfate	14808-79-8	103.501		RPD			1.072	20.000		07/13/07

BATCH QC

BLANK	Chloride	16887-00-6	<3e-2	n/a	mg/L	0.000	0.030			U	07/13/07
BLANK	Chloride	16887-00-6	<3e-2	n/a	mg/L	0.000	0.030			U	07/13/07
BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	07/13/07
BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	07/13/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Nitrogen in Nitrite	NO2-N	<1e-2	n/a	mg/L	0.000	0.020			U	07/13/07
BLANK	Nitrogen in Nitrite	NO2-N	<1e-2	n/a	mg/L	0.000	0.020			U	07/13/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	07/13/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	07/13/07
BLANK	Sulfate	14808-79-8	<7e-2	n/a	mg/L	0.000	0.200			U	07/13/07
BLANK	Sulfate	14808-79-8	<7e-2	n/a	mg/L	0.000	0.200			U	07/13/07
LCS	Chloride	16887-00-6	195.9312	97.966	% Recov	80.000	120.000				07/13/07
LCS	Fluoride	16984-48-8	106.2449	105.193	% Recov	80.000	120.000				07/13/07
LCS	Nitrogen in Nitrite	NO2-N	97.0018	97.391	% Recov	80.000	120.000				07/13/07
LCS	Nitrogen in Nitrate	NO3-N	91.8533	100.716	% Recov	80.000	120.000				07/13/07
LCS	Sulfate	14808-79-8	400.1715	100.043	% Recov	80.000	120.000				07/13/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20071194
Matrix: WATER
Test: Hexavalent chromium

Sample Date: 07/12/07
Receive Date:07/12/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR01755											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.1622		RPD			0.000	15.000		07/12/07
MS	Hexavalent chromium	18540-29-9	0.0511	96.780	% Recov	85.000	115.000				07/12/07
MSD	Hexavalent chromium	18540-29-9	0.0498	94.318	% Recov	85.000	115.000				07/12/07
SPK-RPD	Hexavalent chromium	18540-29-9	94.318		RPD			2.577	20.000		07/12/07
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	07/12/07
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	07/12/07
LCS	Hexavalent chromium	18540-29-9	0.0495	99.598	% Recov	80.000	120.000				07/12/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071194
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 07/06/07
Receive Date:07/06/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR01703											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	172		RPD			0.583	20.000		07/16/07
Lab ID: W07P001309											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	142		RPD			0.707	20.000		07/16/07
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	42.73	95.379	%Recove	80.000	120.000				07/16/07
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	122	106.087	%Recove	80.000	120.000				07/16/07
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	123.8	107.652	%Recove	80.000	120.000				07/16/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071433
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/13/07
Receive Date:08/13/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02140											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	26.6859		RPD			0.914	20.000		08/14/07
DUP	Fluoride	16984-48-8	0.3182		RPD			2.636	20.000		08/14/07
DUP	Nitrogen in Nitrite	NO2-N	<1e-2		RPD			n/a	20.000	U	08/14/07
DUP	Nitrogen in Nitrate	NO3-N	32.4586		RPD			0.612	20.000		08/14/07
DUP	Sulfate	14808-79-8	51.6551		RPD			1.246	20.000		08/14/07
MS	Chloride	16887-00-6	1.00144	101.156	% Recov	75.000	125.000				08/14/07
MS	Fluoride	16984-48-8	0.5164	102.869	% Recov	75.000	125.000				08/14/07
MS	Nitrogen in Nitrite	NO2-N	0.5274	105.904	% Recov	75.000	125.000				08/14/07
MS	Nitrogen in Nitrate	NO3-N	0.39893	88.455	% Recov	75.000	125.000				08/14/07
MS	Sulfate	14808-79-8	1.97971	99.985	% Recov	75.000	125.000				08/14/07
MSD	Chloride	16887-00-6	1.02539	103.575	% Recov	75.000	125.000				08/14/07
MSD	Fluoride	16984-48-8	0.5267	104.920	% Recov	75.000	125.000				08/14/07
MSD	Nitrogen in Nitrite	NO2-N	0.5438	109.197	% Recov	75.000	125.000				08/14/07
MSD	Nitrogen in Nitrate	NO3-N	0.38099	84.477	% Recov	75.000	125.000				08/14/07
MSD	Sulfate	14808-79-8	1.98953	100.481	% Recov	75.000	125.000				08/14/07
SPK-RPD	Chloride	16887-00-6	103.575		RPD			2.363	20.000		08/14/07
SPK-RPD	Fluoride	16984-48-8	104.920		RPD			1.974	20.000		08/14/07
SPK-RPD	Nitrogen in Nitrite	NO2-N	109.197		RPD			3.062	20.000		08/14/07
SPK-RPD	Nitrogen in Nitrate	NO3-N	84.477		RPD			4.601	20.000		08/14/07
SPK-RPD	Sulfate	14808-79-8	100.481		RPD			0.495	20.000		08/14/07
BATCH QC											
BLANK	Chloride	16887-00-6	<3e-2	n/a	mg/L	0.000	0.030			U	08/14/07
BLANK	Chloride	16887-00-6	<3e-2	n/a	mg/L	0.000	0.030			U	08/14/07
BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	08/14/07
BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	08/14/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071433
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Nitrogen in Nitrite	NO2-N	<1e-2	n/a	mg/L	0.000	0.020			U	08/14/07
BLANK	Nitrogen in Nitrite	NO2-N	<1e-2	n/a	mg/L	0.000	0.020			U	08/14/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	08/14/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	08/14/07
BLANK	Sulfate	14808-79-8	<7e-2	n/a	mg/L	0.000	0.200			U	08/14/07
BLANK	Sulfate	14808-79-8	<7e-2	n/a	mg/L	0.000	0.200			U	08/14/07
LCS	Chloride	16887-00-6	204.9727	102.486	% Recov	80.000	120.000				08/13/07
LCS	Fluoride	16984-48-8	109.8009	108.714	% Recov	80.000	120.000				08/13/07
LCS	Nitrogen in Nitrite	NO2-N	93.501	93.501	% Recov	80.000	120.000				08/13/07
LCS	Nitrogen in Nitrate	NO3-N	93.8972	102.957	% Recov	80.000	120.000				08/13/07
LCS	Sulfate	14808-79-8	407.6552	101.914	% Recov	80.000	120.000				08/13/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071433
Matrix: WATER
Test: Hexavalent chromium

Sample Date: 08/13/07
Receive Date:08/13/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02143											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	<0.002		RPD			n/a	15.000	U	08/13/07
MS	Hexavalent chromium	18540-29-9	0.0526	99.621	% Recov	85.000	115.000				08/13/07
MSD	Hexavalent chromium	18540-29-9	0.0526	99.621	% Recov	85.000	115.000				08/13/07
SPK-RPD	Hexavalent chromium	18540-29-9	99.621		RPD			0.000	20.000		08/13/07
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	08/13/07
BLANK	Hexavalent chromium	18540-29-9	<0.002	n/a	mg/L	0.000	2.000			U	08/13/07
LCS	Hexavalent chromium	18540-29-9	0.0498	100.201	% Recov	80.000	120.000				08/13/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071433
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 08/09/07
Receive Date:08/09/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02103											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	195.1		RPD			1.071	20.000		08/22/07
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	123.9	107.739	%Recove	80.000	120.000				08/22/07
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	120.7	104.957	%Recove	80.000	120.000				08/22/07
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	119.6	104.000	%Recove	80.000	120.000				08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071455
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/15/07
Receive Date:08/15/07

Lab ID: W07GR02160

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	Fluoride	16984-48-8	0.2954		RPD			6.718	20.000		08/15/07
DUP	Nitrogen in Nitrate	NO3-N	12.2351		RPD			0.369	20.000		08/15/07
MS	Fluoride	16984-48-8	0.5393	107.430	% Recov	75.000	125.000				08/15/07
MS	Nitrogen in Nitrate	NO3-N	0.4454	98.758	% Recov	75.000	125.000				08/15/07
MSD	Fluoride	16984-48-8	0.5426	108.088	% Recov	75.000	125.000				08/15/07
MSD	Nitrogen in Nitrate	NO3-N	0.43878	97.290	% Recov	75.000	125.000				08/15/07
SPK-RPD	Fluoride	16984-48-8	108.088		RPD			0.611	20.000		08/15/07
SPK-RPD	Nitrogen in Nitrate	NO3-N	97.290		RPD			1.498	20.000		08/15/07

BATCH QC

BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	08/15/07
BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	08/15/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	08/15/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	08/15/07
LCS	Fluoride	16984-48-8	106.0779	105.028	% Recov	80.000	120.000				08/15/07
LCS	Nitrogen in Nitrate	NO3-N	92.9285	101.895	% Recov	80.000	120.000				08/15/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20071455
Matrix: WATER
Test: Hexavalent chromium

Sample Date: 08/15/07
Receive Date:08/15/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02160											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.0023		RPD			n/a	15.000		08/15/07
MS	Hexavalent chromium	18540-29-9	0.0524	99.242	% Recov	85.000	115.000				08/15/07
MSD	Hexavalent chromium	18540-29-9	0.0524	99.242	% Recov	85.000	115.000				08/15/07
SPK-RPD	Hexavalent chromium	18540-29-9	99.242		RPD			0.000	20.000		08/15/07
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	< 0.002	n/a	mg/L	0.000	2.000			U	08/15/07
LCS	Hexavalent chromium	18540-29-9	0.0534	107.445	% Recov	80.000	120.000				08/15/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20072125
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 11/29/07
Receive Date:11/29/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR03140											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Fluoride	16984-48-8	0.3033		RPD			1.505	20.000		11/30/07
DUP	Nitrogen in Nitrate	NO3-N	33.5824		RPD			0.163	20.000		11/30/07
MS	Fluoride	16984-48-8	0.5024	100.080	% Recov	75.000	125.000				11/30/07
MS	Nitrogen in Nitrate	NO3-N	0.46753	103.665	% Recov	75.000	125.000				11/30/07
MSD	Fluoride	16984-48-8	0.4968	98.964	% Recov	75.000	125.000				11/30/07
MSD	Nitrogen in Nitrate	NO3-N	0.45993	101.980	% Recov	75.000	125.000				11/30/07
SPK-RPD	Fluoride	16984-48-8	98.964		RPD			1.121	20.000		12/01/07
SPK-RPD	Nitrogen in Nitrate	NO3-N	101.980		RPD			1.639	20.000		12/01/07
BATCH QC											
BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	11/30/07
BLANK	Fluoride	16984-48-8	<6e-3	n/a	mg/L	0.000	0.030			U	11/30/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	11/30/07
BLANK	Nitrogen in Nitrate	NO3-N	<5e-3	n/a	mg/L	0.000	0.040			U	11/30/07
LCS	Fluoride	16984-48-8	105.7002	104.654	% Recov	80.000	120.000				11/30/07
LCS	Nitrogen in Nitrate	NO3-N	93.6139	102.647	% Recov	80.000	120.000				11/30/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20072125
Matrix: WATER
Test: Hexavalent chromium

Sample Date: 11/29/07
Receive Date:11/29/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR03133											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Hexavalent chromium	18540-29-9	0.003		RPD			0.000	15.000		11/30/07
MS	Hexavalent chromium	18540-29-9	0.0527	100.000	% Recov	85.000	115.000				11/30/07
MSD	Hexavalent chromium	18540-29-9	0.0527	100.000	% Recov	85.000	115.000				11/30/07
SPK-RPD	Hexavalent chromium	18540-29-9	100.000		RPD			0.000	20.000		11/30/07
BATCH QC											
BLANK	Hexavalent chromium	18540-29-9	< 0.002	n/a	mg/L	0.000	2.000			U	11/30/07
LCS	Hexavalent chromium	18540-29-9	0.0514	103.838	% Recov	80.000	120.000				11/30/07

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90900
Project Number F09-043

QC Batch 57634
Associated Samples 90900001, 90900002

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13317**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	08/18/09
LCS			**QC Sample #13319**							
Hexavalent chromium	18540-29-9		0.0486	mg/L	96.8	90 - 110				08/18/09
DUP			**QC Sample #13320**							
			Original 90900001							
Hexavalent chromium	18540-29-9	0.00300	0.00300	mg/L			0.00	20	B	08/18/09
MS			**QC Sample #13321**							
			Original 90900001							
Hexavalent chromium	18540-29-9	0.00300	0.0412	mg/L	102.6	85 - 115				08/18/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF90900
Project Number F09-043

QC Batch 58539
Associated Samples 90900001, 90900002

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13404**							
Nitrate-N	NO3-N		<0.031	ug/mL					U	08/19/09
LCS			**QC Sample #13405**							
Nitrate-N	NO3-N		0.884	ug/mL	100.3	90 - 110				08/19/09
DUP			**QC Sample #13406**							
			Original	**90910001**						
Nitrate-N	NO3-N		<0.031	ug/mL			0.00	20	U	08/19/09
MS			**QC Sample #13407**							
			Original	**90910001**						
Nitrate-N	NO3-N		0.441	ug/mL	99.1	80 - 120				08/19/09
MSD			**QC Sample #13408**							
			Original	**90910001**				**Paired**	**13407**	
Nitrate-N	NO3-N		0.459	ug/mL	103	80 - 120	3.90	20		08/19/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF91148

QC Batch 64462
Associated Samples 91148001

Test Hexavalent chromium Discrete Analyzer

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #15653**							
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	09/25/09
LCS			**QC Sample #15655**							
Hexavalent chromium	18540-29-9		0.0492	mg/L	98	90 - 110				09/25/09
DUP			**QC Sample #15656**							
			Original 91148001							
Hexavalent chromium	18540-29-9	<0.0020	<0.0020	mg/L			0.00	20	U	09/25/09
MS			**QC Sample #15657**							
			Original 91148001							
Hexavalent chromium	18540-29-9	<0.0020	0.0405	mg/L	100.8	85 - 115				09/25/09

Quality Control Report

Attention Michael Neely
Department Inorganic

Group # WSCF91148

QC Batch 64539
Associated Samples 91148001

Test Anions by Ion Chromatography (Water)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #15685**							
Nitrate-N	NO3-N		<0.031	ug/mL					U	09/25/09
LCS			**QC Sample #15686**							
Nitrate-N	NO3-N		0.891	ug/mL	101.1	90 - 110				09/25/09
DUP			**QC Sample #15687**							
			Original 91154006							
Nitrate-N	NO3-N		2.45	ug/mL			0.00	20	D	09/25/09
MS			**QC Sample #15688**							
			Original 91154006							
Nitrate-N	NO3-N		0.857	ug/mL	96.3	80 - 120			D	09/25/09
MSD			**QC Sample #15689**							
			Original 91154006					**Paired**	**15688**	
Nitrate-N	NO3-N		0.744	ug/mL	83.6	80 - 120	14.10	20	D	09/25/09

Date: 14 April 2010
To: CH2M Hill (technical representative)
From: Analytical Quality Associates, Inc.
Project: CPP 200 Area, 200 Area SGRP, and 200 Area
Subject: Radiochemical - Sample Data Groups (SDGs) WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051557, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678 and WSCF90895

INTRODUCTION

This memorandum presents the results of data validation for SDGs WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051557, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678 and WSCF90895 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
B23C91	1/13/2010	Water	C	Tritium
B23CX6	2/10/2010	Water	C	Tritium
B1BJC2	11/22/2004	Water	C	Tritium, Tc-99, Sr-89/90, Np-237, Gamma Spectrometry
B1BJD9	12/07/2004	Water	C	Tritium, Tc-99, Sr-89/90, Np-237, Gamma Spectrometry
B1BJH6	1/25/2005	Water	C	Tritium, Tc-99, Sr-89/90, Np-237, Gamma Spectrometry
B1D7K5	6/01/2005	Water	C	Tritium, Tc-99, Sr-89/90, Isotopic-U, Gamma Spectrometry
B1JX48	10/02/2006	Water	C	Tc-99, Sr-89/90
B1L952	7/12/2007	Water	C	Tritium, Tc-99
B1L965	8/13/2007	Water	C	Tritium, Tc-99
B1P0X1	8/15/2007	Water	C	Tc-99, Sr-89/90, Gamma Spectrometry
B1P0M7	11/29/2007	Water	C	Tc-99, Sr-89/90, Gamma Spectrometry
B1YMF3	6/29/2009	Water	C	Tritium, Gamma Spectrometry
B21CK6	8/17/2009	Water	C	Tritium, Gamma Spectrometry

Data validation was conducted in accordance with the CHPRC validation statement of work and the following sampling and analysis plans (SAPs).

Sampling Analysis Plan for Eleven ARRA Wells to Support the 200 West Groundwater Treatment System in Fiscal Year 2010, DOE/RL-2009-95, Rev. 0.

Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network, DOE/RL-2002-17, Rev. 0.

Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant, DOE/RL-2006-19, Rev. 0.

Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006, DOE/RL-2006-46, Rev. 0.

Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit, DOE/RL-2008-57, Rev. 1.

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, or five half-lives, whichever is shorter. Sample preservation for all analyses except tritium requires acid preservation with nitric acid to pH <2.

The samples were analyzed within the prescribed holding time 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 WSCF20050155, the Sr-89/90 laboratory blank result was > the minimum detectable concentration (MDC). The associated sample result was a non-detect and should not be qualified.

For SDG WSCF20051557, the U-233/234, U-235 and U-238 laboratory blank results were > the MDCs. The U-233/234 and U-238 results for sample B1D7K5 were detects >5X the blank results and should not be qualified. The U-235 result for sample B1D7K5 was a detect <5X the blank result and should be qualified as an estimate and flagged "J."

Trip Blanks

No trip blanks were submitted for analysis.

Field Blanks

No field blanks were submitted for analysis.

Equipment Blanks

No equipment blanks were submitted for analysis.

- **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 SAPs DOE/RL-2009-95 and DOE/RL-2008-57, the laboratory control sample accuracy limits are 80% to 120% at a minimum, and the statistical ones established by the analytical laboratory if more stringent. The matrix spike sample accuracy limits are the ones established by the analytical laboratory. According to SAPs DOE/RL-2002-17, DOE/RL-2006-19 and DOE/RL-2006-46, the laboratory control sample and matrix spike sample accuracy limits are 70% to 130%. The limits for reported analytes not listed in the SAPs are specified by the DV procedure.

Matrix Spike (MS) Samples

All MS recoveries were acceptable.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exceptions.

For SDG WSCF20042209, the Np-237 LCS recovery was < the lower acceptance limit but ≥30%. The Np-237 result for sample B1BJC2 was a non-detect and should be qualified as an estimate and flagged "UJ."

For SDG WSCF20042338, the Np-237 LCS recovery was <30%. The Np-237 result for sample B1BJD9 was a non-detect and should be qualified as unusable and flagged "UR."

For SDG WSCF20050155, the Np-237 LCS recovery was <30%. The Np-237 result for sample B1BJH6 was a detect and should be qualified as unusable and flagged "R."

Carrier/Tracer Recovery Factors

All carrier/tracer recovery factors were acceptable with the following exceptions.

For SDG WSCF20042209, tracer was not used for Np-237 analysis and a matrix spike was not performed. The Np-237 result for sample B1BJC2 was a non-detect and should be qualified as an estimate and flagged "UJ."

For SDG WSCF20042338, tracer was not used for Np-237 analysis and a matrix spike was not performed. The Np-237 result for sample B1BJD9 was a non-detect and would be qualified as an estimate and flagged "UJ," but was further qualified as unusable and flagged "UR" due to a very low LCS recovery.

For SDG WSCF20050155, tracer was not used for Np-237 analysis and a matrix spike was not performed. The Np-237 result for sample B1BJH6 was a detect and would be qualified as an estimate and flagged "J," but was further qualified as unusable and flagged "R" due to a very low LCS recovery.

- **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 SAPs DOE/RL-2009-95 and DOE/RL-2008-57, the relative percent difference (RPD) limits are ±20%. According to SAP DOE/RL-2002-17, the precision limits are overlap at the ±3-sigma total propagated uncertainty. According to SAPs DOE/RL-2006-19 and DOE/RL-2006-46, the RPD limits are ±30%. The RPD limits for reported analytes not listed in the SAPs are specified by the DV procedure. When duplicate RPDs exceed the limits and have associated results <5X the SAP required detection limits (or <5X the laboratory required detection limits for analytes not listed in the SAPs) with differences <1X the required detection limits no precision infraction occurred. When no required detection limits are provided and the sample and duplicate results are statistically equal (Duplicate Error Ratio <3) no precision infraction occurred.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable with the following exception.

For SDG WSCF20050155, the Np-237 RPD was >20%, a required detection limit was not provided, and the DER was most likely >3 (duplicate uncertainty was not provided). The Np-237 result for sample B1BJH6 was a detect and would be qualified as an estimate and flagged "J," but was further qualified as unusable and flagged "R" due to a very low LCS recovery.

Field Duplicate Samples

No field duplicates were submitted for analysis.

Field Split Samples

No field splits were submitted for analysis.

- **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 were below the CRDLs with the following exception.

For SDG WSCF20071455, sample B1P0X1 had a Sr-89/90 MDC > the CRDL.

- **Completeness**

SDGs WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051557, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678 and WSCF90895 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 Np-237 was 33%. The completion percentage for the remaining radiochemical analytes was 100%.

MAJOR DEFICIENCIES

Major deficiencies leading to qualification of Np-237 results for samples B1BJD9 and B1BJH6 as unusable were due to very low LCS recoveries.

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

HNF-20434, Rev. 0, *Data Validation Procedure for Radiochemical Analyses*, June 2004.

DOE/RL-2009-95, Rev. 0, *Sampling Analysis Plan for Eleven ARRA Wells to Support the 200 West Groundwater Treatment System in Fiscal Year 2010*, November 2009.

DOE/RL-2002-17, Rev. 0, *Sampling and Analysis Plan for the 200-ZP-1 Groundwater Monitoring Well Network*, June 2002.

DOE/RL-2006-19, Rev. 0, *Sampling and Analysis Plan for Characterizing Groundwater in 200-West Area in Vicinity of Old Laundry Facility and T Plant*, March 2006.

DOE/RL-2006-46, Rev. 0, *Sampling and Analysis Plan for Deep Groundwater Wells 299-W11-48 (C5243) and 299-W10-32 (C5244) Near Waste Management Area T in the 200-ZP-1 Operable Unit, Fiscal Year 2006*, August 2006.

DOE/RL-2008-57, Rev. 1, *Sampling and Analysis Plan for the First Set of Remedial Action Wells in the 200-ZP-1 Groundwater Operable Unit*, August 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

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

- **U** — The constituent was analyzed for 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.

- **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			
SDG: See Comments	Reviewer: AQA	Project: CPP 200 Area, 200 Area SGRP, and 200 Area	Page 1 of 1
Analyte(s)	**Qualifier**	**Samples Affected**	**Reason**
Np-237	UJ	B1BJC2	Low LCS recovery and lack of tracer data
Np-237	**UR**	B1BJD9	Very low LCS recovery and lack of tracer data
Np-237	**R**	B1BJH6	Very low LCS recovery, lack of tracer data, and poor laboratory duplicate precision
U-235	J	B1D7K5	Laboratory blank contamination

Comments: SDGs WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051557, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678 and WSCF90895

Appendix 3

Annotated Laboratory Reports

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100103

Sample # 100103001
SAF# F10-065
Sample ID B23C91

Matrix WATER
Sampled 01/13/10
Received 01/13/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
H3 EICHROM										**01/15/10**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		3400	720	pCi/L	1	200		01/17/10

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 # WSCF100275

Sample # 100275001
SAF# F10-065
Sample ID B23CX6

Matrix WATER
Sampled 02/10/10
Received 02/10/10

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
H3 EICHROM										**02/11/10**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		1100	260	pCi/L	1	180		02/12/10

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: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042209

Sample #	Client ID	CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry													
W040002315	B1BJC2 TRENT	10045-97-3	Cesium-137	WATER	LA-508-481	U	-1.74	pCi/L	1.00	7.2	12/21/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	WATER	LA-508-481		+- 4.2	pCi/L	1.00	0.0	12/21/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	13994-20-2 UJ	Neptunium-237	WATER	LA-508-471	U	-9.80e-03	pCi/L	1.00	0.072	12/14/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	E,T,C	Np-237 by AEA Total Ctng Error	WATER	LA-508-471		+- 0.098	pCi/L	1.00	0.0	12/14/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	SR-RAD	Strontium-89/90	WATER	LA-508-415	U	-0.100	pCi/L	1.00	0.60	12/01/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	E,T,C	Sr-89/90 Rel. Count Error	WATER	LA-508-415		+- 0.60	pCi/L	1.00	0.0	12/01/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	14133-76-7	Technetium-99	WATER	LA-508-421		73.3	pCi/L	1.00	2.2	11/29/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	E,T,C	Tc-99 Counting Error	WATER	LA-508-421		+- 15	pCi/L	1.00	0.0	11/29/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	10028-17-8	Tritium	WATER	LA-508-421		600	pCi/L	1.00	1.9e+02	11/24/04	11/22/04	11/22/04
W040002315	B1BJC2 TRENT	E,T,C	H-3 Rel. % Count Error	WATER	LA-508-421		+- 1.3e+02	pCi/L	1.00	0.0	11/24/04	11/22/04	11/22/04

LS
4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
C - The Analyte was found in the Associated Blank.
E - Analyte is an estimate, has potentially larger errors
J - Analyte is an estimate, has potentially larger errors
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20042338

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry															
W040002540	B1BJD9	GRP	TRENT	10045-97-3	Cesium-137	WATER	LA-508-481	U	-5.62	pCi/L	1.00	11	12/10/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	WATER	LA-508-481		+- 6.4	pCi/L	1.00	0.0	12/10/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	13994-20-2 UR	Neptunium-237	WATER	LA-508-471	U	0.0120	pCi/L	1.00	0.016	01/04/05	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	E,T,C	Np-237 by AEA Total Ctng Error	WATER	LA-508-471		+- 0.12	pCi/L	1.00	0.0	01/04/05	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	SR-RAD	Strontium-89/90	WATER	LA-508-415	U	-1.40	pCi/L	1.00	1.9	12/14/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	E,T,C	Sr-89/90 Rel. Count Error	WATER	LA-508-415		+- 1.5	pCi/L	1.00	0.0	12/14/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	14133-76-7	Technetium-99	WATER	LA-508-421		55.0	pCi/L	1.00	2.3	12/09/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	E,T,C	Tc-99 Counting Error	WATER	LA-508-421		+- 11	pCi/L	1.00	0.0	12/09/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	10028-17-8	Tritium	WATER	LA-508-421		1.20e+03	pCi/L	1.00	2.1e+02	12/13/04	12/07/04	12/07/04
W040002540	B1BJD9	GRP	TRENT	E,T,C	H-3 Rel. % Count Error	WATER	LA-508-421		+- 3.0e+02	pCi/L	1.00	0.0	12/13/04	12/07/04	12/07/04

LS
4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)

U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20050155

Sample #	Client ID		CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry														
W050000144	B1BJH6	TRENT	10045-97-3	Cesium-137	WATER	LA-508-481	U	-2.19	pCi/L	1.00	7.7	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	WATER	LA-508-481		+- 4.5	pCi/L	1.00	0.0	01/26/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	13994-20-2 R	Neptunium-237	WATER	LA-508-471	X	0.0270	pCi/L	1.00	0.024	02/03/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	E,T,C	Np-237 by AEA Total Ctng Error	WATER	LA-508-471		+- 0.027	pCi/L	1.00	0.0	02/03/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	SR-RAD	Strontium-89/90	WATER	LA-508-415	U	-0.800	pCi/L	1.00	0.90	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	E,T,C	Sr-89/90 Rel. Count Error	WATER	LA-508-415		+- 0.89	pCi/L	1.00	0.0	02/01/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	14133-76-7	Technetium-99	WATER	LA-508-421		53.0	pCi/L	1.00	2.3	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	E,T,C	Tc-99 Counting Error	WATER	LA-508-421		+- 11	pCi/L	1.00	0.0	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	10028-17-8	Tritium	WATER	LA-508-421	U	160	pCi/L	1.00	2.0e+02	02/02/05	01/25/05	01/25/05
W050000144	B1BJH6	TRENT	E,T,C	H-3 Rel. % Count Error	WATER	LA-508-421		+- 1.7e+02	pCi/L	1.00	0.0	02/02/05	01/25/05	01/25/05

LS
4-14-2010

MDL = Minimum Detection Limit
RQ = Result Qualifier

B - The analyte < the RDL but > = the IDL/MDL (inorganic)
J - Analyte is an estimate, has potentially larger errors
X - Other flags and notes described in the comments/narrative.
C - The Analyte was found in the Associated Blank.
U - Analyzed for but not detected above limiting criteria.

DF = Dilution Factor

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-032: F04-032

Group #: WSCF20051157

Sample #	Client ID		CAS #		Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry															
W050001669	81D7K5	TRENT	10045-97-3		Cesium-137	WATER	LA-508-481	U	-1.94	pCi/L	1.00	7.2	06/06/05	06/01/05	06/01/05
W050001669	81D7K5	TRENT	E,T,C		Cs-137 Rel. Count Error (GEA)	WATER	LA-508-481		+- 4.2	pCi/L	1.00	0.0	06/06/05	06/01/05	06/01/05
W050001669	81D7K5	TRENT	SR-RAD		Strontium-89/90	WATER	LA-508-415	U	-1.10	pCi/L	1.00	0.70	06/08/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	E,T,C		Sr-89/90 Rel. Count Error	WATER	LA-508-415		+- 1.1	pCi/L	1.00	0.0	06/08/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	14133-76-7		Technetium-99	WATER	LA-508-421		600	pCi/L	1.00	2.4	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	E,T,C		Tc-99 Counting Error	WATER	LA-508-421		+- 1.2e+02	pCi/L	1.00	0.0	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	10028-17-8		Tritium	WATER	LA-508-421		5.80e+04	pCi/L	1.00	2.2e+02	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	E,T,C		H-3 Rel. % Count Error	WATER	LA-508-421		+- 1.2e+04	pCi/L	1.00	0.0	06/07/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	U-233/234		Uranium-233/234	WATER	LA-508-471		1.20	pCi/L	1.00	0.011	06/24/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	E,T,C		U-233/234 AEA Total Cntg Error	WATER	LA-508-471		+- 0.29	pCi/L	1.00	0.0	06/24/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	15117-96-1	J	Uranium-235	WATER	LA-508-471		0.0440	pCi/L	1.00	0.013	06/24/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	E,T,C		U-235 by AEA Total Cntg Error	WATER	LA-508-471		+- 0.031	pCi/L	1.00	0.0	06/24/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	U-238		Uranium-238	WATER	LA-508-471		0.750	pCi/L	1.00	0.011	06/24/05	06/01/05	06/01/05
W050001669	B1D7K5	TRENT	E,T,C		U-238 by AEA Total Cntg Error	WATER	LA-508-471		+- 0.20	pCi/L	1.00	0.0	06/24/05	06/01/05	06/01/05

LS
4-14-2010

MDL=Minimum Detection Limit
RQ=Result Qualifier
DF=Dilution Factor

B - The Analyte detected in both the BLANK and the SAMPLE (org.)
J - Analyte is an estimate, has potentially larger errors
B - The analyte < the RDL but >= the IDL/MDL (inorganic)
U - Analyzed for but not detected above limiting criteria.

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent A0-21
SAF Number: F06-022
Sample # W060003428
Client ID: B1JX48 TRENT WSCF

Matrix: WATER

Group #: WSCF20061212
Department: Radiochemistry
Sampled: 10/02/06
Received: 10/02/06

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	0.610	pCi/L	+-1.46	pCi/L	1.00	0.98		10/09/06
TC99 by Liquid Scin.											
Technetium-99	14133-76-7	LA-508-421	U	1.80	pCi/L	+-1.44	pCi/L	1.00	2.2		10/05/06

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

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
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: F07-006
Sample # W07GR01755
Client ID: B1L952 TRENT WSCF

Matrix: WATER

Group #: WSCF20071194
Department: Radiochemistry
Sampled: 07/12/07
Received: 07/12/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Technetium-99	14133-76-7	LA-508-421		330	pCi/L	+-66.0	pCi/L	1.00	2.5		07/21/07
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		3.40e+03	pCi/L	+-714	pCi/L	1.00	2.3e+02		07/17/07

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)
U - Analyzed for but not detected above limiting criteria.(org)

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: F07-006
Sample # W07GR02135
Client ID: B1L965 TRENT WSCF

Matrix: WATER

Group #: WSCF20071433
Department: Radiochemistry
Sampled: 08/13/07
Received: 08/13/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Technetium-99	14133-76-7	LA-508-421	U	1.80	pCi/L	+-2.66	pCi/L	1.00	4.3		08/23/07
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421	U	110	pCi/L	+-145	pCi/L	1.00	2.2e+02		08/25/07

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

C - The Analyte was found in the Associated Blank.(inorg)
E - Analyte is an estimate, has potentially larger errors(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: F07-052
Sample # W07GR02157
Client ID: B1P0X1 TRENT WSCF

Matrix: WATER

Group #: WSCF20071455
Department: Radiochemistry
Sampled: 08/15/07
Received: 08/15/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481	U	-0.865	pCi/L	+-4.44	pCi/L	1.00	7.7		08/21/07
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	-30.0	pCi/L	+-30.0	pCi/L	1.00	11		08/22/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		91.8	Percent			1.00	0.0		08/22/07
TC99 by Liquid Scin.											
Technetium-99	14133-76-7	LA-508-421	U	-4.50	pCi/L	+-4.50	pCi/L	1.00	4.3		08/23/07

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

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)

J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
SAF Number: F07-052
Sample # W07GR03133
Client ID: B1P0M7 TRENT WSCF

Matrix: WATER

Group #: WSCF20072125
Department: Radiochemistry
Sampled: 11/29/07
Received: 11/29/07

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Gamma Energy Analysis-grd H2O											
Cesium-137	10045-97-3	LA-508-481	U	-0.575	pCi/L	+-4.57	pCi/L	1.00	8.0		12/04/07
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415	U	0.0170	pCi/L	+-0.170	pCi/L	1.00	1.2		12/10/07
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		83.0	Percent			1.00	0.0		12/10/07
TC99 by Liquid Scin.											
Technetium-99	14133-76-7	LA-508-421		260	pCi/L	+-52.0	pCi/L	1.00	5.9		12/30/07

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)
J - Analyte < lowest calibration but > = MDL.(org)
U - Analyzed for but not detected above limiting criteria.(org)
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 Michael Neely
Department Radiochemistry

Group # WSCF90678
Project Number F09-009

Sample # 90678001
SAF# F09-009
Sample ID B1YMF3

Matrix WATER
Sampled 06/29/09
Received 06/29/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
GEA Prep										**07/09/09**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	4.3	3.9	pCi/L	1	7.9		07/14/09
Cobalt-60	10198-40-0	LA-508-481	U	-1.3	4.5	pCi/L	1	7.8		07/14/09
Europium-152	14683-23-9	LA-508-481	U	7.2	15	pCi/L	1	25		07/14/09
Europium-154	15585-10-1	LA-508-481	U	7.0	14	pCi/L	1	23		07/14/09
Europium-155	14391-16-3	LA-508-481	U	-2.8	16	pCi/L	1	27		07/14/09
H3 EICHROM										**06/29/09**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		7.7E5	160000	pCi/L	1	210		07/10/09

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 # WSCF90895

Sample # 90895001
SAF# F09-043
Sample ID B21CK6

Matrix WATER
Sampled 08/17/09
Received 08/17/09

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
GEA Prep										**08/27/09**
GEA										
Cesium-137	10045-97-3	LA-508-481	U	-7.9	5	pCi/L	1	7.8		08/31/09
Cobalt-60	10198-40-0	LA-508-481	U	2.4	4.2	pCi/L	1	7.9		08/31/09
Europium-152	14683-23-9	LA-508-481	U	-2.3	14	pCi/L	1	24		08/31/09
Europium-154	15585-10-1	LA-508-481	U	3.0	14	pCi/L	1	22		08/31/09
Europium-155	14391-16-3	LA-508-481	U	-0.77	17	pCi/L	1	26		08/31/09
H3 EICHROM										**08/19/09**
TRI-CARB LSC										
Tritium	10028-17-8	LA-508-421		3700	770	pCi/L	1	230		08/21/09

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
WSCF100103

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on January 13, 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, 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.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 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):

- QC Batch 84788 analyzed on sample# B22FC6
    - Manganese – Matrix Spike RPD outside established range. No flags assigned.

All other QC controls are within the established limits.

Attachment 2
Narrative
WSCF100103

Organic Comments

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

All QC controls are within the established limits.

Radiochemistry Comments

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

All 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** — **F10-065-029** — **PAGE 1 OF 1**

COLLECTOR HEUNZ, MORGAN	**COMPANY CONTACT** DYEKMAN, DL	**TELEPHONE NO.** 373-2530	**PROJECT COORDINATOR** DYEKMAN, DL
SAMPLING LOCATION EW-7 (C7022, 299-W11-90); I-001	**PROJECT DESIGNATION** ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		**SAF NO.** F10-065
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-585	**ACTUAL SAMPLE DEPTH** 29.6	**COA** 300194ES10
SHIPPED TO Waste Sampling & Characterization 00103	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 7N — **AIR QUALITY** ☐ — **DATA TURNAROUND** 45 Days / 45 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	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	None
TYPE OF CONTAINER	aGc*	G/P	G
NO. OF CONTAINER(S)	3	1	1
VOLUME	40mL	500mL	250mL
SAMPLE ANALYSIS	VOA - (2600 (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Tph Li (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B23C91 X 003	WATER	1/13/10	1145

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Morgan	1/13/10 1315	TA FRAZIER	1/13/10 1315

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Aluminum, Barium, Chromium, Cobalt, Cadmium, Copper, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium}

☐ ORIGINAL

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF100275

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on February 10th, 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, 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,* pages 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
WSCF100275

- Batch QC 89175 analyzed on sample# B23MT6
- At the time of analysis, the analyst was "diluting" the LCS to mimic the dilution factor performed on client samples. A "D" flag was applied to the LCS in the final report.
    - Strontium – exceeded spiking levels by a factor of 4. Spike recoveries are not valid.

All other QC controls are within the established limits.

Organic Comments

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

All QC controls are within the established limits.

Radiochemistry Comments

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

All 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

F10-065-158

PAGE 1 OF 1

COLLECTOR: WALKER / HELMS

COMPANY CONTACT: DYEKMAN, DL

TELEPHONE NO.: 373-2530

PROJECT COORDINATOR: DYEKMAN, DL

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

SAMPLING LOCATION: FW-12 (C7019, 299-W11-49); I-003

PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water

SAF NO.: F10-065

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-585 8

ACTUAL SAMPLE DEPTH: 320'

COA: 300194ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

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

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

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

PRESERVATION	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	None
TYPE OF CONTAINER	aG*	G/P	G
NO. OF CONTAINER(S)	1	1	1
VOLUME	40mL	500mL	250mL
SAMPLE ANALYSIS	VOA 8260B (HCL)	SEE TRM (1) IN SPECIAL INSTRUCTIONS	Tritium - Low Ev (Tritium)

SPECIAL HANDLING AND/OR STORAGE: 100275

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B23CX6	WATER	2/10/10	1220

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
S. Walker / Helms	2/10/10 1255	V. Chu / S. Lim	2/10/10 1255
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) (Aluminum, Barium, Chromium, Cobalt, Cadmium, Copper, Manganese, Nickel, Vanadium) ICP/MS - 200.8 (Add-on) (Arsenic, Lead, Strontium, Uranium)

☐ ORIGINAL

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

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

A-6003-618(01/05)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042209**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4303, 240' – 250', GRP samples (B1BJC2 and B1BJC9) were received at the WSCF Laboratory on November 22, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx/Gx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Strontium-89/90 and Technetium-99) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 13 through 14 for QC details. Analytical Note:

- Nitrite - Sample B1BJC2 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 20 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Selenium – The analyte was detected in the associated preparation Blank sample and evaluated. Sample B1BJC2 result was C-flagged.
- Silver – Matrix Spike and Matrix Spike Duplicate recovery were below established laboratory limits. Sample B1BJC2 was E (estimate) flagged.
- Calcium, Magnesium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 21 through 28 for QC details. Analytical Notes:

- Preparation Date: 10-dec-2004.
- Barium, Manganese, Strontium and Zinc - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Mercury – The Laboratory Control Sample recovery was below established laboratory limits. Sample B1BJC2 result was below the detection limit and not flagged.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 29 for QC details. Analytical Note:

- Duplicate QC sample was analyzed on sample# PFP04-243-93 (SDG# 20042218, a non GPP group). pH QC samples are analyzed for laboratory controls only.

All other laboratory QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 40 for QC details. Analytical Notes:

- Preparation Date: 29-nov-2004.

- Terphenyl-d14 (surrogate) – Matrix Spike Duplicate recovery was below established laboratory limits and Matrix Spike/Spike Duplicate Relative Percent Difference exceeded the laboratory limits. The sample results were not flagged.

- 2-Fluorophenol, Terphenyl-d14 and 2,4,6-Tribromophenol (surrogates) were below established limits. The Matrix Spike and Matrix Spike Duplicate were analyzed on B1BJC2 and since no target compounds were detected, the sample was not re-analyzed or flagged.

All other QC controls are within the established limits.

TPHD-WA- The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 41 for QC details. Analytical Notes:

- Preparation Date: 24-nov-2004.

- Kerosene - Matrix Spike Duplicate Relative Percent Difference exceeded established laboratory limits. All other QC control samples were within limits and sample B1BJC2 result was not flagged.

All other QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 42 through 44 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9W0 (SDG# 20042208, SAF# F03-019).

- Toluene - sample B1BJC2 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

- Toluene - sample B1BJC2 result was B; analyte was detected in the associated Blank QC sample.

All other QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 46 through 51 for QC details. Analytical Note:

- Neptunium-237 – The Laboratory Control Sample recovery was below established laboratory limits. The sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	84.4
LCS		Sr-85	96.3
B1BJC2	W040002315	Sr-85	103.1
DUPLICATE	W040002315	Sr-85	85.0

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 1 OF 3
COLLECTOR: Alexander/Gent/Thomas M Mailwood 11/22	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; ~~220~~ ft. open hole 240-250 ft N/A 11-18-04	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.: GPP-03-017	FIELD LOGBOOK NO.: — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.:	BILL OF LADING/AIR BILL NO.:	

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

SPECIAL HANDLING AND/OR STORAGE: 20042209

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL N/A 11-9-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC2	WATER	11/22/04	10:00	✓✓✓	✓	✓	✓	✓	✓	✓	✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: M Mailwood	DATE/TIME: 11/22/04 12:30	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 11/22/04 1230
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-001	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas Mahood	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N **AIR QUALITY** ☐	**DATA TURNAROUND** **45 Days**
SAMPLING LOCATION 200-ZP-1, C4303; ~~220 ft~~ open hole 240-250ft	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032		
ICE CHEST NO. GPP-03-017	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-001	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas Mahoud	COMPANY CONTACT: TRENT, SJ; TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N; AIR QUALITY: ☐; DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4303; 220 ft. GPP-03-017	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	
ICE CHEST NO.	FIELD LOGBOOK NO.; COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None
TYPE OF CONTAINER	P	P	P	P
NO. OF CONTAINER(S)	1	2	2	1
VOLUME	1000mL	1000mL	1000mL	500mL
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B1BJC2	WATER	11/22/04	10:00	✓	✓✓	✓✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Rowlaiwat	11/22/4 12/35	KBeebe KBeebe	11/22/04 1730
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: Filtered

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-008	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas Mahood	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4303;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
GPP-03-017		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJC9	WATER	11/22/04	10:00	✓									
2004000236													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. L. Mahood	11/22/04 12:30	[illegible]	11/22/04 1230
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

Filtered

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20042338**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater, C4301, 270', GRP samples (B1BJD9 and B1BJF6) were received at the WSCF Laboratory on December 07, 2004. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.

- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium), GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All QC controls are within the established limits.

Anions - The hold times for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. Analytical Notes:

- Nitrite - Sample B1BJD9 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrite – The Duplicate Relative Percent Difference exceeded established laboratory limits. The RPD criterion is not applicable to sample results less than ten times the Method Detection Limit.

All other QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold times for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC8 (SDG# 20042351, SAF# F04-032).

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 26 for QC details. Analytical Notes:

- Preparation Date: 20-dec-2004.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BJC3 (Lab Sample# W040002529, SDG# 20042296, SAF# F04-032).
- Manganese and Strontium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Matrix Spike precision was evaluated on sample# B19386 (SDG# 20042408, SAF# F04-014.)
- Calcium, Iron and Magnesium - The analytes detected in the associated preparation Blank. Sample was evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

pH - The hold time for this analysis was met. See page 27 for QC details. Laboratory Control samples and Duplicate samples were analyzed as per the GRP Letter of Instruction. Analytical Note:

- Sample Duplicate was analyzed on Sample #PFF-04-243-97 (non GRP sample).

All laboratory QC controls for the method were within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 09-dec-2004.
- Terphenyl-d14 (surrogate) – The Matrix Spike and Sample B1BJD9 surrogate recovery were less than the established laboratory limits. The Matrix Spike Relative Percent Difference exceeds established laboratory limits. Sample results were not flagged.

All other QC controls are within the established limits.

TPHD–WA - The hold time for this analysis were met. A Blank, Laboratory Control Sample, Matrix Spike, Laboratory Control Sample and Laboratory Control Sample Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 39 for QC details. Analytical Notes:

- Preparation Date: 07-dec-2004.
- Matrix Spike QC sample was analyzed on sample# B1BJC3 (SDG# 20042296, SAF# F04-032).
- Precision was evaluated on the Laboratory Sample and Laboratory Sample Duplicate.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 42 for QC details. Analytical Note:

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1BRB2 (SDG# 20042308, SAF# F04-006).

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Blank, Matrix Spike (Technetium-99 only), Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 44 through 48 for QC details. Analytical Note:

- Technetium-99 - Matrix Spike and Duplicate QC samples were analyzed on sample# B1BXJ0 (SDG# 20042328, SAF# F04-006).

- Neptunium-237 – Laboratory Control Sample recovery was below established laboratory limits. Sample result was below the detection limit and not flagged, but should be considered suspect.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
BLANK		Sr-85	92.8
LCS		Sr-85	108.2
B1BJD9	W040002540	Sr-85	33.0
DUPLICATE	W040002540	Sr-85	38.0

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.

Herlene S. Rich
WSCF Production Control

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

1/4-05

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 1 OF 3

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240ft~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days / 45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE 20042338

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL RJG	~~150mL~~ 250mL 1-10-04	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJD9 W04002540	WATER	12/7/04	0930	X3	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT	12/7/04 12:15	Victor Bins	12/07/04 12:15
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

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

FILTERED @ 0.45 µM

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-030	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N **AIR QUALITY** ☐	**DATA TURNAROUND** **45 Days**
SAMPLING LOCATION 200-ZP-1, C4301; ~~240 ft.~~ 270' 12/7/04 PMG	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA - 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-030	PAGE 3 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4301; 240 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	HNO3 to pH <2	None	None								
TYPE OF CONTAINER	P	P	P	P								
NO. OF CONTAINER(S)	1	2	2	1								
VOLUME	1000mL	1000mL	1000mL	500mL								
SAMPLE ANALYSIS	Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;								

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJD9	WATER	12/7/04	0930	X	X	X	X							

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	FILTERED @ 0.45 µm
PMGENT	12/7/04 12:15	Victor Sims	12/7/04 12:15	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-049	PAGE 1 OF 1

COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4301 ~~X240 R~~ 270' PMG 12/7/04	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C												
TYPE OF CONTAINER	aGs*												
NO. OF CONTAINER(S)	3												
VOLUME	40mL												
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS												

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME											
B1BJF6 W04002344	WATER	12/7/04	0830	X										

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM AMGENT/	DATE/TIME 12/7/04	RECEIVED BY/STORED IN Victor Sims	DATE/TIME 12/7/04 12:15
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)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20050155**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4302, 235' GRP samples (B1BJH6 and B1BJJ3) were received at the WSCF Laboratory on January 25, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Acknowledgement of Samples Received are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Ammonia by EPA Method 300.7. Analytical work was performed with no deviations to the approved method.
- Anions by EPA Method 300. Analytical work was performed with no deviations to the approved method.
- Chromium, Hexavalent by EPA Method 7196. Analytical work was performed with no deviations to the approved method.
- Cyanide by EPA Method 335.2. Analytical work was performed with no deviations to the approved method.
- ICP-AES Metals by EPA Method 6010B. Analytical work was performed with no deviations to the approved method.
- ICP-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.

- pH by EPA Method 150.1. Analytical work was performed with no deviations to the approved method.

Organic

- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.
- TPH Diesel Range by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.
- VOA by EPA Method 8260B. Analytical work was performed with no deviations to the approved method.

Radiochemistry

- All RadChem analyses (AEA (Neptunium) GEA, Tritium, Technetium-99 and Strontium-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Note:

- Sample B1BJH6 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details. All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide - The hold time for this analysis was met. A Blank, Preparation Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 16 for QC details. All QC controls are within the established limits.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 17 through 19 for QC details. Analytical Notes:

- Preparation Date: 09-feb-2005.
- Calcium and Sodium - insufficient spike concentration. Sample concentration was greater than four times the spike concentration.
- Silver, Calcium and Lithium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results, with the following exceptions: Sample B1BJH6 result was C-flagged for Lithium.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 20 through 24 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

pH - The hold time for this analysis was met. Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 25 for QC details. Analytical Note:

- Duplicate QC samples were analyzed on sample# B1C371 (SDG# 20050167, SAF# F02-001).

All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 32 through 37 for QC details. Analytical Notes:

- Preparation Date: 31-jan-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B9N2 (SDG# 20050186, SAF# F03-019).
- Terphenyl-d14 (surrogate) – Matrix and Matrix Spike Duplicate recoveries were below established laboratory limits. Surrogate recovery for the sample was within limits and the sample B1BJH6 results were not flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 38 for QC details. Analytical Note:

- Preparation Date: 31-jan-2005.

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 39 through 41 for QC details. Analytical Note:

- Carbon Tetrachloride - sample B1BJJ3 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with these WDOE accredited methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 43 through 47 for QC details. Analytical Notes:

- Strontium-89/90 - Duplicate QC samples was analyzed on sample# B1BRC5 (SDG# 20050180, SAF# F02-003).

- Neptunium-237 – Duplicate Relative Percent Difference exceeded established laboratory limit and the Laboratory Control Sample recovery was below established laboratory limits. Sample result was X-flagged.

All other QC controls are within the established limits.

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	69.0
LCS		Sr-85	101.4
B1BRC5	W050000169	Sr-85	69.6
DUPLICATE		Sr-85	80.6

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1BRC6	W050000170	Sr-85	71.0
B1BJH6	W050000144	Sr-85	76.8

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.

Herlene S. Rich
WSCF Production Control

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

Fluor Hanford Inc. 2/24	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 1 OF 3

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302; 235 ft.	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE: 20050155

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	P	P	P	P	P	P	aG	P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 120mL	~~150mL~~ 250mL	120mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJH6	WATER	1/25/05	0745	X	X	X	X	X	X	X	X	X	X
W05000144													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RMGENT/[illegible]	1/25/05 1040	[illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F04-032-059	PAGE 2 OF 3
COLLECTOR Alexander/Gent/Thomas	**COMPANY CONTACT** TRENT, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 7N	**DATA TURNAROUND**
SAMPLING LOCATION 200-ZP-1, C4302; 235 ft.	**PROJECT DESIGNATION** 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		**SAF NO.** F04-032	**AIR QUALITY** ☐	**45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 119325ES10	**METHOD OF SHIPMENT** Government Vehicle		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2,4,6-Trichlorophenol, 3+4 Methylphenol (cresol, m+p), 3-Methylphenol (cresol, m-)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (HG); ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Nickel, Potassium, Silver, Sodium} ICP Metals - 6010A (Add-on) {Boron, Lithium, Phosphorus, Selenium, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-059	PAGE 3 OF 3
COLLECTOR: Alexander/Gent/Thomas	COMPANY CONTACT: TRENT, SJ — TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 7N — DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 200-ZP-1, C4302; 235 ft.	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater	SAF NO.: F04-032	AIR QUALITY: ☐
ICE CHEST NO.	FIELD LOGBOOK NO. — COA: 119325ES10	METHOD OF SHIPMENT: Government Vehicle	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.	

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION			HNO3 to pH <2	HNO3 to pH <2	None	None						
TYPE OF CONTAINER			P	P	P	P						
NO. OF CONTAINER(S)			1	2	2	1						
VOLUME			1000mL	1000mL	1000mL	500mL						
SAMPLE ANALYSIS			Neptunium-237;	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;						
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1BJH6	WATER	1/25/05	0745	X	X	X	X					

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: PMGENT/	DATE/TIME: 1/25/05 1640	RECEIVED BY/STORED IN: KBarber	DATE/TIME: 1/25/05 1640	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

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

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-078	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Thomas	TRENT, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
200-ZP-1, C4302;	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	Government Vehicle		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization					

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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl to pH <2/Cool 4C											
TYPE OF CONTAINER	aGs*											
NO. OF CONTAINER(S)	3											
VOLUME	40mL											
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS											

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1BJJ3	WATER	1/25/05	0845	X									
W05C000148													

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
PMGENT/[illegible]	1/25/05 1040	[illegible]	1/25/05 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1)VOA - 8260A (TCL); VOA - 8260A (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20051157, Rev. 1**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F04-032**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 Remedial Investigation Sampling and Analysis Groundwater/C4694 (I-1), samples (B1D7K5 and B1D7Y4) were received at the WSCF Laboratory on June 1, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custodies (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

Compliant to GRP direction on December 9, 2005, uranium analysis was performed on sample B1D7Y4. The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 47 through 48, for a complete listing of approved analytical methods.

Inorganic Comments

Ammonia - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 12 for QC details. Analytical Notes:

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).
- Sample B1D7K5 result was B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

All QC controls are within the established limits.

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Dhynes
1/3/06

Anions - The hold times for this analysis were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 13 through 14 for QC details.

All QC controls are within the established limits.

Chromium, Hexavalent – The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 15 for QC details. All QC controls are within the established limits.

Cyanide – Sample was not analyzed for cyanide. Since the pH of the sample was less than 12, the analysis was cancelled.

ICP-AES Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See pages 16 through 17 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Aluminum, Calcium and Magnesium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.
- Calcium, Magnesium and Sodium – Due to insufficient spike concentration, Matrix Spike Matrix Spike Duplicate and Spike Relative Percent Difference results are reported as "n/a".
- Aluminum – The Matrix Spike and Matrix Spike Duplicate recoveries are biased low. Sample B1D7K5 result is potentially biased low.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. For the uranium analysis, a Blank, Laboratory Control Sample and Duplicate QC samples were analyzed. There was not enough sample material for a Matrix Spike or Matrix Spike Duplicate Analysis. See pages 18 through 21a for QC details. Analytical Notes:

- Preparation Date: 13-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7K0 (SDG# 20051190, SAF# F04-032) for all metals except uranium.
- Strontium – Due to high sample concentrations, the Matrix Spike and Matrix Spike recoveries are reported as "n/a".
- Uranium Analysis – Added per client request on December 9, 2005. A Duplicate QC sample was analyzed on sample# B1D7K5.

All other QC controls are within the established limits.

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pH - The hold time for this analysis was met. A Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 22 for QC details. All QC controls are within the established limits.

Organic Comments

Semi-VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 29 through 34 for QC details. Analytical Notes:

- Preparation Date: 06-jun-2005.
- Bis (2-ethylhexyl) phthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was B flagged.
- Diethylphthalate – The Blank QC sample result exceeded established laboratory control limits. Sample B1D7K5 result was less than the reportable detection limit, but greater than or equal to the method detection limit. Sample B1D7K5 result was BJ flagged.
- Phenol-5d (surrogate) – recovery was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.
- Pentachlorophenol – Laboratory Control Sample result was below established laboratory control limits. Sample B1D7K5 result was less than the method detection limit and U flagged.

All other QC controls are within the established limits.

TPHD-WA - The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 35 for QC details. Analytical Notes:

- Preparation Date: 07-jun-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1D7F1 (SDG# 20051184, SAF# F05-024).

All QC controls are within the established limits.

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 36 through 38 for QC details.

All QC controls are within the established limits.

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Radiochemistry Comments

RadChem – There are no hold times associated with WSCF radiochemical methods. A Laboratory Control Sample, Matrix Spike (Technetium-99 and Tritium only) and Duplicate QC

samples were analyzed with each delivery group per the GRP Letter of Instruction. See pages 40 through 44 for QC details. Analytical Note:

- Strontium-89/90 - Duplicate QC sample was analyzed on sample# B1CWD7 (SDG# 20051152, SAF# F02-003).

All QC controls are within the established limits.

- Uranium-234 and Uranium-235 - Additional Batch QC Data are summarized below:

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
Uranium-234/ Uranium-235				
BLANK		U-234	5.428E-02	
BLANK		U-235	2.232E-02	
B1D7K5	W050001669	U-234	1.182E+00	
DUPLICATE	W050001669	U-234	1.227E+00	3.7%
B1D7K5	W050001669	U-235	4.361E-02	
DUPLICATE	W050001669	U-235	4.716E-02	7.8%

- Strontium-85 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontrium-85			
BLANK		Sr-85	95.9%
LCS		Sr-85	89.6%
B1CWD7	W050001657	Sr-85	93.8%
DUPLICATE	W050001657	Sr-85	93.1%
B1D7K5	W050001669	Sr-85	81.6%

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Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Uranium-232			
BLANK		U-232	74.8%
LCS		U-232	70.4%
B1D7K5	W050001669	U-232	91.2%
DUPLICATE	W050001669	U-232	86.2%

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

REVISED
DLynes 1/3/06

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 | PAGE 1 OF 2

COLLECTOR: Alexander/Gent/Mahood

COMPANY CONTACT: TRENT, SJ

TELEPHONE NO.: 373-5869

PROJECT COORDINATOR: TRENT, SJ

PRICE CODE: 7N

DATA TURNAROUND: 45 Days / 45 Days

AIR QUALITY: ☐

SAMPLING LOCATION: 200-ZP-1, C4694, I-1

PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater

SAF NO.: F04-032

ICE CHEST NO.:

FIELD LOGBOOK NO.:

COA: 119325ES10

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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

2005157

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2/Cool 4C	Cool 4C	H2SO4 to pH <2	None	Cool 4C	NaOH to pH >= 12/Cool 4C	HCl to pH <2/Cool 4C	HNO3 to pH <2
TYPE OF CONTAINER	aGs*	aG	G/P	P	G/P	G/P	G/P	G/P	aG	G/P
NO. OF CONTAINER(S)	3	4	1	1	1	1	1	1	2	1
VOLUME	40mL	1000mL	500mL	~~60mL~~ 125mL	~~150mL~~ 125mL	~~120mL~~ 125mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	Cations (IC) - 300.7 (Nitrogen in ammonium)	pH - 150.1;	Chromium Hex - 7196;	Total Cyanide - 9010;	SEE ITEM (5) IN SPECIAL INSTRUCTIONS	Gamma Spectroscopy (Cesium-137)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1D7K5	WATER	6-1-5	1210	3 ✓	4 ✓	✓	✓	✓	✓	✓	2 ✓	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.O. Mahood/Richard O. Mahood	6/1/5 1415	[illegible]	6/1/5 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(2)Semi-VOA - 8270B (TCL); Semi-VOA - 8270B (Add-On) {3+4 Methylphenol (cresol, m+p)}
(3)ICP/MS - 200.8 (TAL) {Antimony, Barium, Cadmium, Chromium, Copper, Manganese, Nickel, Silver, Vanadium, Zinc} ICP/MS - 200.8 (Add-on) {Arsenic, Beryllium, Lead, Molybdenum, Selenium, Strontium, Thallium, Tin, Uranium} ICP/MS - 200.8 (Hg); ICP Metals - 6010B (TAL) {Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium} ICP Metals - 6010B (Add-On) {Boron, Lithium, Phosphorus, Silicon}
(4)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}
(5)TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME

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

REVISED R Dayes 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F04-032-146 PAGE 2 OF 2

COLLECTOR: Alexander/Gent/Mahood	COMPANY CONTACT: TRENT, SJ	TELEPHONE NO.: 373-5869	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 7N	AIR QUALITY: [ ]	DATA TURNAROUND: 45 Days / 45 Days	
SAMPLING LOCATION: 200-ZP-1, C4694, I-1	PROJECT DESIGNATION: 200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		SAF NO.: F04-032
ICE CHEST NO.	FIELD LOGBOOK NO.	COA: 119325ES10	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=Vegitation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	None	None	~~HCl to pH <2 CSL~~			
TYPE OF CONTAINER	G/P	G/P	P	~~40m~~ ~~Rem 5/26/05~~ As			
NO. OF CONTAINER(S)	2	2	1	3			
VOLUME	1000mL	1000mL	500mL	~~40mL~~		Add	
SAMPLE ANALYSIS	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - H3;	Special Instructions ~~All pkg~~ Rem 5/31/05		Uranium - Isotopic PDhi P.O. Mix 6/18/2005	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME								
B1D7K5	WATER	6-1-5	12:10	2✓	2✓	✓					
~~B1D7K5-A~~	~~WATER~~ Rem 5/31/05								Add Uranium analysis - ICP-MS PDhi P.O. Mix 12/22/2005		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Mahood/Robert D. McLeod	6/1/5 1415	[illegible]	6/1/05 1415
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

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

REVISED RLDayes 1/3/06

A-6003-618(03/03)

Fluor Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-032-169	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Alexander/Gent/Mahood	TRENT, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
200-ZP-1, C4694, I-B1 Rem 6/1/05	200-ZP-1 Remedial Investigation Sampling and Analysis - Groundwater		F04-032		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		119325ES10	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

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1D7Y4	WATER	6-1-5	1210	3 ✓									
[illegible]													

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Richard C. Mahood / R.C. Mahood	6/1/05 1415	[illegible]	6/1/05 1415

SPECIAL INSTRUCTIONS

(1)VOA - 8260B (TCL); VOA - 8260B (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}

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

REVISED
Dayes
1/3/06

A-6003-618(03/03)

Attachment 1
Narrative

Sample Delivery Group	**WSCF20061212**
Sample Matrix	**WATER**
Sample Visual	**N/A**
SAF Number	**F06-022**
Data Deliverable	**Summary Report**

Introduction

Two (2) 200-ZP-1 / 200-UP-1 RI Sampling and Analysis (Laundry Facility) Groundwater samples (B1JX34 and B1JX48) were received at the WSCF Laboratory on October 2, 2006. 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 (GRP) – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and sample receipt are included as Attachment 3.

It should be noted that the attached chain of custody was stamped "iced", initialed and dated 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,* page 12, page 22 and page 28, for a complete listing of approved analytical methods

Inorganic Comments

Anions - Hold time requirements were met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per GRP Letter of Instruction. See page 9 for QC details.

All QC controls are within the established limits.

Hexavalent Chromium - The hold time for this analysis was met. A Blank, Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 10 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See page 11 for QC details. Analytical Notes:

- Preparation Date: 03-oct-2006.
- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX20 (SDG# 20061146, SAF# F06-022).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time for this analysis was met. A Blank, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per the GRP Letter of Instruction. See pages 18 through 20 for QC details. Analytical Notes:

- Matrix Spike and Matrix Spike Duplicate QC was analyzed a 200-PO-1 WTP sample# B1JX35 (SDG# 20061236, SAF# F06-022).
- Chloroform- sample B1JX48 result was J flagged; result was less than the lowest calibration standard but greater than the detection limit.

All QC controls are within the established limits.

Radiochemistry Comments

RadChem – There are no hold times associated with WSCF's radiochemical methods. A Blank, Duplicate QC, Matrix Spike (Technetium only) and a Laboratory Control Sample were analyzed with this delivery group. See pages 24 and 26 for QC details. Analytical Note:

- Strontium-90 – Batch QC was performed on a non-GRP (Sample# S667124, SDG# 20061204). Refer to table below for Batch QC detail.

Batch QC Data (Results) - Based on SDG# 20061204				
Sample Number	**Lab Sample ID**	**Isotope**	**QC**	
			Results (pCi/L)	**RPD %**
Strontium-90				
S667124	W060003424	Sr-90	3.100E+00	
DUPLICATE	W060003424	Sr-90	3.050E+00	1.6%

All QC controls are within the established limits.

Strontium-85 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery**
Strontium-85			
BLANK		Sr-85	94.3%
LCS		Sr-85	96.8%
S667124	W060003424	Sr-85	83.5%
DUPLICATE	W060003424	Sr-85	80.7%
B1JX48	W060003428	Sr-85	88.5%

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

11/01/06

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F06-022-110 PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes 20061212	BYRNES, ME	373-3996	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	**45 Days / 45 Days**
C5103 (299-W14-72), I-1 FB 2941	200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		F06-022		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121075~~ES20	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

TIE to: B1J X39

PRESERVATION	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1JX34 W06000342 7	WATER	10-2-06	1340	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [signature] 11-2-06	1415	K Bates [signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

ICED
KB Initial
10/2/06 Date

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

Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F06-022-129 | PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope/Pfister/Mokler/Hughes	BYRNES, ME	373-3996	TRENT, SJ		
SAMPLING LOCATION C5103 (299-W14-72), I-1 294'	**PROJECT DESIGNATION** 200-ZP-1 and 200-UP-1 RI Sampling & Analysis (Laundry Facility) - GW		**SAF NO.** F06-022	**AIR QUALITY** ☐	**45 Days / 45 Days**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597 ~~121875~~ES20 10-2-06	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE		
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		

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 173.403 but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

TIE TO : B1JX39

PRESERVATION	HCl to pH <2/Cool 4C	Cool 4C	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	P	P	P	P	P
NO. OF CONTAINER(S)	3	1	1	1	2	2
VOLUME	40mL	~~120~~mL 125	125mL	500mL	1L	1L
SAMPLE ANALYSIS	VOA - 8260B (TCL);	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Strontium-89,90 -- Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1JX48 W06000342 8	WATER	10-2-06	1325	X	X	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope/ [signature] 10-2-06	1415	[signature]	10/2/06 1415

SPECIAL INSTRUCTIONS

(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
VB Initial
10/2/06 Date

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

Sample Delivery Group	WSCF20071194
Sample Matrix	Water
Data Deliverable	Summary Report

Introduction

One (1) groundwater sample was received at the WSCF Laboratory on July 12, 2007. Sample was 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 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 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 13 through 15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Sample Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Note(s):

- Nitrite Sample Duplicate RPD above laboratory acceptance limit, however the Matrix Spike/Matrix Spike Duplicate RPD is within acceptance limits.

All other QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21 through 22 for QC details. Analytical Note(s):

- Iron preparation Blank is high resulting in a "C" flag.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23 through 26 for QC details. Analytical Note(s):

- Chromium preparation Blank positive, however the value is so low in comparison to the sample result no impact evident, no flag applied.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31 through 33 for QC details. Analytical Note:

- Acetone preparation Blank was high, however sample result is "<" therefore no impact to the sample.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 36 through 37 for QC details. All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

for Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John Trechter John Trechter
for Pauline Mix
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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071194	ROHAY, VJ	373-3807	TRENT, SJ	7N	
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	45 Days / 45 Days
C5244 - 1-42 222.3'	T4/T5 Well Installation Characterization - Groundwater		F07-006	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L952 W076R01755	WATER	7.12.07	1155	X	X	X	X	X	X	X	X		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope / [illegible]	7.12.07 1530	TA Frazier [illegible]	7-12-07 1530

SPECIAL INSTRUCTIONS

** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

ICED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	**WSCF20071433**
Sample Matrix	**Water**
Data Deliverable	**Summary Report**

Introduction

One groundwater sample was received at the WSCF Laboratory on August 13, 2007. Sample was 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 18-19 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Sample results that were less than the reportable limit, however greater than the method detection limit were B flagged.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF21 (SDG# 20071437, SAF# F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 20 for QC details. Analytical Note(s):

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1PCL9 (SDG# 20071438, SAF# F02-013).

All QC controls are within the established limits.

ICP-AES 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 per the GRP Letter of Instruction. See pages 21-22 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).
- Iron contamination detected in the Blank was evaluated and sample result was C flagged.
- Calcium, Magnesium and Sodium results are beyond effective "Spike" range resulting in results marked NA. Due to high values, high standards were used to extend the instrument calibration range.

All other 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 per the GRP Letter of Instruction. See pages 23-26 for QC details. Analytical Note(s):

- Tc-99 via ICP-MS – Developmental result included in this SDG.
- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).
- Arsenic (B1P3V9) – Spike Relative Percent Difference (RPD) slightly exceeded established laboratory standards. Sample result was E flagged.

All other QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 27 for QC details. Analytical Note(s):

- Duplicate was analyzed on sample# B1P3W1 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31-33 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.
- Acetone contamination detected in the Blank was evaluated and there was no affect on sample result.

All other QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 35-36 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).
- Tritium – Duplicate and Matrix Spike were analyzed on sample# B1P3V8 (SDG# 20071417, SAF# F07-028).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
POPE/PFISTER/HUGHES/WISE 20071433	ROHAY, VJ	373-3807	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	
C5244 - 1-53 381	T4/T5 Well Installation Characterization - Groundwater		F07-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-502 1	122597ES10	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	HCl or H2SO4 to pH <2/Cool 4C	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	None	None	HNO3 to pH <2(ULTREX)		
TYPE OF CONTAINER	aGs*	P	aG	P	P	P	P	Nalgene		
NO. OF CONTAINER(S)	3	1	1	1	1	1	2	1		
VOLUME	40mL	500mL	500mL	500mL	120mL	500mL	1000mL	500mL		
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Alkalinity - 310.1;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - H3;	Technetium-99;	Tc-99 by ICPMS;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1L965 W07GR02135	WATER	8-13-07	0935	✓	✓	✓	✓	✓	✓	✓	✓		

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Howard Pfister	8/13/07 1025	TA Frazier Teresa Frazier	8/13/07 1025

SPECIAL INSTRUCTIONS
** Analytical batch QC must be run on samples associated with this SAF.
(1)ICP/MS - 200.8 (TAL) {Antimony, Cadmium, Chromium, Manganese, Nickel, Vanadium} ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Uranium} ICP Metals - 6010B (TAL) {Calcium, Iron, Magnesium, Potassium, Sodium}
(2)IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}

NCED
Initial
Date

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

A-6003-618(01/06)

Sample Delivery Group	WSCF20071455
Sample Matrix	Water
Data Deliverable	Summary Report

Introduction

Three (3) groundwater samples were received at the WSCF Laboratory on August 15, 2007. 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 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 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 13-15, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 17 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All QC controls are within the established limits.

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 18 for QC details.

- Duplicate, Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1L966 (SDG# 20071456, SAF# F07-006).

All 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 per the GRP Letter of Instruction. See pages 19-20 for QC details. Analytical Note(s):

- ICP-MS Metals – Matrix Spike and Matrix Spike Duplicate were analyzed on samples B1P3V9 (SDG# 20071401, SAF# F07-028) and B1L964 (SDG# 20071403, SAF# F07-006).

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24-26 for QC details. Analytical Note(s):

- Sample results that were less than the lowest calibration standard, however greater than the method detection limit were J flagged.

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Sample Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 29-31 for QC details. Analytical Note(s):

- Technetium – Duplicate and Matrix Spike were analyzed on sample# B1NF38 (SDG# 20071414, SAF# F07-045).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

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

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
Pope, Pfister, Moekler, Julian 20071455	Trent, SJ	373-5869	TRENT, SJ	7N	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY**	
C5574, I-2 326'	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052	☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None			
TYPE OF CONTAINER	P	G/P	aG	G/P	G/P	G/P			
NO. OF CONTAINER(S)	1	1	1	1	2	2			
VOLUME	120mL	125mL	500mL	500mL	1L	1L			
SAMPLE ANALYSIS	IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate}	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy {Cesium-137}	Strontium-89,90 – Total Sr;	Technetium-99 {Technetium-99}			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B1P0X1 W076R0215 7	WATER	8-15-07	1125	✓	✓	✓	✓	✓	✓			
				025886	025886	W2213020	024618	024186				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.D. Julian	8-15-07 1225	TA Frazier / Frazier	8/15/07 1225
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) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED
Initial
Date

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

A-6003-618(01/06)

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COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julin	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 ~~0~~ Days / ~~0~~ 45 Days
SAMPLING LOCATION: C5574, I-2 326'	PROJECT DESIGNATION: 200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		SAF NO.: F07-052		Dja 8-3-07
ICE CHEST NO.	FIELD LOGBOOK NO.	COA: 122597ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE		
SHIPPED TO: Dja 8-3-07 ~~Field Analysis Activities~~ WSCF	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=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	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P0W2 Q158	WATER	8-15-07	1125	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julin / [illegible] 8-15-07	1225	TA Pfrazier / [illegible]	8/15/07 1225

SPECIAL INSTRUCTIONS
(1)VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform}

ICED
Initial
Date

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler, Julian	Trent, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION C5574, I-2-FB 8-15-07 ~~2975'~~ 326'	**PROJECT DESIGNATION** 200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		**SAF NO.** F07-052	**AIR QUALITY** ☐	45 Days / 45 Days
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 122597ES10	**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=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	HCl or H2SO4 to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B1P153 2159	WATER	8-15-07	1057	✓

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / R.D. Pfister	8-15-07 1225	TA FRAZIER / Jerex Frazier	8/15/07 1225

SPECIAL INSTRUCTIONS

ICED
Initial
Date

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF20072125

Introduction

Three groundwater sample was received at the WSCF Laboratory on November 29, 2007. Sample was 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 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 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 14, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 16 for QC details.

- Matrix Spike, Matrix Spike Duplicate and Sample Duplicate analyzed on sample # B1R0R0 (SDG 20072127, SAF F07-045).

All QC controls are within the established limits.

Hexavalent Chromium – The holding time requirement for this analysis was met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 17 for QC details.

All QC controls are within the established limits.

ICP-MS Metals – The holding time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 18 through 19 for QC details.

- Matrix Spike and Matrix Spike Duplicate analyzed on samples # B1PLB6 (SDG 20072033, SAF F07-030) and B1PLD2 (SDG 20072034, SAF F07-076).

All QC controls are within the established limits.

Attachment 2
Narrative
WSCF20072125

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 24 through 26 for QC details.

All QC controls are within the established limits.

Radiochemistry Comments

There are no holding times associated with WSCF's radiochemical methods.

A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction, including Matrix Spike on Tc-99. See pages 28 through 30 for QC details.

- Technetium – 99 Duplicate and Matrix Spike analyzed on sample # B1RF77 (SDG 20072108, SAF F08-014).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

John E. Trechter
WSCF Client Services

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	45 Days / 45 Days
C5572, I-1	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	GOVERNMENT VEHICLE		
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
Waste Sampling & Characterization 20072125	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	HNO3 to pH <2	Cool 4C	HNO3 to pH <2	HNO3 to pH <2	None
TYPE OF CONTAINER	P	~~G~~/P 11-5-07	aG	~~G~~/P 11-5-07	~~G~~/P	~~G~~/P
NO. OF CONTAINER(S)	1	1	1	1	2	2
VOLUME	120mL	125mL	500mL	500mL	1L	1L
SAMPLE ANALYSIS	IC Anions - 300.0 (Fluoride, Nitrogen in Nitrate)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	Gamma Spectroscopy (Cesium-137)	Strontium-89,90 – Total Sr;	Technetium-99 (Technetium-99)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B1P0M7 W07GR0313 3	WATER	11/29/7	1250	\	\	\	\	\	\

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
S. Mulkey	11/29/7 1410	TA Frazier	11/29/07 1410

SPECIAL INSTRUCTIONS
(1)ICP/MS - 200.8 (TAL) {Cadmium, Manganese} ICP/MS - 200.8 (Add-on) {Lead, Uranium}

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 7N	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C5572, I-1-FB	200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		F07-052		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
		122597ES10	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	HCl ~~or H2SO4~~ to pH <2/Cool 4C 11-5-07
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	VOA - 8260B (TCL);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1P0L8 3134	WATER	11/29/7	1245

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature] 11/29/7	1410	TA Pnazim [signature]	11/25/07 1410
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

ICED

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

A-6003-618(01/06)

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE ~~FIELD~~ 1A	DATA TURNAROUND
Pope, Pfister, Moekler	Trent, SJ	373-5869	TRENT, SJ	AIR QUALITY ☐	24 hours ~~0 Days~~ / ~~0~~ 15 Days
SAMPLING LOCATION: C5572, I-1	PROJECT DESIGNATION: 200-ZP-1 Laundry Facility Sampling on C5572, C5573, & C5574 - GW		SAF NO.: F07-052		agl 11-5-07
ICE CHEST NO.	FIELD LOGBOOK NO.	COA: 122597ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE		
SHIPPED TO: ~~Field Analysis Activities~~ WSCF agl 11-5-07	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=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	HCl to pH <2/Cool 4C
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1P117 313S	WATER	11/29/7	1250

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	11/29/7 1410	TA Fizarin [signature]	11/29/07 1410

SPECIAL INSTRUCTIONS
(1) ~~VOLATILE ORGANICS BY FIELD GC (Carbon tetrachloride, Chloroform)~~
8260_VOA_GCMS agl 11-5-07

ICED

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

A-6003-618(01/06)

Attachment 2
Narrative
WSCF90678

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on June 29, 2009. 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

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

Inorganic Comments

ICP-MS Metals – The hold time requirements (28 days [Hg] and 6 months) 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):

- Uranium – Sample concentration is more than 4X the spike amount. Matrix Spike / Matrix Spike Duplicate recovery information not valid.

All other QC controls are within the established limits.

Organic Comments

Attachment 2
Narrative
WSCF90678

VOA – The hold time requirement (14 days) for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – A Duplicate, Matrix Spike (Matrix Spikes apply only to Tritium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gamma Energy Analysis – Duplicate Relative Percent Difference(s) (RPD) exceeded established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity. No flags issued.

All other 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** — F09-009-115 — PAGE 1 OF 1

COLLECTOR: J Rolw	COMPANY CONTACT: WIDRIG, DL	TELEPHONE NO.: 376-2858	PROJECT COORDINATOR: WIDRIG, DL
PRICE CODE: 7N	DATA TURNAROUND: 45 Days / 45 Days		
SAMPLING LOCATION: C7018; EW2-019	PROJECT DESIGNATION: 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO.: F09-009	AIR QUALITY
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-585-3 pg 2	ACTUAL SAMPLE DEPTH: 310'	COA: 300194ES10
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=Vegitation, 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: RADIOACTIVE TIE TO: B1YH73

90678

PRESERVATION	HCl or H2SO4 to pH <2/Cool-4C	HNO3 to pH <2/Cool-4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	G/P	G
NO. OF CONTAINER(S)	4	1	1	1
VOLUME	40ml	500ml	500ml	250ml
SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - 906.0 (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B1YMF3 0001	WATER	6/29/09	08:51	✓	✓	✓	✓

ICED

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Rot Fitzpatrick / B Rot	DATE/TIME: 6/29/09 0950	RECEIVED BY/STORED IN: WD Kessler / WD Kessler	DATE/TIME: 6/29/09 0950
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Chromium} ICP/MS - 200.8 (Add-on) {Uranium}
(2)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

FILTERED PER FWS 6/29/09 DWB

Attachment 2
Narrative
WSCF90895

Introduction

One (1) S&GRP sample was received at the WSCF Laboratory on August 17, 2009. This 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 stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the transport container.

The following generic data qualifiers (i.e., B, D, 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 wetchem 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.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 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):

All QC controls are within the established limits.

Organic Comments

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

Attachment 2
Narrative
WSCF90895

All QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike (Matrix Spikes apply only to Neptunium, Technetium & Tritium and Matrix Spike Duplicate applies to Neptunium), Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Batch QC Analyzed On Sample B21CK5 – Gamma Energy Analysis (GEA) – Duplicate Relative Percent Difference (RPD) did not meet established laboratory limits. The RPD criterion does not apply to results near or below the minimum detectable activity.

All other 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			F09-043-036	PAGE 1 OF 1
COLLECTOR: White / Turner	COMPANY CONTACT: DYEKMAN, DL	TELEPHONE NO.: 373-2530	PROJECT COORDINATOR: DYEKMAN, DL	PRICE CODE: 7N	DATA TURNAROUND
SAMPLING LOCATION: C7024 (299-W14-74); EW4-003	PROJECT DESIGNATION: ARRA 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO.: F09-043	AIR QUALITY: ☐	45 Days / 45 Days
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-585-9	ACTUAL SAMPLE DEPTH: 336'	COA: 302022ES10	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)

90895

SPECIAL HANDLING AND/OR STORAGE: RADIOACTIVE TIE TO: B21CJ8

PRESERVATION	HNO3 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	HNO3 to pH <2	None
TYPE OF CONTAINER	aGs*	G/P	G/P	G
NO. OF CONTAINER(S)	3	1	1	1
VOLUME	40mL	500mL	500mL	250mL
SAMPLE ANALYSIS	VOA - 8260B (TCL)	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium)

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B21CK6	WATER	8-17-09	1026	✓	✓	✓	✓

ICED

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
MA White MA White	8-17-09 1105	Victor Sims	8/17/09 1105
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 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1)ICP/MS - 200.8 (TAL) {Chromium} ICP/MS - 200.8 (Add-on) {Uranium}
(2)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

ORIGINAL

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: CPP 200 Area, 200 Area SGRP, 200 Area			DATA PACKAGE: VSR10-014		
VALIDATOR: Carl Schloesslin		LAB: WSCF		DATE: 4-14-2010	
			SDG: See below*		
ANALYSES PERFORMED					
Gross Alpha/Beta	Strontium-90 X	Technetium-99 X	Alpha Spectroscopy X	Gamma Spectroscopy X	
Total Uranium	Radium-22	Tritium X	Carbon-14		

SAMPLES/MATRIX Water samples

SDG WSCF100103: B23C91 SDG WSCF100275: B23CX6 SDG WSCF20042209: B1BJC2
SDG WSCF20042338: B1BJD9 SDG WSCF20050155: B1BJH6 SDG WSCF20051557: B1D7K5
SDG WSCF20061212: B1JX48 SDG WSCF20071194: B1L952 SDG WSCF20071433: B1L965
SDG WSCF20071455: B1P0X1 SDG WSCF20072125: B1P0M7 SDG WSCF90678: B1YMF3
SDG WSCF90895: B21CK6

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:

*WSCF100103, WSCF100275, WSCF20042209, WSCF20042338, WSCF20050155, WSCF20051557, WSCF20061212, WSCF20071194, WSCF20071433, WSCF20071455, WSCF20072125, WSCF90678 and WSCF90895

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:

WSCF20042209: Tritium MB result of 40 pCi/L should be flagged "U" on WSCF QC report.
WSCF20042338: Tritium MB result of 39 pCi/L should be flagged "U" on WSCF QC report.
WSCF20050155 MB detect (pCi/L): Sr-89/90 (1.1). Tc-99 MB result of 0.4 pCi/L should be flagged "U" on WSCF QC report.
WSCF20051557 MB detects (pCi/L): U-233/234 (0.054), U-235 (0.022), U-238 (0.027). Tritium MB result of 26 pCi/L should be flagged "U" on WSCF QC report.
WSCF20061212: Sr-89/90 and Tc-99 MB results of 0.41 and 0.50 pCi/L should be flagged "U" on WSCF QC report.

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:

WSCF20042209: Np-237 LCS recovery = 40%
WSCF20042338: Np-237 LCS recovery = 19%
WSCF20050155: Np-237 LCS recovery = 26%

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:

WSCF20042209, WSCF20042338 & WSCF20050155: No tracer used for Np-237 analysis

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:

WSCF20050155: Np-237 RPD = 161%, DER most likely >3

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: None

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:

WSCF20071455: Sr-89/90 MDC (11 pCi/L) > CRDL (2 pCi/L)

Appendix 6

Additional Documentation Requested By Client

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100103

QC Batch 83676
Associated Samples 100103001

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #22203**							
Tritium	10028-17-8		-54	pCi/L					U	01/17/10
LCS			**QC Sample #22204**							
Tritium	10028-17-8		3100	pCi/L	93.1	80 - 120				01/17/10
DUP			**QC Sample #22205**							
			Original 100096001							
Tritium	10028-17-8		2500	pCi/L			0.00	-20 - 20		01/17/10
MS			**QC Sample #22206**							
			Original 100096001							
Tritium	10028-17-8		18000	pCi/L	85.4	75 - 125				01/17/10

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF100275

QC Batch 87786
Associated Samples 100275001

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #23388**							
Tritium	10028-17-8		95	pCi/L					U	02/12/10
LCS			**QC Sample #23389**							
Tritium	10028-17-8		3200	pCi/L	94.9	80 - 120				02/12/10
DUP			**QC Sample #23390**							
			Original 100271001							
Tritium	10028-17-8		1100	pCi/L			0.00	-20 - 20		02/12/10
MS			**QC Sample #23391**							
			Original 100271001							
Tritium	10028-17-8		18000	pCi/L	87.7	75 - 125				02/12/10

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Gamma Energy Analysis-grd H2O

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

Lab ID: W040002315

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Cesium-137	10045-97-3	U3.74e-01	n/a	RPD	12/21/04	0.000	20.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Cesium-137	10045-97-3	U9.07e0	n/a	pCi/L	12/21/04	-10.000	1000.000	
LCS	Cesium-137	10045-97-3	3.87e+03	108.101	% Recov	12/21/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Neptunium by AEA

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Neptunium-237	13994-20-2	U-4.2E-02	n/a	RPD	12/14/04	0.000	20.000	
BATCH QC									
BLANK	Neptunium-237	13994-20-2	-7.9e-03	-0.008	pCi/L	12/14/04	-10.000	1000.000	
LCS	Neptunium-237	13994-20-2	40	40.000	% Recov	12/14/04	75.000	125.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Strontium 89/90

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Strontium-89/90	SR-RAD	U-0.3	n/a	RPD	12/01/04	0.000	20.000	
BATCH QC									
BLANK	Strontium-89/90	10098-97-2	-0.5	-0.500	pCi/L	12/01/04	-10.000	100.000	
LCS	Strontium-89/90	10098-97-2	148.7	105.312	% Recov	12/01/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: TC99 by Liquid Scin.

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002315									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Technetium-99	14133-76-7	73.2	0.137	RPD	11/29/04	0.000	20.000	
MS	Technetium-99	14133-76-7	45.9	102.000	% Recov	11/29/04	75.000	125.000	
BATCH QC									
BLANK	Technetium-99	14133-76-7	-0.1	-0.100	pCi/L	11/29/04	-10.000	10.000	
LCS	Technetium-99	14133-76-7	116.5	103.464	% Recov	11/29/04	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042209
Matrix: WATER
Test: Tritium by Liq. Scint.

SAF Number: F04-032
Sample Date: 11/22/04
Receive Date:11/22/04

Lab ID: W040002315

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Tritium	10028-17-8	6.0e+02	0.000	RPD	11/24/04	0.000	20.000	
DUP	H-3 Rel. % Count Error	E,T,C	n/a	n/a	RPD	11/24/04	0.000	1000.000	
MS	Tritium	10028-17-8	2497.0	87.104	% Recov	11/24/04	75.000	125.000	
MS	H-3 Rel. % Count Error	E,T,C	n/a	n/a	Ratio	11/24/04	0.000	1000.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Tritium	10028-17-8	4.0e+01	40.000	pCi/L	11/24/04	-10.000	400.000	
LCS	Tritium	10028-17-8	1290.0	101.831	% Recov	11/24/04	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Gamma Energy Analysis-grd H2O

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002540									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Cesium-137	10045-97-3	U5.46e+00	n/a	RPD	12/15/04	0.000	20.000	
BATCH QC									
BLANK	Cesium-137	10045-97-3	U1.05e-1	n/a	pCi/L	12/16/04	-10.000	1000.000	
LCS	Cesium-137	10045-97-3	3.84e+03	107.263	% Recov	12/13/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Neptunium by AEA

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

Lab ID: W040002540

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Neptunium-237	13994-20-2	U1.2E-02	n/a	RPD	01/04/05	0.000	20.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Neptunium-237	13994-20-2	-1.6E-02	-0.016	pCi/L	01/04/05	-10.000	1000.000	
LCS	Neptunium-237	13994-20-2	19	19.000	% Recov	01/04/05	75.000	125.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Strontium 89/90

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002540									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Strontium-89/90	SR-RAD	U-3.1	n/a	RPD	12/14/04	0.000	20.000	
BATCH QC									
BLANK	Strontium-89/90	10098-97-2	-0.4	-0.400	pCi/L	12/14/04	-10.000	100.000	
LCS	Strontium-89/90	10098-97-2	120.0	84.448	% Recov	12/14/04	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: TC99 by Liquid Scin.

SAF Number: F04-032
Sample Date: 12/06/04
Receive Date:12/06/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002536									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Technetium-99	14133-76-7	16.5	7.580	RPD	12/09/04	0.000	20.000	
MS	Technetium-99	14133-76-7	44.4	98.667	% Recov	12/09/04	75.000	125.000	
BATCH QC									
BLANK	Technetium-99	14133-76-7	-1.4	-1.400	pCi/L	12/09/04	-10.000	10.000	
LCS	Technetium-99	14133-76-7	118.1	104.885	% Recov	12/09/04	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20042338
Matrix: WATER
Test: Tritium by Liq. Scint.

SAF Number: F04-032
Sample Date: 12/07/04
Receive Date:12/07/04

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W040002540									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Tritium	10028-17-8	1.0e+03	18.182	RPD	12/13/04	0.000	20.000	
DUP	H-3 Rel. % Count Error	E,T,C	n/a	n/a	RPD	12/13/04	0.000	1000.000	
MS	Tritium	10028-17-8	2640.0	92.329	% Recov	12/13/04	75.000	125.000	
MS	H-3 Rel. % Count Error	E,T,C	n/a	n/a	Ratio	12/13/04	0.000	1000.000	
BATCH QC									
BLANK	Tritium	10028-17-8	3.9e+01	39.000	pCi/L	12/13/04	-10.000	400.000	
LCS	Tritium	10028-17-8	1520.0	120.301	% Recov	12/13/04	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Gamma Energy Analysis-grd H2O

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Cesium-137	10045-97-3	U-3.11e0	n/a	RPD	01/26/05	0.000	20.000	
BATCH QC									
BLANK	Cesium-137	10045-97-3	U-3.0e-1	n/a	pCi/L	01/31/05	-10.000	1000.000	
LCS	Cesium-137	10045-97-3	3.93e+03	109.777	% Recov	01/26/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Neptunium by AEA

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Neptunium-237	13994-20-2	2.5E-01	161.011	RPD	02/03/05	0.000	20.000	*
BATCH QC									
BLANK	Neptunium-237	13994-20-2	U0.00	n/a	pCi/L	02/03/05	-10.000	1000.000	
LCS	Neptunium-237	13994-20-2	26.0	26.000	% Recov	02/03/05	75.000	125.000	*

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Strontium 89/90

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/26/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000169									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Strontium-89/90	SR-RAD	308.8	0.454	RPD	02/01/05	0.000	20.000	
BATCH QC									
BLANK	Strontium-89/90	10098-97-2	1.1	1.100	pCi/L	02/01/05	-10.000	100.000	
LCS	Strontium-89/90	10098-97-2	128.5	90.429	% Recov	02/01/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: TC99 by Liquid Scin.

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000144									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Technetium-99	14133-76-7	55.8	5.147	RPD	02/02/05	0.000	20.000	
MS	Technetium-99	14133-76-7	44.9	99.778	% Recov	02/02/05	75.000	125.000	
BATCH QC									
BLANK	Technetium-99	14133-76-7	0.4	0.400	pCi/L	02/02/05	-10.000	10.000	
LCS	Technetium-99	14133-76-7	113.8	101.066	% Recov	02/02/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050155
Matrix: WATER
Test: Tritium by Liq. Scint.

SAF Number: F04-032
Sample Date: 01/25/05
Receive Date:01/25/05

Lab ID: W050000144

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Tritium	10028-17-8	U4.6E+01	n/a	RPD	02/02/05	0.000	20.000	
DUP	H-3 Rel. % Count Error	E,T,C	n/a	n/a	RPD	02/02/05	0.000	1000.000	
MS	Tritium	10028-17-8	2324.0	94.771	% Recov	02/02/05	75.000	125.000	
MS	H-3 Rel. % Count Error	E,T,C	n/a	n/a	Ratio	02/02/05	0.000	1000.000	

BATCH QC

BLANK	Tritium	10028-17-8	U-1.8E+01	n/a	pCi/L	02/02/05	-10.000	400.000	
LCS	Tritium	10028-17-8	1910.0	96.714	% Recov	02/02/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Gamma Energy Analysis-grd H2O

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050001669									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Cesium-137	10045-97-3	U-1.84e0	n/a	RPD	06/06/05	0.000	20.000	
BATCH QC									
BLANK	Cesium-137	10045-97-3	U7.22e-1	n/a	pCi/L	06/06/05	-10.000	1000.000	
LCS	Cesium-137	10045-97-3	3.92e+03	109.497	% Recov	06/06/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Strontium 89/90

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050001657									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Strontium-89/90	SR-RAD	381.0	13.147	RPD	06/08/05	0.000	20.000	
BATCH QC									
BLANK	Strontium-89/90	10098-97-2	-0.7	-0.700	pCi/L	06/08/05	-10.000	100.000	
LCS	Strontium-89/90	10098-97-2	156.3	109.993	% Recov	06/08/05	80.000	120.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: TC99 by Liquid Scin.

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

Lab ID: W050001669

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Technetium-99	14133-76-7	590.0	2.527	RPD	06/07/05	0.000	20.000	
MS	Technetium-99	14133-76-7	36.1	80.222	% Recov	06/07/05	75.000	125.000	

BATCH QC

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Technetium-99	14133-76-7	0.0	0.000	pCi/L	06/07/05	-10.000	10.000	
LCS	Technetium-99	14133-76-7	114.5	101.687	% Recov	06/07/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Tritium by Liq. Scint.

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

Lab ID: W050001669

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Tritium	10028-17-8	5.9e+04	1.709	RPD	06/07/05	0.000	20.000	
DUP	H-3 Rel. % Count Error	E,T,C	n/a	n/a	RPD	06/07/05	0.000	1000.000	
MS	Tritium	10028-17-8	2600	108.086	% Recov	06/07/05	75.000	125.000	
MS	H-3 Rel. % Count Error	E,T,C	n/a	n/a	Ratio	06/07/05	0.000	1000.000	

BATCH QC

BLANK	Tritium	10028-17-8	2.6e+01	26.000	pCi/L	06/07/05	-10.000	400.000	
LCS	Tritium	10028-17-8	1930.0	99.623	% Recov	06/07/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20051157
Matrix: WATER
Test: Uranium Isotopics by AEA

SAF Number: F04-032
Sample Date: 06/01/05
Receive Date:06/01/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050001669									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Uranium-233/234	U-233/234	1.2e+00	0.000	RPD	06/24/05	0.000	20.000	
DUP	Uranium-235	15117-96-1	4.7e-02	6.593	RPD	06/24/05	0.000	20.000	
DUP	Uranium-238	U-238	7.3e-01	2.703	RPD	06/24/05	0.000	20.000	
BATCH QC									
BLANK	Uranium-233/234	13966-29-5	5.4e-02	0.054	pCi/L	06/24/05	-10.000	1000.000	
BLANK	Uranium-235	15117-96-1	2.2e-02	0.022	pCi/L	06/24/05	-10.000	1000.000	
BLANK	Uranium-238	24678-82-8	2.7e-02	0.027	pCi/L	06/24/05	-10.000	1000.000	
LCS	Uranium-238	24678-82-8	2.3e+01	121.340	% Recov	06/24/05	75.000	125.000	

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20061212
Matrix: WATER
Test: Strontium 89/90

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Strontium-89/90	10098-97-2	4.1E-01	0.410	pCi/L	-10.000	100.000				10/09/06
LCS	Strontium-89/90	10098-97-2	176.0	102.415	% Recov	80.000	120.000				10/09/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20061212
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 10/02/06
Receive Date:10/02/06

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W060003428											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Technetium-99	14133-76-7	U1.6		RPD			n/a	20.000		10/05/06
MS	Technetium-99	14133-76-7	43.7	97.014	% Recov	75.000	125.000				10/05/06
BATCH QC											
BLANK	Technetium-99	14133-76-7	0.5	0.500	pCi/L	-10.000	10.000				10/05/06
LCS	Technetium-99	14133-76-7	112.4	99.822	% Recov	75.000	125.000				10/05/06

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20071194
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 07/06/07
Receive Date:07/06/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR01703											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Technetium-99	14133-76-7	2.6E+02		RPD			0.000	20.000		07/21/07
MS	Technetium-99	14133-76-7	90.3	92.806	% Recov	75.000	125.000				07/21/07
BATCH QC											
BLANK	Technetium-99	14133-76-7	U-1.9	n/a	pCi/L	-10.000	10.000				07/21/07
LCS	Technetium-99	14133-76-7	120.5	99.095	% Recov	80.000	120.000				07/21/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20071194
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 06/28/07
Receive Date:06/28/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR01531											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	1.4E+03		RPD			15.385	20.000		07/17/07
MS	Tritium	10028-17-8	15770.0	92.413	% Recov	75.000	125.000				07/17/07
BATCH QC											
BLANK	Tritium	10028-17-8	U-2.3E+01	n/a	pCi/L	-10.000	1000.000				07/17/07
LCS	Tritium	10028-17-8	1870.0	92.506	% Recov	80.000	120.000				07/17/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20071433
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 08/09/07
Receive Date:08/09/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02099											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	1.2e+03		RPD			0.000	20.000		08/25/07
MS	Tritium	10028-17-8	17150.0	100.930	% Recov	75.000	125.000				08/25/07
BATCH QC											
BLANK	Tritium	10028-17-8	U2.0e+01	n/a	pCi/L	-10.000	1000.000				08/25/07
LCS	Tritium	10028-17-8	2140.0	106.314	% Recov	80.000	120.000				08/25/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20071433
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 08/09/07
Receive Date:08/09/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02091											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Technetium-99	14133-76-7	2395.8		RPD			2.766	20.000		08/23/07
MS	Technetium-99	14133-76-7	149.7	92.293	% Recov	75.000	125.000				08/23/07
BATCH QC											
BLANK	Technetium-99	14133-76-7	U-4.8	n/a	pCi/L	-10.000	10.000				08/23/07
LCS	Technetium-99	14133-76-7	199.9	98.619	% Recov	80.000	120.000				08/23/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20071455
Matrix: WATER
Test: Gamma Energy Analysis-grd H2O

Sample Date: 08/15/07
Receive Date:08/15/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02157											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cesium-137	10045-97-3	U-4.106		RPD			n/a	20.000		08/22/07
BATCH QC											
BLANK	Cesium-137	10045-97-3	U-1.696	n/a	pCi/L	-10.000	1000.000				08/21/07
LCS	Cesium-137	10045-97-3	6393	105.844	% Recov	80.000	120.000				08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Radiochemistry**

SDG Number: WSCF20071455
Matrix: WATER
Test: Strontium 89/90

Sample Date: 08/15/07
Receive Date:08/15/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02157											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	91.4	91.400	% Recov	30.000	105.000				08/22/07
DUP	Strontium-89/90	SR-RAD	U-2.4E+01		RPD			n/a	20.000		08/22/07
SURR	Sr-85 Tracer by Beta Counting	SR85	91.8	91.800	% Recov	30.000	105.000				08/22/07
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	92.5	92.500	% Recov	30.000	105.000				08/22/07
BLANK	Strontium-89/90	10098-97-2	U1.1E+01	n/a	pCi/L	-10.000	100.000				08/22/07
LCS	Sr-85 Tracer by Beta Counting	SR85	95.8	95.800	% Recov	30.000	105.000				08/22/07
LCS	Strontium-89/90	10098-97-2	1670	100.180	% Recov	80.000	120.000				08/22/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20071455
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 08/09/07
Receive Date:08/09/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR02091											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Technetium-99	14133-76-7	2395.8		RPD			2.766	20.000		08/23/07
MS	Technetium-99	14133-76-7	149.7	92.293	% Recov	75.000	125.000				08/23/07
BATCH QC											
BLANK	Technetium-99	14133-76-7	U-4.8	n/a	pCi/L	-10.000	10.000				08/23/07
LCS	Technetium-99	14133-76-7	199.9	98.619	% Recov	80.000	120.000				08/23/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20072125
Matrix: WATER
Test: Gamma Energy Analysis-grd H2O

Sample Date: 11/29/07
Receive Date:11/29/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR03133											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Cesium-137	10045-97-3	U1.77		RPD			n/a	20.000		12/05/07
BATCH QC											
BLANK	Cesium-137	10045-97-3	U-1.66	n/a	pCi/L	-10.000	1000.000				12/04/07
LCS	Cesium-137	10045-97-3	6347	105.083	% Recov	80.000	120.000				12/04/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20072125
Matrix: WATER
Test: Strontium 89/90

Sample Date: 11/29/07
Receive Date:11/29/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR03133											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	81.5	81.500	% Recov	30.000	105.000				12/10/07
DUP	Strontium-89/90	SR-RAD	1.3		RPD			n/a	20.000		12/10/07
SURR	Sr-85 Tracer by Beta Counting	SR85	83.0	83.000	% Recov	30.000	105.000				12/10/07
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	94.7	94.700	% Recov	30.000	105.000				12/10/07
BLANK	Strontium-89/90	10098-97-2	U-9.9E-01	n/a	pCi/L	-10.000	100.000				12/10/07
LCS	Sr-85 Tracer by Beta Counting	SR85	102.3	102.300	% Recov	30.000	105.000				12/10/07
LCS	Strontium-89/90	10098-97-2	147	88.182	% Recov	80.000	120.000				12/10/07

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20072125
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 11/27/07
Receive Date:11/27/07

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W07GR03130											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Technetium-99	14133-76-7	U-0.3		RPD			n/a	20.000		12/30/07
MS	Technetium-99	14133-76-7	859.9	106.056	% Recov	75.000	125.000				12/30/07
BATCH QC											
BLANK	Technetium-99	14133-76-7	U1.1	n/a	pCi/L	-10.000	10.000				12/30/07
LCS	Technetium-99	14133-76-7	217.1	107.104	% Recov	80.000	120.000				12/30/07

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90678
Project Number F09-009

QC Batch 53771
Associated Samples 90678001

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #10744**							
Tritium	10028-17-8		16	pCi/L					U	07/10/09
LCS			**QC Sample #10745**							
Tritium	10028-17-8		2800	pCi/L	93.6	80 - 120				07/10/09
DUP			**QC Sample #10746**							
			Original 90673003							
Tritium	10028-17-8		7300	pCi/L			2.70	-20 - 20		07/10/09
MS			**QC Sample #10747**							
			Original 90673003							
Tritium	10028-17-8		22000	pCi/L	91.8	75 - 125				07/10/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90678
Project Number F09-009

QC Batch 54118
Associated Samples 90678001

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #11167**								
Cesium-137	10045-97-3		1100	pCi/Sample						U	07/15/09
Cobalt-60	10198-40-0		980	pCi/Sample						U	07/15/09
Europium-152	14683-23-9		-2800	pCi/Sample						U	07/15/09
Europium-154	15585-10-1		-7100	pCi/Sample						U	07/15/09
Europium-155	14391-16-3		2400	pCi/Sample						U	07/15/09
LCS			**QC Sample #11168**								
Cesium-137	10045-97-3		6300000	pCi/Sample	103.6	80 - 120					07/15/09
Cobalt-60	10198-40-0		9900000	pCi/Sample	100	80 - 120					07/15/09
DUP			**QC Sample #11169**								
			Original	**90694001**							
Cesium-137	10045-97-3		10	pCi/L			569.20	-20 - 20	*	U	07/15/09
Cobalt-60	10198-40-0		4.9	pCi/L			475.90	-20 - 20	*	U	07/15/09
Europium-152	14683-23-9		-22	pCi/L			-466.70	-20 - 20	*	U	07/15/09
Europium-154	15585-10-1		0.80	pCi/L			-215.80	-20 - 20	*	U	07/15/09
Europium-155	14391-16-3		22	pCi/L			160.70	-20 - 20	*	U	07/15/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90895

QC Batch 57451
Associated Samples 90895001

Test Gamma Energy Analysis-general

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
IBLANK			**QC Sample #13298**								
Cesium-137	10045-97-3		1.7	pCi/L						U	08/27/09
Cobalt-60	10198-40-0		-1.5	pCi/L						U	08/27/09
Europium-152	14683-23-9		-2.8	pCi/L						U	08/27/09
Europium-154	15585-10-1		-9.5	pCi/L						U	08/27/09
Europium-155	14391-16-3		-14	pCi/L						U	08/27/09
LCS			**QC Sample #13299**								
Cesium-137	10045-97-3		6500000	pCi/sample	107	80 - 120					08/28/09
Cobalt-60	10198-40-0		10000000	pCi/sample	103.2	80 - 120					08/28/09
DUP			**QC Sample #13300**								
			Original 90883001								
Cesium-137	10045-97-3		-5.1	pCi/L			-528.60	-20 - 20	*	U	08/28/09
Cobalt-60	10198-40-0		-1.0	pCi/L			-57.10	-20 - 20	*	U	08/28/09
Europium-152	14683-23-9		4.9	pCi/L			344.40	-20 - 20	*	U	08/28/09
Europium-154	15585-10-1		4.1	pCi/L			-620.50	-20 - 20	*	U	08/28/09
Europium-155	14391-16-3		-13	pCi/L			-47.60	-20 - 20	*	U	08/28/09

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF90895

QC Batch 58234
Associated Samples 90895001

Test Tritium by LSC

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #13348**							
Tritium	10028-17-8		54	pCi/L					U	08/21/09
LCS			**QC Sample #13349**							
Tritium	10028-17-8		2900	pCi/L	96.3	80 - 120				08/21/09
DUP			**QC Sample #13350**							
			Original 90899006							
Tritium	10028-17-8		1600	pCi/L			6.50	-20 - 20		08/21/09
MS			**QC Sample #13351**							
			Original 90899006							
Tritium	10028-17-8		20000	pCi/L	86.5	75 - 125				08/21/09