REVIEW COMMENT RECORD (RCR)

1. Date 05/27/05	2. Review No.
3. Project No. 200-MW-1	4. Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
Validation Package for SDG WSCF20050265	Chracterization Soil Sampling	RL Weiss	ERC - S&DM	Sigma 1 372-9631

17. Comment Submittal Approval:	10. Agreement with indicated comment disposition(s)	11. Closed
Organization Manager (Optional)	R. L. Weiss Reviewer/Point of Contract	Reviewer/Point of Contact
	05/27/2005 Date	6-14-05 Date
	R. L. Weiss Author/Originator	Author/Originator

12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted.)	16. Status
1	Volatile; Laboratory report page 27 is missing. It should be between pages 18 & 19 of the validation report.		rejected - there is no volatile data on that page	Corrected in [illegible] RLW
2	PCB, page 8; Summary table doesn't document "J" flagging of B19PM5, B19PM6 & B19PM7 for missing holding time.		Cara	OK RLW
3	Radiochemistry, page 10; None of the GEA results shown in this table match the values in the laboratory reports.		Cara	OK RLW
4	All others; No comments			—
5	PCB & Volatile, page 1; Both subpackages need to include "Appendix 6. Additional Documentation Requested by Client" lines.		Cara	OK RLW

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(02/02)

ORP - REVIEW COMMENT RECORD (RCR)

1. Date	2. Review No.
May 31, 2005	N/A
3. Project No. 200-MW-1	4. Page 1 of 1

5. Document Number(s)/Title(s)	6. Program/Project/Building Number	7. Reviewer	8. Organization/Group	9. Location/Phone
Data Package SDG WSCF20050265	GRP & Waste Sites/200-MW-1	Bill Thackaberry	Env & Science Assurance (QA)	E6-35 372-0742

17. Comment Submittal Approval	10. Agreement with indicated comment disposition(s)	11. CLOSED
Organization Manager (optional)	8/4/05 Date; Reviewer/Point of Contact; Requester	8/4/05 Date; Reviewer/Point of Contact; Requester

12. Item	13a. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated.)	14. Reviewer Concurrence Required	15. Disposition (Provide justification if NOT accepted). Provide separate attachments if necessary.	16. Status
1	Radiochemistry - pg 31; checklist item 5, says "Analytes detected in method blank? No". This contradicts a statement on pg 2 under Laboratory (Method) blanks which states "Due to method blank contamination, the uranium 233/234 result in sample B19PM9 was qualified as an estimate"		Case K	✓
2	PCB - Pg 2 statement "Due to the holding time being exceeded by less than twice the limit, all PCB results in samples B19PM5, B19PM6 and B19PM7 were qualified as estimates and flagged J" conflicts with pg 20 "PCB - The hold time for this analysis was met"		referred to S. Trent	✓
	Inorganics, Wet Chemistry, Semivolatiles, Volatiles - No Comment			

FAX

TECHLAW, INC.

3115 Loma Court
Tenino, WA 98589
509-521-6693

To: Steve Trent

From: Bruce Christian

Pages: 1

Date: 11 May 2005

Information Request #2

50265 - PCBs

Why is the lab running tetrachloro-m-xylene as a MS/MSD analyte for PCB analysis?

Ayres, Doris E

From: Ayres, Doris E
Sent: Monday, May 16, 2005 9:41 AM
To: 'Christian, Bruce'
Cc: Trent, Stephen J; Lynch, Sherry A
Subject: FW: IR #1 (WSCF20042380) and IR #2 (WSCF20050265)

Tracking:

Recipient	Read
'Christian, Bruce'	
Trent, Stephen J	Read: 5/16/2005 9:46 AM
Lynch, Sherry A	Read: 5/16/2005 9:44 AM

From: Trent, Stephen J
Sent: Friday, May 13, 2005 3:40 PM
To: Ayres, Doris E
Subject: IR #1 (WSCF20042380) and IR #2 (WSCF20050265)

Doris,

Bruce asked about tetrachloro-m-xylene as an MS/MSD for the PCB analysis. In fact, the lab does use this compound as a spike in their PCB analysis.

Regards,

Steve Trent
Sample Management Project Coordinator
Fluor Hanford - Groundwater Remediation Project
Ph: (509) 373-5869
Cell: (509) 947-9354
EFax: (866) 252-5816
Site Pager: 85-7344

FAX

TECHLAW, INC.

3115 Loma Court
Tenino, WA 98589
509-521-6693

To: Steve Trent

From: Bruce Christian

Pages: 1

Date: 10 May 2005

Information Request #1

50265 - Radiochemistry

I don't see any QC data for gamma spectroscopy.

Date: 23 May 2005
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-MW-1 Characterization Sampling and Analysis - Soil
Subject: Wet Chemistry -Data Package No. WSCF20050265 (50265)

JUN 2005 RECEIVED

INTRODUCTION

This memo presents the results of data validation on Data Package No. 50265 prepared by WSCF Analytical Laboratories. (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample	Media	Validation	Analysis
B19PM5	2/3/05	Soil	C	See note 1
B19PM6	2/3/05	Soil	C	See note 1
B19PM7	2/3/05	Soil	C	See note 1
B19PM8	2/3/05	Soil	C	See note 1
B19PM9	2/3/05	Soil	C	See note 1

1- Anions by 300.0, pH by 9045C, cyanide by 9010B.
* - Nitrate, nitrite and phosphate not validated or reported per FHI.

Data validation was conducted in accordance with the FHI validation statement of work and the 200-MW-1 Miscellaneous Waste Group OU RI/FS Workplan, DOE/RL-2001-65 (Rev. 0), April 2002. 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. Qualified Data Summary and 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 PARAMETERS

- **Holding Times/Sample Preservation**

Analytical holding times are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 28 days for fluoride and sulfate; 14

days for cyanide; and immediate (24 hours) for pH.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by greater than twice the limit, all pH results were qualified as estimates and flagged "J".

Due to the holding time being exceeded by less than twice the limit, all cyanide results in all samples were qualified as estimates and flagged "J".

All other holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Matrix Spike

Matrix spike (MS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike and LCS recoveries must fall within the range of 75% to 125%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 74% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 125% or less than 75% and a sample result greater than the IDL are qualified as estimates and flagged "J".

Finally, for samples with a recovery greater than 125% and a sample result less than the IDL, no qualification is required.

Due to matrix spike/matrix spike duplicate results outside QC limits (74% and 72%), all cyanide results were qualified as estimates and flagged "J".

All other matrix spike recovery results were acceptable.

Laboratory Control Sample

The LCS is used to monitor the overall performance of all steps in the analysis. Recoveries must fall within the range of 80% to 120% for LCS analysis. Samples with a recovery of less than 50% are rejected and flagged "UR". Samples with a recovery of 50% to 79% and a sample recovery below the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All LCS results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (B19PM5/B19PM6) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required target quantitation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. All results met the RTQL.

- **Completeness**

Data package No. 50265 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Due to the holding time being exceeded by greater than twice the limit, all pH results were qualified as estimates and flagged "J". Due to the holding time being exceeded by less than twice the limit, all cyanide results were qualified as estimates and flagged "J". Due to matrix spike/matrix spike duplicate results outside QC limits (74% and 72%), all cyanide results were qualified as estimates and flagged "J". Data flagged "J" is an estimate, but under the FHI validation SOW, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2001-65, Rev. 0, *200-MW-1 Miscellaneous Waste Group OUs RI/FS Work Plan*, April 2002.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with FHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: 50265	REVIEWER: TLI	DATE: 5/23/05	PAGE_1_OF_1_
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Cyanide	J	All	MS/MSD recovery
pH Cyanide	J	All	Holding time

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

GENERAL CHEMISTRY ANALYSIS, SOILMATRIX, (MG/KG)

Project: FLUOR-HANFORD											
Laboratory: WSCF											
Case	SDG: WSCF20050265										
Sample Number		B19PM5		B19PM6		B19PM7		B19PM8		B19PM9	
Remarks				Duplicate							
Sample Date		2/3/05		2/3/05		2/3/05		2/3/05		2/3/05	
General Chemistry	RTQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Fluoride	5	5.17		6.46		4.59		<1.15	U	<1.15	U
Sulfate	5	135		143		118		45.2		110	
Cyanide	0.5	<0.200	UJ	<0.200	UJ	<0.200	UJ	<0.200	UJ	<0.200	UJ
pH**		7.85	J	7.98	J	7.91	J	8.95	J	9.22	J

** - Units are pH units

000010

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
W050000296	B19PM5	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U J	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		95.8	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411	J	7.85	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	B	5.17	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		42.2	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	10.0	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		135	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.113	mg/kg	9.94	3.9e-03	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.892	mg/kg	9.94	0.020	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		17.4	mg/kg	9.94	3.3	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		18.0	mg/kg	9.94	0.64	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		19.0	mg/kg	9.94	0.26	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.412	mg/kg	9.94	9.9e-03	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		1.00	mg/kg	9.94	0.16	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U J	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		95.7	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411	J	7.98	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	B	6.46	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		43.1	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	12.5	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		143	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.203	mg/kg	10.10	0.010	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.678	mg/kg	10.10	0.020	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		18.5	mg/kg	10.10	3.4	02/09/05	02/03/05	02/03/05

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

5/12/05 5/12/05 5/12/05 5/12/05 5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000297	B19PM6	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		16.0	mg/kg	10.10	0.65	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		16.2	mg/kg	10.10	0.26	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.521	mg/kg	10.10	0.010	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		1.45	mg/kg	10.10	0.16	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U J	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		95.7	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411	J	7.91	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	B	4.59	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		35.4	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	10.8	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		118	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.0327	mg/kg	9.89	9.9e-03	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.932	mg/kg	9.89	0.020	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		20.7	mg/kg	9.89	3.3	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		26.3	mg/kg	9.89	0.63	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		19.6	mg/kg	9.89	0.26	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.323	mg/kg	9.89	9.9e-03	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		1.55	mg/kg	9.89	0.16	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U J	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		94.5	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411	J	8.95	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 1.15	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		14.4	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	0.33	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		45.2	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05

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

5/16/05

5/20/05

000012

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412	U	< 0.0101	mg/kg	10.09	0.010	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.740	mg/kg	10.09	0.020	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		12.4	mg/kg	10.09	3.4	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		14.7	mg/kg	10.09	0.65	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		3.21	mg/kg	10.09	0.26	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.192	mg/kg	10.09	0.010	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		0.025	mg/kg	10.09	0.16	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U J	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		94.6	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411	J	9.22	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 1.15	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		4.44	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 2.70	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		110	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.0714	mg/kg	9.92	9.9e-03	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.0550	mg/kg	9.92	0.020	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		19.5	mg/kg	9.92	3.3	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		10.3	mg/kg	9.92	0.64	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		3.48	mg/kg	9.92	0.26	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.171	mg/kg	9.92	9.9e-03	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		0.592	mg/kg	9.92	0.16	02/09/05	02/03/05	02/03/05

5/10/05

5/10/05

5/10/05

5/20/05

000013

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20050265, Rev. 2**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F04-015**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-MW-1 Characterization Sampling and Analysis – Soil/216-T-33, 16.5' – 30', samples (B19PM5, B19PM6, B19PM7, B19PM8, B19PM9) were received at the WSCF Laboratory on January 3, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 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 forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Anions by EPA Method 300. 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-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. 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

- PCB by EPA Method 8082. Analytical work was performed with no deviations to the approved method.
- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel/Gas 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 (Plutonium, Americium and Uranium), GEA, Sr-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Anions - The hold times for Nitrite and Nitrate analyses were not met. A Blank, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19PN2 (SDG# 20050300, SAF# F04-01).

- Fluoride – Sample B19PM5, B19PM6 and B19PM7 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Phosphate - Sample B19PM5, B19PM6, B19PM7 and B19PM8 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrate - Sample B19PM9 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.

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 GPP Letter of Instruction. See page 17 for QC details. Analytical Note:

- The Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. All sample results were less than the detection limit and U-flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Notes:

- Preparation Date: 08-feb-2005.

- Silver, Cadmium, Copper, Mercury, Lead and Uranium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

Percent Solids – Analyzed for organic results correction.

pH – The hold time for this analysis was met. All internal laboratory controls were within established limits.

Organic Comments

- Sample results were moisture corrected and reported on a dry-weight basis.

PCB – 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 GPP Letter of Instruction. See pages 32 through 33 for QC details. Analytical Note:

- Preparation Date: 04-feb-2005.

All QC controls are within the established limits.

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 GPP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B19PM5, B19PM6 and B19PM7 have a chromatographic lump of unknown organic material which eluted from about eleven minutes to twenty-nine minutes in the chromatograms.

All 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 Spike Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 39 through 40 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B1B3R1, B19MP5, B19MP6 and B19MP7 contained Extended Motor Oil which was added to the analyte list and reported in the Analytical Results Report.

All QC controls are within the established limits.

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

- Preparation Date: 16-feb-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

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 GPP Letter of Instruction. See pages 42 through 45 for QC details. All 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 GPP Letter of Instruction. See pages 51 through 55 for QC details. Analytical Note:

- Americium-241, Plutonium-239/240, Strontium-89/90 and Uranium-238 Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).
- GEA – QC detail is included on page 51.
- Uranium-234, Urananium-235 and Plutonium-238 - 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	3.522E-02	
BLANK		U-235	-2.403E-03	
B1B3R1	W050000288	U-234	9.442E-01	

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
DUPLICATE	W050000288	U-234	8.554E-01	9.9
B1B3R1	W050000288	U-235	8.358E-02	
DUPLICATE	W050000288	U-235	4.009E-02	70.3
Plutonium-238				
BLANK		Pu-238	-1.441E-02	
B19412	W050000288	Pu-238	3.388E-01	
DUPLICATE	W050000288	Pu-238	4.829E-01	35.1

- Plutonium-242, Americium-243 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontium-85			
BLANK		Sr-85	95.3
LCS		Sr-85	97.7
B1B3R1	W050000288	Sr-85	90.5
DUPLICATE	W050000288	Sr-85	100.3
B19PM5	W050000296	Sr-85	88.3
B19PM6	W050000297	Sr-85	88.0
B19PM7	W050000298	Sr-85	89.2
B19PM8	W050000299	Sr-85	59.3
B19PM9	W050000300	Sr-85	108.1

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Plutonium-242			
BLANK		Pu-242	89.9
LCS		Pu-242	84.8
B1B3R1	W050000288	Pu-242	86.7
DUPLICATE	W050000288	Pu-242	83.6
B19PM5	W050000296	Pu-242	67.5
B19PM6	W050000297	Pu-242	89.9
B19PM7	W050000298	Pu-242	65.2
B19PM8	W050000299	Pu-242	82.0
B19PM9	W050000300	Pu-242	83.7
Americium-243			
BLANK		Am-243	74.4
LCS		Am-243	79.6
B1B3R1	W050000288	Am-243	82.8
DUPLICATE	W050000288	Am-243	85.5
B19PM5	W050000296	Am-243	98.6
B19PM6	W050000297	Am-243	85.2
B19PM7	W050000298	Am-243	97.4
B19PM8	W050000299	Am-243	83.8
B19PM9	W050000300	Am-243	99.9
Uranium-232			
BLANK		U-232	68.3

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
LCS		U-232	74.9
B1B3R1	W050000288	U-232	78.3
DUPLICATE	W050000288	U-232	77.5
B19PM5	W050000296	U-232	59.8
B19PM6	W050000297	U-232	79.8
B19PM7	W050000298	U-232	82.9
B19PM8	W050000299	U-232	74.0
B19PM9	W050000300	U-232	77.3

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

3/4/05

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-080	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY	☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**			
216-T-33; 16.5ft-19.0ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015			
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**			
	HNF-N-386 1	119144ES10	Governement 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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN7

20050265

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM5 W050000296	SOIL	2-3-05	0750	X	X	X	X	X	X
B19PM6 297	SOIL	2-3-05	0750	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pope / [signature]	2-3-05 13:55	Victor Bus [signature]	2/3/05 13:55
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000022

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-081	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION: 216-T-33; 19ft-21.5ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO.: F04-015		
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-386 1	COA: 119144ES10	METHOD OF SHIPMENT: Governement Vehcle		
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN8

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM7 W0500023298	SOIL	2-3-05	0850	X	X	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSAlc/ Gft	2-3-05 1315S	V. Ha Bus	2/3/05 1315S

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000023

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-082	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Wiberg/Tyra	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 8N	**DATA TURNAROUND** 45 Days / 45 Days
SAMPLING LOCATION 216-T-33; 22.5ft-25.0ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil		**SAF NO.** F04-015	**AIR QUALITY** ☐	
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-386 1	**COA** 119144ES10	**METHOD OF SHIPMENT** Governement Vehcle		
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 N/A

SPECIAL HANDLING AND/OR STORAGE Radioactive Tie To: B19PN9

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly				
NO. OF CONTAINER(S)	1	1	1	3	1	1				
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL				
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA				

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B19PM8 W050223249	SOIL	2-3-05	1100	X	X	X	X	X	X				

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSA Kf Stfa	2-3-05 1315	Victor Brus	2/3/05 1315

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA – 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 – Total Sr; Expedite GEA - 24 hr. Turnaround

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

000024

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-083	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE BN	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-T-33; 27.5ft-30ft	200-MW-1 Characterization Sampling and Analysis - Soil	F04-015

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
	HNF-N-386 1	119144ES10	Governement Vehcle

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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PP0

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM9 W JS0003 502	SOIL	2/3/05	1310	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Mk2 / 48hr 2-3-05	1315S	Victor B mus 4d 2/3/05	1315S
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000025

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-MW-1			DATA PACKAGE: WSCF200S0265		
VALIDATOR: TLI		LAB: WSCF		DATE: 5/11/05	
			SDG: S0265		

ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate	Cyanide	

SAMPLES/MATRIX
B19MP5 B19MP6 B19MP7 B19MP8 B19MP9
Nitrate, nitrite + phosphate no validated or reported per PHI
Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

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:

GENERAL CHEMISTRY 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: NO FB

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: Cyanide – MS/MSD 74/72% – J all

NO PAS

GENERAL CHEMISTRY 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:

6. HOLDING TIMES (all levels)

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

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

Comments: cyanide <2x MS, MG, M7, M8, M9 J all
pH <2x J all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

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:

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: F04-015
Sample Date: 02/07/05
Receive Date:02/07/05

Lab ID: W050000410

BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
DUP	Fluoride	16984-48-8	<1.15e0	n/a	RPD	02/17/05	0.000	20.000	U
DUP	Nitrogen in Nitrite	NO2-N	<9.50e-1	n/a	RPD	02/17/05	0.000	20.000	U
DUP	Nitrogen in Nitrate	NO3-N	1.01e+01	4.831	RPD	02/17/05	0.000	20.000	
DUP	Phosphate (P) by IC	PO4-P	<2.70e0	n/a	RPD	02/17/05	0.000	20.000	U
DUP	Sulfate	14808-79-8	<5.00e0	n/a	RPD	02/17/05	0.000	20.000	U
MS	Fluoride	16984-48-8	4.77e-01	96.559	% Recov	02/17/05	75.000	125.000	
MS	Nitrogen in Nitrite	NO2-N	5.24e-01	104.800	% Recov	02/17/05	75.000	125.000	
MS	Nitrogen in Nitrate	NO3-N	4.43e-01	98.226	% Recov	02/17/05	75.000	125.000	
MS	Phosphate (P) by IC	PO4-P	8.86e-01	91.434	% Recov	02/17/05	75.000	125.000	
MS	Sulfate	14808-79-8	2.00e+00	100.000	% Recov	02/17/05	75.000	125.000	
MSD	Fluoride	16984-48-8	4.83e-01	97.773	% Recov	02/17/05	75.000	125.000	
MSD	Nitrogen in Nitrite	NO2-N	5.26e-01	105.200	% Recov	02/17/05	75.000	125.000	
MSD	Nitrogen in Nitrate	NO3-N	4.55e-01	100.887	% Recov	02/17/05	75.000	125.000	
MSD	Phosphate (P) by IC	PO4-P	8.88e-01	91.641	% Recov	02/17/05	75.000	125.000	
MSD	Sulfate	14808-79-8	2.04e+00	102.000	% Recov	02/17/05	75.000	125.000	

BATCH QC

BLANK	Fluoride	16984-48-8	<2.30e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Fluoride	16984-48-8	<2.30e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<1.90e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Nitrogen in Nitrite	NO2-N	<1.90e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<1.30e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Nitrogen in Nitrate	NO3-N	<1.30e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<5.40e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Phosphate (P) by IC	PO4-P	<5.40e-2	n/a	mg/L	02/17/05	0.000	300.000	U
BLANK	Sulfate	14808-79-8	<1.00e-1	n/a	mg/L	02/17/05	0.000	300.000	U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Anions by Ion Chromatography

SAF Number: F04-015
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Sulfate	14808-79-8	<1.00e-1	n/a	mg/L	02/17/05	0.000	300.000	U
LCS	Fluoride	16984-48-8	1.04e+02	105.370	% Recov	02/17/05	80.000	120.000	
LCS	Nitrogen in Nitrite	NO2-N	1.01e+02	101.000	% Recov	02/17/05	80.000	120.000	
LCS	Nitrogen in Nitrate	NO3-N	9.27e+01	102.886	% Recov	02/17/05	80.000	120.000	
LCS	Phosphate (P) by IC	PO4-P	1.88e+02	97.007	% Recov	02/17/05	80.000	120.000	
LCS	Sulfate	14808-79-8	3.89e+02	97.494	% Recov	02/17/05	80.000	120.000	

000033

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Cyanide by Midi/Spectrophotom

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000296									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Cyanide by Midi/Spectrophotom	57-12-5	74.1	74.100	% Recov	02/22/05	75.000	125.000	*
MSD	Cyanide by Midi/Spectrophotom	57-12-5	72.1	72.100	% Recov	02/22/05	75.000	125.000	*
SPK-RPD	Cyanide by Midi/Spectrophotom	57-12-5	89.100	18.382	RPD	02/22/05	0.000	20.000	
BATCH QC									
BLANK	Cyanide by Midi/Spectrophotom	57-12-5	<1	n/a	ug/L	02/22/05	-4.000	4.000	U
BLNK-PREP	Cyanide by Midi/Spectrophotom	57-12-5	<4	n/a	ug/L	02/22/05	-4.000	4.000	U
LCS	Cyanide by Midi/Spectrophotom	57-12-5	92.7	92.700	% Recov	02/22/05	85.000	115.000	

000034

Date: 23 May 2005
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-MW-1 Characterization Sampling and Analysis - Soil
Subject: Semivolatile - Data Package No.WSCF20050265 (50265)

JUN 2005
RECEIVED

INTRODUCTION

This memo presents the results of data validation on Data Package No. 50265 prepared by WSCF Analytical Laboratories. (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample	Media	Validation	Analysis
B19PM5	2/3/05	Soil	C	See note 1 & 2
B19PM6	2/3/05	Soil	C	See note 1 & 2
B19PM7	2/3/05	Soil	C	See note 1 & 2
B19PM8	2/3/05	Soil	C	See note 1
B19PM9	2/3/05	Soil	C	See note 1

1 - Semivolatiles by 8270, TPH-D (diesel and kerosene) and gasoline range organics by 8015B.
2 - TPH Motor Oil by 8015B (not requested but reported).

Data validation was conducted in accordance with the FHI validation statement of work and the 200-MW-1 Miscellaneous Waste Group OU RI/FS Workplan, DOE/RL-2001-65 (Rev. 0), April 2002 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. Qualified Data Summary and 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/Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirement for semivolatile organics are extraction within 14 days of the date of sample collection and analysis within 40 days from the date of extraction. Method 8015B requires analysis within 14 days.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were met.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

<u>Field Blanks</u>

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike

Matrix spike/matrix spike duplicate and blank spike sample analyses are used to assess the analytical accuracy of the reported data. Matrix spike/matrix duplicate results are used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All matrix spike/matrix spike duplicate and blank spike results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-35%. If RPD values are out of specification and the sample concentration is less than five times the spike

concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All MS/MSD RPD results were acceptable.

Field Duplicate Samples

One set of field duplicates (B19PM5/B19PM6) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required target quantitation limits (RTQL's) to ensure that laboratory detection levels meet the required criteria. All analytes met the RTQL.

- **Completeness**

Data package No. 50265 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2001-65, Rev. 0, *200-MW-1 Miscellaneous Waste Group OUs RI/FS Work Plan*, April 2002.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the FHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

SEMIVOLATILE DATA QUALIFICATION SUMMARY*

SDG: 50265	REVIEWER: TLI	DATE: 5/23/05	PAGE 1 OF 1
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

SEMIVOLATILE/8015B ANALYSIS, SOIL MATRIX, (UG/KG)

Project: FLUOR-HANFORD											
Laboratory: WSCF											
Case:	SDG: WSCF20050265										
Sample Number		B19PM5		B19PM6		B19PM7		B19PM8		B19PM9	
Remarks				Duplicate							
Sample Date		2/3/05		2/3/05		2/3/05		2/3/05		2/3/05	
Analysis Date		2/15/05		2/15/05		2/15/05		2/15/05		2/15/05	
Semivolatile/8015B	RTQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-Nitrophenol		<670	U	<670	U	<670	U	<680	U	<680	U
1,4-Dichlorobenzene		<330	U	<330	U	<330	U	<330	U	<330	U
Phenol	330	<100	U	<100	U	<100	U	<110	U	<110	U
1,2,4-Trichlorobenzene		<310	U	<300	U	<310	U	<310	U	<310	U
2,4-Dinitrotoluene		<69.0	U	<69.0	U	<69.0	U	<70.0	U	<70.0	U
Pyrene		<69.0	U	<69.0	U	<69.0	U	<70.0	U	<70.0	U
4-Chloro-3-methylphenol		<69.0	U	<69.0	U	<69.0	U	<70.0	U	<70.0	U
N-Nitroso-di-n-propylamine		<69.0	U	<69.0	U	<69.0	U	<70.0	U	<70.0	U
Acenaphthene		<69.0	U	<69.0	U	<69.0	U	<70.0	U	<70.0	U
Pentachlorophenol		<310	U	<310	U	<310	U	<320	U	<320	U
2-Chlorophenol		<150	U	<150	U	<150	U	<150	U	<150	U
Tributyl phosphate	3300	<69.0	U	<69.0	U	<69.0	U	<70.0	U	<70.0	U
TPH-D	5000	<3900	U	<3900	U	<4000	U	<4000	U	<4000	U
Kerosene	5000	<3900	U	<3900	U	<4000	U	<4000	U	<4000	U
TPH-Carbon Motor Oil	5000	230000		180000		160000		NA		NA	
TPH-G (gasoline range organics)	5000	<250	U	<250	U	<250	U	<250	U	<250	U

000010

REVISED 8-6-05

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic															
W050000296	B19PM5	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
~~W050000296~~	~~B19PM5~~	~~GRP~~	~~TRENT~~	~~12674-11-2~~	~~Aroclor-1016~~	~~SOIL~~	~~LA-523-427~~	~~U~~	~~< 260~~	~~ug/kg~~	~~5.00~~	~~2.6e+02~~	~~02/22/05~~	~~02/03/05~~	~~02/03/05~~
W050000296	B19PM5	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 510	ug/kg	5.00	5.1e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		2.80e+03	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.20e+03	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
~~W050000296~~	~~B19PM5~~	~~GRP~~	~~TRENT~~	~~11100-14-4~~	~~Aroclor-1268~~	~~SOIL~~	~~LA-523-427~~	~~U~~	~~< 260~~	~~ug/kg~~	~~5.00~~	~~2.6e+02~~	~~02/22/05~~	~~02/03/05~~	~~02/03/05~~
W050000296	B19PM5	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 670	ug/kg	1.00	6.7e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
~~W050000296~~	~~B19PM5~~	~~GRP~~	~~TRENT~~	~~75-35-4~~	~~1,1-Dichloroethene~~	~~SOIL~~	~~LA-523-455~~	~~U~~	~~< 2.10~~	~~ug/kg~~	~~1.00~~	~~2.1~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000296	B19PM5	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000296	B19PM5	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		2.30e+05	ug/kg	1.00	6.5e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 410	ug/kg	4.00	4.1e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		3.00e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.10e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 670	ug/kg	1.00	6.7e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000297	B19PM6	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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RQ = Result Qualifier

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5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000297	B19PM6	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		1.80e+05	ug/kg	1.00	6.5e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 400	ug/kg	4.00	4.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		3.80e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.10e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05

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RQ = Result Qualifier

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000298	B19PM7	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	<	670	ug/kg	1.00	6.7e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	<	330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	<	100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	<	310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	<	69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	<	69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	<	69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	<	69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	<	69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	<	310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	<	150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	<	69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

RC 6/20/05

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RQ = Result Qualifier

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000298	B19PM7	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		1.60e+05	ug/kg	1.00	6.6e+03	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05

3/20/05

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3/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 100	ug/kg	1.00	1.0e+02	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		410	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		160	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 680	ug/kg	1.00	6.8e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 110	ug/kg	1.00	1.1e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

5/20/05

5/20/05

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JR 5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W050000299~~	~~B19PM8~~	~~GRP~~	~~TRENT~~	~~104-51-8~~	~~n-Butylbenzene~~	~~SOIL~~	~~LA-523-455~~	~~U~~	~~< 2.10~~	~~ug/kg~~	~~1.00~~	~~2.1~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000299	B19PM8	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	~~LA-523-455~~	~~U~~	~~< 2.10~~	~~ug/kg~~	~~1.00~~	~~2.1~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
~~W050000299~~	~~B19PM8~~	~~GRP~~	~~TRENT~~	~~156-59-2~~	~~cis-1,2-Dichloroethylene~~	~~SOIL~~	~~LA-523-455~~	~~U~~	~~< 2.10~~	~~ug/kg~~	~~1.00~~	~~2.1~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000299	B19PM8	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
~~W050000300~~	~~B19PM9~~	~~GRP~~	~~TRENT~~	~~12674-11-2~~	~~Aroclor-1016~~	~~SOIL~~	~~LA-523-427~~	~~U~~	~~< 52.0~~	~~ug/kg~~	~~1.00~~	~~52~~	~~02/16/05~~	~~02/03/05~~	~~02/03/05~~
W050000300	B19PM9	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 100	ug/kg	1.00	1.0e+02	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
~~W050000300~~	~~B19PM9~~	~~GRP~~	~~TRENT~~	~~11100-14-4~~	~~Aroclor-1268~~	~~SOIL~~	~~LA-523-427~~	~~U~~	~~< 52.0~~	~~ug/kg~~	~~1.00~~	~~52~~	~~02/16/05~~	~~02/03/05~~	~~02/03/05~~
W050000300	B19PM9	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 680	ug/kg	1.00	6.8e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 110	ug/kg	1.00	1.1e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05

5/20/05

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000300	B19PM9	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05

5/20/05

5/20/05

000019

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20050265, Rev. 2**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F04-015**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-MW-1 Characterization Sampling and Analysis – Soil/216-T-33, 16.5' – 30', samples (B19PM5, B19PM6, B19PM7, B19PM8, B19PM9) were received at the WSCF Laboratory on January 3, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 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 forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Anions by EPA Method 300. 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-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. 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

- PCB by EPA Method 8082. Analytical work was performed with no deviations to the approved method.
- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel/Gas 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 (Plutonium, Americium and Uranium), GEA, Sr-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Anions - The hold times for Nitrite and Nitrate analyses were not met. A Blank, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19PN2 (SDG# 20050300, SAF# F04-01).

- Fluoride – Sample B19PM5, B19PM6 and B19PM7 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Phosphate - Sample B19PM5, B19PM6, B19PM7 and B19PM8 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrate - Sample B19PM9 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.

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 GPP Letter of Instruction. See page 17 for QC details. Analytical Note:

- The Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. All sample results were less than the detection limit and U-flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Notes:

- Preparation Date: 08-feb-2005.

- Silver, Cadmium, Copper, Mercury, Lead and Uranium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

Percent Solids – Analyzed for organic results correction.

pH – The hold time for this analysis was met. All internal laboratory controls were within established limits.

Organic Comments

- Sample results were moisture corrected and reported on a dry-weight basis.

PCB – 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 GPP Letter of Instruction. See pages 32 through 33 for QC details. Analytical Note:

- Preparation Date: 04-feb-2005.

All QC controls are within the established limits.

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 GPP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B19PM5, B19PM6 and B19PM7 have a chromatographic lump of unknown organic material which eluted from about eleven minutes to twenty-nine minutes in the chromatograms.

All 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 Spike Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 39 through 40 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B1B3R1, B19MP5, B19MP6 and B19MP7 contained Extended Motor Oil which was added to the analyte list and reported in the Analytical Results Report.

All QC controls are within the established limits.

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

- Preparation Date: 16-feb-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

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 GPP Letter of Instruction. See pages 42 through 45 for QC details. All 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 GPP Letter of Instruction. See pages 51 through 55 for QC details. Analytical Note:

- Americium-241, Plutonium-239/240, Strontium-89/90 and Uranium-238 Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).
- GEA – QC detail is included on page 51.
- Uranium-234, Urananium-235 and Plutonium-238 - 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	3.522E-02	
BLANK		U-235	-2.403E-03	
B1B3R1	W050000288	U-234	9.442E-01	

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
DUPLICATE	W050000288	U-234	8.554E-01	9.9
B1B3R1	W050000288	U-235	8.358E-02	
DUPLICATE	W050000288	U-235	4.009E-02	70.3
Plutonium-238				
BLANK		Pu-238	-1.441E-02	
B19412	W050000288	Pu-238	3.388E-01	
DUPLICATE	W050000288	Pu-238	4.829E-01	35.1

- Plutonium-242, Americium-243 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontium-85			
BLANK		Sr-85	95.3
LCS		Sr-85	97.7
B1B3R1	W050000288	Sr-85	90.5
DUPLICATE	W050000288	Sr-85	100.3
B19PM5	W050000296	Sr-85	88.3
B19PM6	W050000297	Sr-85	88.0
B19PM7	W050000298	Sr-85	89.2
B19PM8	W050000299	Sr-85	59.3
B19PM9	W050000300	Sr-85	108.1

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Plutonium-242			
BLANK		Pu-242	89.9
LCS		Pu-242	84.8
B1B3R1	W050000288	Pu-242	86.7
DUPLICATE	W050000288	Pu-242	83.6
B19PM5	W050000296	Pu-242	67.5
B19PM6	W050000297	Pu-242	89.9
B19PM7	W050000298	Pu-242	65.2
B19PM8	W050000299	Pu-242	82.0
B19PM9	W050000300	Pu-242	83.7
Americium-243			
BLANK		Am-243	74.4
LCS		Am-243	79.6
B1B3R1	W050000288	Am-243	82.8
DUPLICATE	W050000288	Am-243	85.5
B19PM5	W050000296	Am-243	98.6
B19PM6	W050000297	Am-243	85.2
B19PM7	W050000298	Am-243	97.4
B19PM8	W050000299	Am-243	83.8
B19PM9	W050000300	Am-243	99.9
Uranium-232			
BLANK		U-232	68.3

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
LCS		U-232	74.9
B1B3R1	W050000288	U-232	78.3
DUPLICATE	W050000288	U-232	77.5
B19PM5	W050000296	U-232	59.8
B19PM6	W050000297	U-232	79.8
B19PM7	W050000298	U-232	82.9
B19PM8	W050000299	U-232	74.0
B19PM9	W050000300	U-232	77.3

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

3/4/05

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-080	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Wiberg/Tyra	COMPANY CONTACT CS Cearlock	TELEPHONE NO. 372-9638	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION 216-T-33; 16.5ft-19.0ft	PROJECT DESIGNATION 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO. F04-015		
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-386 1	COA 119144ES10	METHOD OF SHIPMENT Governement Vehcle		
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN7

20050265

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM5 W03000296	SOIL	2-3-05	0750	X	X	X	X	X	X
B19PM6 297	SOIL	2-3-05	0750	X	X	X	X	X	X

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister / [illegible]	2-3-05 13:55	Victor Bus [illegible]	2/3/05 13:55

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000028

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-081	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-T-33; 19ft-21.5ft	200-MW-1 Characterization Sampling and Analysis - Soil	F04-015

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
	HNF-N-386 1	119144ES10	Governement Vehcle

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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN8

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly			
NO. OF CONTAINER(S)	1	1	1	3	1	1			
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL			
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B19PM7 W050202298	SOIL	2-3-05	0850	X	X	X	X	X	X			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JAHe/ 2-3-05	1315S	Vitor Bins	2/3/05 1315S
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000029

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-082	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
216-T-33; 22.5ft-25.0ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-386 1	119144ES10	Governement 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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN9

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM8 W050223249	SOIL	2-3-05	1100	X	X	X	X	X	X

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSA [illegible]	2-3-05 1315	Victor Brus [illegible]	2/3/05 1315

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.

(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;

(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}

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

(4)Semi-VOA – 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 – Total Sr; expedite GEA - 24 hr. turnaround

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

000030

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-083	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	BN	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY	☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-T-33; 27.5ft-30ft	200-MW-1 Characterization Sampling and Analysis - Soil	F04-015

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
	HNF-N-386 1	119144ES10	Governement Vehcle

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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PP0

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM9 W0S0000300	SOIL	2/3/05	1310	X	X	X	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister	2-3-05 13:55	Victor Bus	2/3/05 13:55

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000031

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-MW-1			DATA PACKAGE: 5026S		
VALIDATOR: TLF		LAB: WSCF		DATE: 5/11/05	
			SDG: 5026S		
ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270	8015B	SW-846 8270 (TCLP)
SAMPLES/MATRIX					
B19PM5	B19PM6	B19PM7	B19PM8	B19PM9	
					Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

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:

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: No FB

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: No PAS

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 Stand

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

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

Comments: _____

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: _____

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:

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

Lab ID: W050000288
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	3157.0	90.300	% Recov	02/15/05	46.000	107.000	
MS	1,4-Dichlorobenzene	106-46-7	3118.0	89.200	% Recov	02/15/05	30.000	96.000	
MS	2,4-Dinitrotoluene	121-14-2	2689.6	76.900	% Recov	02/15/05	59.000	106.000	
MS	2-Fluorophenol	367-12-4	3132.8	89.600	% Recov	02/15/05	42.000	105.000	
MS	Acenaphthene	83-32-9	3130.4	89.500	% Recov	02/15/05	61.000	116.000	
MS	4-Chloro-3-methylphenol	59-50-7	5051.7	96.300	% Recov	02/15/05	61.000	106.000	
MS	2-Chlorophenol	95-57-8	4658.2	88.800	% Recov	02/15/05	66.000	108.000	
MS	N-Nitrosodi-n-dipropylamine	621-64-7	3499.9	100.000	% Recov	02/15/05	71.000	114.000	
MS	2-Fluorobiphenyl	321-60-8	3250.8	93.000	% Recov	02/15/05	56.000	122.000	
MS	Phenol	108-95-2	5101.0	97.200	% Recov	02/15/05	42.000	111.000	
MS	Nitrobenzene-d5	4165-60-0	3251.0	93.000	% Recov	02/15/05	64.000	111.000	
MS	4-Nitrophenol	100-02-7	4076.3	77.700	% Recov	02/15/05	32.000	118.000	
MS	Pentachlorophenol	87-86-5	4934.6	94.100	% Recov	02/15/05	62.000	114.000	
MS	Phenol-d5	4165-62-2	3350.8	95.800	% Recov	02/15/05	54.000	120.000	
MS	Pyrene	129-00-0	3111.0	89.000	% Recov	02/15/05	66.000	118.000	
MS	2,4,6-Tribromophenol	118-79-6	3377.0	96.600	% Recov	02/15/05	24.000	122.000	
MS	Terphenyl-d14 (7Cl)	98904-43-9	3158.6	90.300	% Recov	02/15/05	35.000	150.000	
MSD	1,2,4-Trichlorobenzene	120-82-1	3253.4	92.700	% Recov	02/15/05	46.000	107.000	
MSD	1,4-Dichlorobenzene	106-46-7	3046.7	86.800	% Recov	02/15/05	30.000	96.000	
MSD	2,4-Dinitrotoluene	121-14-2	2443.5	69.600	% Recov	02/15/05	59.000	106.000	
MSD	2-Fluorophenol	367-12-4	3153.3	89.800	% Recov	02/15/05	42.000	105.000	
MSD	Acenaphthene	83-32-9	3152.1	89.800	% Recov	02/15/05	61.000	116.000	
MSD	4-Chloro-3-methylphenol	59-50-7	5287.2	100.000	% Recov	02/15/05	61.000	106.000	
MSD	2-Chlorophenol	95-57-8	4592.0	87.200	% Recov	02/15/05	66.000	106.000	
MSD	N-Nitrosodi-n-dipropylamine	621-64-7	3503.8	99.800	% Recov	02/15/05	71.000	114.000	
MSD	2-Fluorobiphenyl	321-60-8	3158.2	90.000	% Recov	02/15/05	56.000	122.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Phenol	108-95-2	5026.5	95.500	% Recov	02/15/05	42.000	111.000	
MSD	Nitrobenzene-d5	4165-60-0	3339.2	95.100	% Recov	02/15/05	64.000	111.000	
MSD	4-Nitrophenol	100-02-7	4042.1	76.800	% Recov	02/15/05	32.000	118.000	
MSD	Pentachlorophenol	87-86-5	4750.5	90.200	% Recov	02/15/05	62.000	114.000	
MSD	Phenol-d5	4165-62-2	3255.8	92.800	% Recov	02/15/05	54.000	120.000	
MSD	Pyrene	129-00-0	3105.7	88.500	% Recov	02/15/05	66.000	118.000	
MSD	2,4,6-Tribromophenol	118-79-6	3378.6	96.300	% Recov	02/15/05	24.000	122.000	
MSD	Terphenyl-d14 (7Cl)	98904-43-9	3175.0	90.500	% Recov	02/15/05	35.000	150.000	
SPK-RPD	1,2,4-Trichlorobenzene	120-82-1	92.700	2.623	RPD	02/15/05	0.000	20.000	
SPK-RPD	1,4-Dichlorobenzene	106-46-7	86.800	2.727	RPD	02/15/05	0.000	20.000	
SPK-RPD	2,4-Dinitrotoluene	121-14-2	69.600	9.966	RPD	02/15/05	0.000	20.000	
SPK-RPD	2-Fluorophenol	367-12-4	89.800	0.223	RPD	02/15/05	0.000	20.000	
SPK-RPD	Acenaphthene	83-32-9	89.800	0.335	RPD	02/15/05	0.000	20.000	
SPK-RPD	4-Chloro-3-methylphenol	59-50-7	100.000	3.770	RPD	02/15/05	0.000	20.000	
SPK-RPD	2-Chlorophenol	95-57-8	87.200	1.818	RPD	02/15/05	0.000	20.000	
SPK-RPD	N-Nitrosodi-n-dipropylamine	621-64-7	99.800	0.200	RPD	02/15/05	0.000	20.000	
SPK-RPD	2-Fluorobiphenyl	321-60-8	90.000	3.279	RPD	02/15/05	0.000	20.000	
SPK-RPD	Phenol	108-95-2	95.500	1.764	RPD	02/15/05	0.000	20.000	
SPK-RPD	Nitrobenzene-d5	4165-60-0	95.100	2.233	RPD	02/15/05	0.000	20.000	
SPK-RPD	4-Nitrophenol	100-02-7	76.800	1.165	RPD	02/15/05	0.000	20.000	
SPK-RPD	Pentachlorophenol	87-86-5	90.200	4.232	RPD	02/15/05	0.000	20.000	
SPK-RPD	Phenol-d5	4165-62-2	92.800	3.181	RPD	02/15/05	0.000	20.000	
SPK-RPD	Pyrene	129-00-0	88.500	0.563	RPD	02/15/05	0.000	20.000	
SPK-RPD	2,4,6-Tribromophenol	118-79-6	96.300	0.311	RPD	02/15/05	0.000	20.000	
SPK-RPD	Terphenyl-d14 (7Cl)	98904-43-9	90.500	0.221	RPD	02/15/05	0.000	20.000	

Lab ID: W050000296
BATCH QC ASSOCIATED WITH SAMPLE

SURR	2-Fluorophenol	367-12-4	3009.7	86.800	% Recov	02/15/05	42.000	105.000
SURR	2-Fluorobiphenyl	321-60-8	3298.1	95.100	% Recov	02/15/05	56.000	122.000

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Nitrobenzene-d5	4165-60-0	3462.4	99.800	% Recov	02/15/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	3261.1	94.000	% Recov	02/15/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	3098.9	89.300	% Recov	02/15/05	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3032.9	87.400	% Recov	02/15/05	35.000	150.000	
Lab ID: W050000297									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	2-Fluorophenol	367-12-4	2945.6	85.100	% Recov	02/15/05	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	3280.7	94.700	% Recov	02/15/05	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	3482.2	101.000	% Recov	02/15/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	3309.9	95.600	% Recov	02/15/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	3094.3	89.400	% Recov	02/15/05	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3062.6	88.400	% Recov	02/15/05	35.000	150.000	
Lab ID: W050000298									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	2-Fluorophenol	367-12-4	2957.1	85.100	% Recov	02/15/05	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	3305.9	95.200	% Recov	02/15/05	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	3415.7	98.300	% Recov	02/15/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	3296.8	94.900	% Recov	02/15/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	3181.3	91.600	% Recov	02/15/05	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3036.2	87.400	% Recov	02/15/05	35.000	150.000	
Lab ID: W050000299									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	2-Fluorophenol	367-12-4	3040.0	86.400	% Recov	02/15/05	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	3305.0	94.000	% Recov	02/15/05	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	3411.3	97.000	% Recov	02/15/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	3313.2	94.200	% Recov	02/15/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	3243.2	92.200	% Recov	02/15/05	24.000	122.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3045.6	86.600	% Recov	02/15/05	35.000	150.000	

Lab ID: W050000300
BATCH QC ASSOCIATED WITH SAMPLE

SURR	2-Fluorophenol	367-12-4	3148.4	89.500	% Recov	02/15/05	42.000	105.000	
SURR	2-Fluorobiphenyl	321-60-8	3370.3	95.800	% Recov	02/15/05	56.000	122.000	
SURR	Nitrobenzene-d5	4165-60-0	3462.0	98.400	% Recov	02/15/05	64.000	111.000	
SURR	Phenol-d5	4165-62-2	3342.7	95.000	% Recov	02/15/05	54.000	120.000	
SURR	2,4,6-Tribromophenol	118-79-6	3143.0	89.300	% Recov	02/15/05	24.000	122.000	
SURR	Terphenyl-d14 (7Cl)	98904-43-9	3034.0	86.200	% Recov	02/15/05	35.000	150.000	

BATCH QC

BLANK	1,2,4-Trichlorobenzene	120-82-1	< 290	n/a	ug/Kg	02/15/05			U
BLANK	1,4-Dichlorobenzene	106-46-7	< 310	n/a	ug/Kg	02/15/05			U
BLANK	2,4-Dinitrotoluene	121-14-2	< 67	n/a	ug/Kg	02/15/05			U
BLANK	2-Fluorophenol	367-12-4	2987.5	89.600	% Recov	02/15/05	42.000	105.000	
BLANK	Acenaphthene	83-32-9	< 67	n/a	ug/Kg	02/15/05			U
BLANK	4-Chloro-3-methylphenol	59-50-7	< 67	n/a	ug/Kg	02/15/05			U
BLANK	2-Chlorophenol	95-57-8	< 150	n/a	ug/Kg	02/15/05			U
BLANK	N-Nitrosodi-n-dipropylamine	621-64-7	< 67	n/a	ug/Kg	02/15/05			U
BLANK	2-Fluorobiphenyl	321-60-8	3185.6	95.600	% Recov	02/15/05	56.000	122.000	
BLANK	Phenol	108-95-2	< 100	n/a	ug/Kg	02/15/05			U
BLANK	Nitrobenzene-d5	4165-60-0	3241.3	97.200	% Recov	02/15/05	64.000	111.000	
BLANK	4-Nitrophenol	100-02-7	< 650	n/a	ug/Kg	02/15/05			U
BLANK	Pentachlorophenol	87-86-5	< 300	n/a	ug/Kg	02/15/05			U
BLANK	Phenol-d5	4165-62-2	3240.9	97.200	% Recov	02/15/05	54.000	120.000	
BLANK	Pyrene	129-00-0	< 67	n/a	ug/Kg	02/15/05			U
BLANK	Tributyl phosphate	126-73-8	< 67	n/a	ug/Kg	02/15/05			U
BLANK	2,4,6-Tribromophenol	118-79-6	2875.4	86.300	% Recov	02/15/05	24.000	122.000	
BLANK	Terphenyl-d14 (7Cl)	98904-43-9	2879.1	86.400	% Recov	02/15/05	35.000	150.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: SW-846 8270B Semi-Vols

SAF Number: F04-015
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
LCS	1,2,4-Trichlorobenzene	120-82-1	3054.7	91.600	% Recov	02/15/05	46.000	107.000	
LCS	1,4-Dichlorobenzene	106-46-7	2875.0	86.300	% Recov	02/15/05	42.000	111.000	
LCS	2,4-Dinitrotoluene	121-14-2	2874.3	86.200	% Recov	02/15/05	59.000	106.000	
LCS	2-Fluorophenol	367-12-4	2896.2	86.900	% Recov	02/15/05	50.000	110.000	
LCS	Acenaphthene	83-32-9	2979.5	89.400	% Recov	02/15/05	61.000	116.000	
LCS	4-Chloro-3-methylphenol	59-50-7	4618.6	92.400	% Recov	02/15/05	61.000	106.000	
LCS	2-Chlorophenol	95-57-8	4380.0	87.600	% Recov	02/15/05	66.000	106.000	
LCS	N-Nitrosodi-n-dipropylamine	621-64-7	3082.8	92.500	% Recov	02/15/05	71.000	114.000	
LCS	2-Fluorobiphenyl	321-60-8	2994.8	89.800	% Recov	02/15/05	58.000	109.000	
LCS	Phenol	108-95-2	4733.9	94.700	% Recov	02/15/05	67.000	105.000	
LCS	Nitrobenzene-d5	4165-60-0	3177.9	95.300	% Recov	02/15/05	60.000	118.000	
LCS	4-Nitrophenol	100-02-7	4166.8	83.300	% Recov	02/15/05	32.000	118.000	
LCS	Pentachlorophenol	87-86-5	4198.5	84.000	% Recov	02/15/05	62.000	114.000	
LCS	Phenol-d5	4165-62-2	3070.7	92.100	% Recov	02/15/05	59.000	116.000	
LCS	Pyrene	129-00-0	2687.3	80.600	% Recov	02/15/05	66.000	118.000	
LCS	2,4,6-Tribromophenol	118-79-6	3023.3	90.700	% Recov	02/15/05	60.000	120.000	
LCS	Terphenyl-d14 (7Cl)	98904-43-9	2801.8	84.100	% Recov	02/15/05	60.000	120.000	

000042

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte		CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000288										
BATCH QC ASSOCIATED WITH SAMPLE										
MS	Kerosene		TPHKEROSENE	263360	106.000	% Recov	02/08/05	70.000	130.000	
MS	ortho-Terphenyl	Surr	84-15-1	27882	112.000	% Recov	02/08/05	70.000	130.000	
MSD	Kerosene		TPHKEROSENE	126680	102.000	% Recov	02/08/05	70.000	130.000	
MSD	ortho-Terphenyl	Surr	84-15-1	24542	98.400	% Recov	02/08/05	70.000	130.000	
SPK-RPD	ortho-Terphenyl	Surr	84-15-1	98.400	12.928	RPD	02/08/05	0.000	20.000	
Lab ID: W050000296										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	ortho-Terphenyl	Surr	84-15-1	26810	103.000	% Recov	02/08/05	70.000	130.000	
Lab ID: W050000297										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	ortho-Terphenyl	Surr	84-15-1	26808	103.000	% Recov	02/08/05	70.000	130.000	
Lab ID: W050000298										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	ortho-Terphenyl	Surr	84-15-1	26698	101.000	% Recov	02/08/05	70.000	130.000	
Lab ID: W050000299										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	ortho-Terphenyl	Surr	84-15-1	25845	98.000	% Recov	02/08/05	70.000	130.000	
Lab ID: W050000300										
BATCH QC ASSOCIATED WITH SAMPLE										
SURR	ortho-Terphenyl	Surr	84-15-1	25106	95.200	% Recov	02/08/05	70.000	130.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F04-015
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BATCH QC									
BLANK	Kerosene	TPHKEROSENE	< 3800	n/a	ug/Kg	02/08/05			U
BLANK	ortho-Terphenyl Surr	84-15-1	24379	97.500	% Recov	02/08/05	70.000	130.000	
BLANK	Total Pet. Hydrocarbons Diesel	TPHDIESEL	< 3800	n/a	ug/Kg	02/08/05			U
LCS	ortho-Terphenyl Surr	84-15-1	24143	96.600	% Recov	02/08/05	70.000	130.000	
LCS	Total Pet. Hydrocarbons Diesel	TPHDIESEL	114020	91.200	% Recov	02/08/05	80.000	120.000	

000044

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: NWTPH-GX TPH Gasoline Range

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000288									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<250	n/a	RPD	02/16/05	0.000	20.000	U
MS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	1500	111.111	% Recov	02/16/05	50.000	150.000	
MSD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	1560	115.556	% Recov	02/16/05	50.000	150.000	
SPK-RPD	Total Pet. Hydrocarbons Gas	TPHGASOLINE	115.556	3.922	RPD	02/16/05	0.000	20.000	
BATCH QC									
BLANK	Total Pet. Hydrocarbons Gas	TPHGASOLINE	<250	n/a	mg/L	02/16/05	0.000	300.000	U
LCS	Total Pet. Hydrocarbons Gas	TPHGASOLINE	1110	86.991	% Recov	02/16/05	85.000	115.000	

000045

Date: 23 May 2005
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-MW-1 Characterization Sampling and Analysis - Soil
Subject: Volatile - Data Package No.WSCF20050265 (50265)

JUN 2005
RECEIVED

INTRODUCTION

This memo presents the results of data validation on Data Package No. 50265 prepared by WSCF Analytical Laboratories. (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample	Media	Validation	Analysis
B19PM5	2/3/05	Soil	C	See note 1
B19PM6	2/3/05	Soil	C	See note 1
B19PM7	2/3/05	Soil	C	See note 1
B19PM8	2/3/05	Soil	C	See note 1
B19PM9	2/3/05	Soil	C	See note 1

1 - Volatiles by 8260A.

Data validation was conducted in accordance with the FHI validation statement of work and the 200-MW-1 Miscellaneous Waste Group OU RI/FS Workplan, DOE/RL-2001-65 (Rev. 0), April 2002 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. Qualified Data Summary and 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/Sample Preservation**

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are

as follows: Soil samples must be analyzed within 14 days of the date of sample collection.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holing times were acceptable.

- **Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples of a given matrix. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the project quantitation limit (MDL) and is less than five times (or less than ten times for laboratory contaminants) the highest associated blank result, the sample result value is raised to the MDL, qualified as undetected and flagged "U".

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike

Matrix spike/matrix spike duplicate and blank spike analyses are used to assess the analytical accuracy of the reported data. The matrix spike/matrix spike duplicate are used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using the target compounds for which percent recoveries must be within 50-150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J".

Undetected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All accuracy and blank spike results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of system performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory program. When a surrogate compound recovery is out of the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Undetected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Samples with surrogate recoveries less than ten percent are qualified as estimates and flagged "J" for detects, and rejected and flagged "UR" for nondetects. Undetected compounds with surrogate recoveries greater than the upper control limit require no qualification. Surrogates are not required for formaldehyde analysis.

All surrogate recovery results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Sample results must be within RPD limits of +/- 35%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All MS/MSD RPD results were acceptable.

Field Duplicate Samples

One set of field duplicates (B19PM5/B19PM6) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Detection Limits**

Reported analytical detection levels are compared against the required target quantitation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. Ten analytes exceeded the RTQL. Under the FHI statement of work, no qualification is required.

- **Completeness**

Data package No. 50265 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Ten analytes exceeded the RTQL. Under the FHI statement of work, no qualification is required.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2001-65, Rev. 0, *200-MW-1 Miscellaneous Waste Group OUs RI/FS Work Plan*, April 2002.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validator in compliance with the BHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

VOLATILE DATA QUALIFICATION SUMMARY*

SDG: 50265	REVIEWER: TLI	DATE: 5/23/05	PAGE_1_OF_1_
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (UG/KG)

Project: FLUOR-HANFORD											
Laboratory: WSCF											
Case:	SDG: WSCF20050265										
Sample Number		B19PM5		B19PM6		B19PM7		B19PM8		B19PM9	
Remarks				Duplicate							
Sample Date		2/3/05		2/3/05		2/3/05		2/3/05		2/3/05	
VOA	RTQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1-Dichloroethene		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Trichloroethene		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Benzene	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Toluene		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Chlorobenzene	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1,1-Dichloroethane	10	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Ethylbenzene	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Styrene		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
cis-1,3-Dichloropropene		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
trans-1,3-Dichloropropene		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1,2-Dichloroethane	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
4-Methyl-2-pentanone		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Dibromochloromethane		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Tetrachloroethene		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Xylenes (total)		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1,2-Dichloroethene (total)		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Carbon Tetrachloride	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
2-Hexanone		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Acetone	20	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Chloroform	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1,1,1-Trichloroethane	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Bromomethane		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Chloromethane		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Chloroethane		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Vinyl Chloride		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Methylene Chloride	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Carbon Disulfide		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Bromoform		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
Bromodichloromethane		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1,2-Dichloropropane		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
2-Butanone		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1,1,2-Trichloroethane	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1,1,2,2-Tetrachloroethane		<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
1-Butanol		<42.0	U	<42.0	U	<42.0	U	<42.0	U	<42.0	U
n-Butylbenzene	5	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
trans-1,2-Dichloroethylene	1	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U
cis-1,2-Dichloroethylene	1	<2.10	U	<2.10	U	<2.10	U	<2.10	U	<2.10	U

000010

REVISED 8-7-05

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize mis-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic															
W050000296	B19PM5	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 510	ug/kg	5.00	5.1e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		2.80e+03	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.20e+03	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 670	ug/kg	1.00	6.7e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000296	B19PM5	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000296	B19PM5	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
~~W050000296~~	~~B19PM5~~	~~GRP~~	~~TRENT~~	~~TPHDIESEL~~	~~Total Pet. Hydrocarbons Diesel~~	~~SOIL~~	~~NWTPH~~	~~U~~	~~< 3.90e+03~~	~~ug/kg~~	~~1.00~~	~~3.9e+03~~	~~02/08/05~~	~~02/03/05~~	~~02/03/05~~
W050000296	B19PM5	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		2.30e+05	ug/kg	1.00	6.5e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 410	ug/kg	4.00	4.1e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		3.00e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.10e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 670	ug/kg	1.00	6.7e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05

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5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W050000297~~	~~B19PM6~~	~~GRP~~	~~TRENT~~	83-32-9	Acenaphthene	SOIL	LA-523-456	U	<	69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	<	310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	<	150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
~~W050000297~~	~~B19PM6~~	~~GRP~~	~~TRENT~~	~~126-73-8~~	~~Tributyl-phosphate~~	~~SOIL~~	~~LA-523-456~~	~~U~~	~~<~~	~~69.0~~	~~ug/kg~~	~~1.00~~	~~69~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000297	B19PM6	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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RQ = Result Qualifier

DF = Dilution Factor

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000297	B19PM6	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		1.80e+05	ug/kg	1.00	6.5e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 400	ug/kg	4.00	4.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		2.80e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.10e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05

5/20/05

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5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000298	B19PM7	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 670	ug/kg	1.00	6.7e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000298	B19PM7	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
~~W050000298~~	~~B19PM7~~	~~GRP~~	~~TRENT~~	~~TPHDIESEL~~	~~Total Pet. Hydrocarbons Diesel~~	~~SOIL~~	~~NWTPH~~	~~U~~	~~< 4.00e+03~~	~~ug/kg~~	~~1.00~~	~~4.0e+03~~	~~02/08/05~~	~~02/03/05~~	~~02/03/05~~
W050000298	B19PM7	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH	U	< 6.60e+05	ug/kg	1.00	6.6e+03	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05

5/20/05

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pr 5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 100	ug/kg	1.00	1.0e+02	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		410	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		160	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 880	ug/kg	1.00	6.8e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 110	ug/kg	1.00	1.1e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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

5/20/05

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	<	2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	<	42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05

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

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
~~W050000299~~	~~B19PM8~~	~~GRP~~	~~TRENT~~	~~TPHDIESEL~~	~~Total Pet. Hydrocarbons Diesel~~	~~SOIL~~	~~NWTPH~~	~~U~~	~~< 4.00e+03~~	~~ug/kg~~	~~1.00~~	~~4.0e+03~~	~~02/08/05~~	~~02/03/05~~	~~02/03/05~~
W050000299	B19PM8	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 100	ug/kg	1.00	1.0e+02	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 680	ug/kg	1.00	6.8e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 110	ug/kg	1.00	1.1e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
~~W050000300~~	~~B19PM9~~	~~GRP~~	~~TRENT~~	~~126-73-8~~	~~Tributyl phosphate~~	~~SOIL~~	~~LA-523-456~~	~~U~~	~~< 70.0~~	~~ug/kg~~	~~1.00~~	~~70~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~

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JR 5/20/05

JR 5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000300	B19PM9	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	100-42-5	Styrene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	10061-01-5	cis-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	10061-02-6	trans-1,3-Dichloropropene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	107-06-2	1,2-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	108-10-1	4-Methyl-2-Pentanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	124-48-1	Dibromochloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	127-18-4	Tetrachloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	1330-20-7	Xylenes (total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000300	B19PM9	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
~~W050000300~~	~~B19PM9~~	~~GRP~~	~~TRENT~~	~~TPHDIESEL~~	~~Total Pet. Hydrocarbons Diesel~~	~~SOIL~~	~~NWTPH~~	~~U~~	~~< 4.00e+03~~	~~ug/kg~~	~~1.00~~	~~4.0e+03~~	~~02/08/05~~	~~02/03/05~~	~~02/03/05~~
W050000300	B19PM9	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05

5/20/05

5/20/05

000021

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20050265**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F04-015**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-MW-1 Characterization Sampling and Analysis – Soil/216-T-33, 16.5' – 30', samples (B19PM5, B19PM6, B19PM7, B19PM8, B19PM9) were received at the WSCF Laboratory on January 3, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 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 forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Anions by EPA Method 300. 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-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. Analytical work was performed with no deviations to the approved method.
- pH by EPA Method 9045C. Analytical work was performed with no deviations to the approved method.

Organic

- PCB by EPA Method 8082. Analytical work was performed with no deviations to the approved method.

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

- TPH Diesel/Gas 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 (Plutonium, Americium and Uranium), GEA, Sr-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Anions - The hold times for Nitrite and Nitrate analyses were not met. A Blank, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 14 through 15 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19PN2 (SDG# 20050300, SAF# F04-01).

- Fluoride – Sample B19PM5, B19PM6 and B19PM7 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Phosphate - Sample B19PM5, B19PM6, B19PM7 and B19PM8 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrate - Sample B19PM9 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.

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 GPP Letter of Instruction. See page 16 for QC details. Analytical Note:

- The Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. All sample results were less than the detection limit and U-flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See pages 17 through 18 for QC details. Analytical Notes:

- Preparation Date: 08-feb-2005.
- Silver, Cadmium, Copper, Mercury, Lead and Uranium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

Percent Solids – Analyzed for organic results correction.

pH – The hold time for this analysis was met. All internal laboratory controls were within established limits.

Organic Comments

- Sample results were moisture corrected and reported on a dry-weight basis.

PCB – 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 GPP Letter of Instruction. See pages 31 through 32 for QC details. Analytical Note:

- Preparation Date: 04-feb-2005.

All QC controls are within the established limits.

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 GPP Letter of Instruction. See pages 33 through 37 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).
- Samples B19PM5, B19PM6 and B19PM7 have a chromatographic lump of unknown organic material which eluted from about eleven minutes to twenty-nine minutes in the chromatograms.

All 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 Spike Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 38 through 39 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.
- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).
- Samples B1B3R1, B19MP5, B19MP6 and B19MP7 contained Extended Motor Oil which was added to the analyte list and reported in the Analytical Results Report.

All QC controls are within the established limits.

TPHG-WA - The hold time for this analysis was met. A Blank, Duplicate, Laboratory Control Sample, Matrix Spike and Matrix Spike Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See page 40 for QC details. Analytical Notes:

- Preparation Date: 16-feb-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

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 GPP Letter of Instruction. See pages 41 through 44 for QC details. All 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 GPP Letter of Instruction. See pages 50 through 53 for QC details. Analytical Note:

- Americium-241, Plutonium-239/240, Strontium-89/90 and Uranium-238 Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

All QC controls are within the established limits.

Radiochemical Tracer Percent Recovery

Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
BLANK		Sr-85	95.3
LCS		Sr-85	97.7

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B1B3R1	W050000288	Sr-85	90.5
DUPLICATE	W050000288	Sr-85	100.3
B19PM5	W050000296	Sr-85	88.3
B19PM6	W050000297	Sr-85	88.0
B19PM7	W050000298	Sr-85	89.2
B19PM8	W050000299	Sr-85	59.3
B19PM9	W050000300	Sr-85	108.1
BLANK		Pu-242	89.9
LCS		Pu-242	84.8
B1B3R1	W050000288	Pu-242	86.7
DUPLICATE	W050000288	Pu-242	83.6
B19PM5	W050000296	Pu-242	67.5
B19PM6	W050000297	Pu-242	89.9
B19PM7	W050000298	Pu-242	65.2
B19PM8	W050000299	Pu-242	82.0
B19PM9	W050000300	Pu-242	83.7
BLANK		Am-243	74.4
LCS		Am-243	79.6
B1B3R1	W050000288	Am-243	82.8
DUPLICATE	W050000288	Am-243	85.5
B19PM5	W050000296	Am-243	98.6
B19PM6	W050000297	Am-243	85.2

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
B19PM7	W050000298	Am-243	97.4
B19PM8	W050000299	Am-243	83.8
B19PM9	W050000300	Am-243	99.9
BLANK		U-232	68.3
LCS		U-232	88.5
B1B3R1	W050000288	U-232	78.3
DUPLICATE	W050000288	U-232	77.5
B19PM5	W050000296	U-232	59.8
B19PM6	W050000297	U-232	79.8
B19PM7	W050000298	U-232	82.9
B19PM8	W050000299	U-232	74.0
B19PM9	W050000300	U-232	77.3

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

314/05

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-080	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
216-T-33; 16.5ft-19.0ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-386 1	119144ES10	Governement 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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN7

20050265

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly					
NO. OF CONTAINER(S)	1	1	1	3	1	1					
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL					
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B19PM5 W03000296	SOIL	2-3-05	0750	X	X	X	X	X	X				
B19PM6 297	SOIL	2-3-05	0750	X	X	X	X	X	X				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister / [signature]	2-3-05 1315	Victor Bus [signature]	2/3/05 1315
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000029

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F04-015-081	PAGE 1 OF 1
COLLECTOR Pope/Pfister/Wiberg/Tyra	COMPANY CONTACT CS Cearlock	TELEPHONE NO. 372-9638	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION 216-T-33; 19ft-21.5ft	PROJECT DESIGNATION 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO. F04-015		
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-386 1	COA 119144ES10	METHOD OF SHIPMENT Governement Vehcle		
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN8

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
PRESERVATION				Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
TYPE OF CONTAINER				aG	aG	aG	aGs*	aG	Square Bottle - Poly			
NO. OF CONTAINER(S)				1	1	1	3	1	1			
VOLUME				250mL	120mL	250mL	40mL	120mL	500mL			
SAMPLE ANALYSIS				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA			
B19PM7 W0800002998	SOIL	2-3-05	0850	X	X	X	X	X	X			

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JAKE ADT	2-3-05 1315	Vida Bins	2/3/05 1315

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA – 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000030

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-082	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
216-T-33; 22.5ft-25.0ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-386 1	119144ES10	Governement 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
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B19PN9

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly				
NO. OF CONTAINER(S)	1	1	1	3	1	1				
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL				
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA				

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B19PM8 W050222249	SOIL	2-3-05	1100	X	X	X	X	X	X				

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSA Pfister	2-3-05 1355	Victor Brus	2/3/05 1355

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000031

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-083	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE BN	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
216-T-33; 27.5ft-30ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-386 1	119144ES10	Governement Vehcle		
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PP0

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly				
NO. OF CONTAINER(S)	1	1	1	3	1	1				
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL				
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA				

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B19PM9 W05-0003502	SOIL	2/3/05	1310	X	X	X	X	X	X			

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister/Pfister 2-3-05	1315	Victor B Bus 2/3/05	1315

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000032

Appendix 5

Data Validation Supporting Documentation

GC/MS ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-MW-1			DATA PACKAGE: S026S		
VALIDATOR: TLI		LAB: WSCF		DATE: 5/11/05	
			SDG: S026S		

ANALYSES PERFORMED					
SW-846 8260		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)

SAMPLES/MATRIX
B19PM5 B19PM6 B19PM7 B19PM8
B19PM9
Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

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:

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: NO FB

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: NO PAS

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~~ Yes

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

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

Comments: _____

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: _____

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: trans-1,2 dichloroethylene + cis-1,2-dichloroethylene

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000296									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	4-Bromofluorobenzene	460-00-4	53.650	107.000	% Recov	02/15/05	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	55.340	111.000	% Recov	02/15/05	80.000	134.000	
SURR	Toluene-d8	2037-26-5	51.440	103.000	% Recov	02/15/05	80.000	126.000	
Lab ID: W050000297									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	4-Bromofluorobenzene	460-00-4	55.450	111.000	% Recov	02/15/05	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	55.600	111.000	% Recov	02/15/05	80.000	134.000	
SURR	Toluene-d8	2037-26-5	52.630	105.000	% Recov	02/15/05	80.000	126.000	
Lab ID: W050000298									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	1,1-Dichloroethene	75-35-4	23.520	94.100	% Recov	02/15/05	63.000	117.000	
MS	Benzene	71-43-2	27.020	108.000	% Recov	02/15/05	75.000	129.000	
MS	4-Bromofluorobenzene	460-00-4	56.110	112.000	% Recov	02/15/05	84.000	116.000	
MS	Chlorobenzene	108-90-7	27.470	110.000	% Recov	02/15/05	79.000	119.000	
MS	1,2-Dichloroethane-d4	17060-07-0	57.110	114.000	% Recov	02/15/05	82.000	136.000	
MS	Toluene-d8	2037-26-5	53.530	107.000	% Recov	02/15/05	89.000	119.000	
MS	Toluene	108-88-3	26.890	108.000	% Recov	02/15/05	76.000	120.000	
MS	Trichloroethene	79-01-6	26.160	105.000	% Recov	02/15/05	73.000	123.000	
MSD	1,1-Dichloroethene	75-35-4	24.770	99.100	% Recov	02/15/05	63.000	117.000	
MSD	Benzene	71-43-2	27.710	111.000	% Recov	02/15/05	75.000	129.000	
MSD	4-Bromofluorobenzene	460-00-4	53.720	107.000	% Recov	02/15/05	84.000	116.000	
MSD	Chlorobenzene	108-90-7	27.450	110.000	% Recov	02/15/05	79.000	119.000	
MSD	1,2-Dichloroethane-d4	17060-07-0	55.610	111.000	% Recov	02/15/05	82.000	136.000	
MSD	Toluene-d8	2037-26-5	51.590	103.000	% Recov	02/15/05	89.000	119.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
MSD	Toluene	108-88-3	25.640	103.000	% Recov	02/15/05	76.000	120.000	
MSD	Trichloroethene	79-01-6	26.530	106.000	% Recov	02/15/05	73.000	123.000	
SPK-RPD	1,1-Dichloroethene	75-35-4	99.100	5.176	RPD	02/15/05	0.000	25.000	
SPK-RPD	Benzene	71-43-2	111.000	2.740	RPD	02/15/05	0.000	25.000	
SPK-RPD	4-Bromofluorobenzene	460-00-4	107.000	4.566	RPD	02/15/05	0.000	25.000	
SPK-RPD	Chlorobenzene	108-90-7	110.000	0.000	RPD	02/15/05	0.000	25.000	
SPK-RPD	1,2-Dichloroethane-d4	17060-07-0	111.000	2.667	RPD	02/15/05	0.000	25.000	
SPK-RPD	Toluene-d8	2037-26-5	103.000	3.810	RPD	02/15/05	0.000	25.000	
SPK-RPD	Toluene	108-88-3	103.000	4.739	RPD	02/15/05	0.000	25.000	
SPK-RPD	Trichloroethene	79-01-6	106.000	0.948	RPD	02/15/05	0.000	25.000	
SURR	4-Bromofluorobenzene	460-00-4	55.150	110.000	% Recov	02/15/05	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	57.180	114.000	% Recov	02/15/05	80.000	134.000	
SURR	Toluene-d8	2037-26-5	51.680	103.000	% Recov	02/15/05	80.000	126.000	

000040

Lab ID: W050000299
BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene	460-00-4	55.030	110.000	% Recov	02/15/05	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	56.300	113.000	% Recov	02/15/05	80.000	134.000	
SURR	Toluene-d8	2037-26-5	52.750	106.000	% Recov	02/15/05	80.000	126.000	

Lab ID: W050000300
BATCH QC ASSOCIATED WITH SAMPLE

SURR	4-Bromofluorobenzene	460-00-4	55.060	110.000	% Recov	02/15/05	71.000	125.000	
SURR	1,2-Dichloroethane-d4	17060-07-0	56.810	114.000	% Recov	02/15/05	80.000	134.000	
SURR	Toluene-d8	2037-26-5	52.670	105.000	% Recov	02/15/05	80.000	126.000	

BATCH QC

BLANK	1,1-Dichloroethane	75-34-3	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1,1,1-Trichloroethane	71-55-6	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1,1,2-Trichloroethane	79-00-5	< 2.0	n/a	ug/Kg	02/15/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F04-015
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	1,1,2,2-Tetrachloroethane	79-34-5	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1,1-Dichloroethene	75-35-4	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1,2-Dichloroethane	107-06-2	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1,2-Dichloroethene(Total)	540-59-0	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1-Butanol	71-36-3	< 40	n/a	ug/Kg	02/15/05			U
BLANK	2-Hexanone	591-78-6	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	4-Methyl-2-Pentanone	108-10-1	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Acetone	67-64-1	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Bromodichloromethane	75-27-4	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Benzene	71-43-2	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	4-Bromofluorobenzene	460-00-4	55.000	110.000	% Recov	02/15/05	71.000	125.000	
BLANK	Bromoform	75-25-2	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	n-Butylbenzene	104-51-8	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Carbon disulfide	75-15-0	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Carbon tetrachloride	56-23-5	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Dibromochloromethane	124-48-1	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Chloroform	67-66-3	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Chlorobenzene	108-90-7	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	cis-1,3-Dichloropropene	10061-01-5	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Chloroethane	75-00-3	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1,2-Dichloroethane-d4	17060-07-0	52.140	104.000	% Recov	02/15/05	80.000	134.000	
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	1,2-Dichloropropane	78-87-5	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Ethylbenzene	100-41-4	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Bromomethane	74-83-9	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Chloromethane	74-87-3	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	2-Butanone	78-93-3	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Methylenechloride	75-09-2	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Tetrachloroethene	127-18-4	< 2.0	n/a	ug/Kg	02/15/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: VOA Ground Water Protection

SAF Number: F04-015
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Styrene	100-42-5	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Xylenes (total)	1330-20-7	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Toluene-d8	2037-26-5	53.040	106.000	% Recov	02/15/05	80.000	126.000	
BLANK	Toluene	108-88-3	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	trans-1,3-Dichloropropene	10061-02-6	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Trichloroethene	79-01-6	< 2.0	n/a	ug/Kg	02/15/05			U
BLANK	Vinyl chloride	75-01-4	< 2.0	n/a	ug/Kg	02/15/05			U
LCS	1,1-Dichloroethene	75-35-4	22.760	91.000	% Recov	02/15/05	70.000	130.000	
LCS	Benzene	71-43-2	26.130	105.000	% Recov	02/15/05	70.000	130.000	
LCS	4-Bromofluorobenzene	460-00-4	56.050	112.000	% Recov	02/15/05	71.000	125.000	
LCS	Chlorobenzene	108-90-7	26.780	107.000	% Recov	02/15/05	70.000	130.000	
LCS	1,2-Dichloroethane-d4	17060-07-0	56.640	113.000	% Recov	02/15/05	80.000	134.000	
LCS	Toluene-d8	2037-26-5	53.060	106.000	% Recov	02/15/05	80.000	126.000	
LCS	Toluene	108-88-3	26.090	104.000	% Recov	02/15/05	70.000	130.000	
LCS	Trichloroethene	79-01-6	25.180	101.000	% Recov	02/15/05	70.000	130.000	

000042

Date: 23 May 2005
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-MW-1 Characterization Sampling and Analysis - Soil
Subject: PCB - Data Package No.WSCF20050265 (50265)

AUG 2005
RECEIVED

INTRODUCTION

This memo presents the results of data validation on Data Package No. 50265 prepared by WSCF Analytical Laboratories. (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample	Media	Validation	Analysis
B19PM5	2/3/05	Soil	C	PCBs by 8082
B19PM6	2/3/05	Soil	C	PCBs by 8082
B19PM7	2/3/05	Soil	C	PCBs by 8082
B19PM8	2/3/05	Soil	C	PCBs by 8082
B19PM9	2/3/05	Soil	C	PCBs by 8082

Data validation was conducted in accordance with the FHI validation statement of work and the 200-MW-1 Miscellaneous Waste Group OU RI/FS Workplan, DOE/RL-2001-65 (Rev. 0), April 2002 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. Qualified Data Summary and 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/Sample Preservation**

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 14 days of the date of sample collection.

If holding times are exceeded by less than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than minimum detectable activity (MDA). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than MDA, the result is qualified as undetected and elevated to the MDA.

All method blank target compound results were acceptable.

Field Blanks

No equipment blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Blank Spike

Matrix spike and blank spike analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations and is done in duplicate. Matrix spike and blank spike analyses must be within control limits of 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All matrix spike/blank spike results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 35%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (B19PM5/B19PM6) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required target quantitation limits (RTQL) to ensure that laboratory detection levels meet the required criteria. All results exceeded the analyte specific RTQL. Under the FHI statement of work, no qualification is required.

- **Completeness**

Data Package No. 50265 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

All results exceeded the analyte specific RTQL. Under the FHI statement of work, no qualification is required.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2001-65, Rev. 0, *200-MW-1 Miscellaneous Waste Group OUs RI/FS Work Plan*, April 2002.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PCB DATA QUALIFICATION SUMMARY*

SDG: 50265	REVIEWER: TLI	DATE: 5/23/05	PAGE_1_OF_1_
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

PCB ANALYSIS, SOIL MATRIX, (UG/KG)

Project: FLUOR-HANFORD											
Laboratory: WSCF											
Case:	**SDG: WSCF20050265**										
Sample Number		B19PM5		B19PM6		B19PM7		B19PM8		B19PM9	
Remarks				Duplicate							
Sample Date		2/3/05		2/3/05		2/3/05		2/3/05		2/3/05	
Analysis Date		2/22/05		2/22/05		2/22/05		2/16/05		2/16/05	
PCB	**RTQL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
Aroclor-1016	**16.5**	<260	U	<200	U	<200	U	<52.0	U	<52.0	U
Aroclor-1221	**16.5**	<510	U	<410	U	<400	U	<100	U	<100	U
Aroclor-1232	**16.5**	<260	U	<200	U	<200	U	<52.0	U	<52.0	U
Aroclor-1242	**16.5**	<260	U	<200	U	<200	U	<52.0	U	<52.0	U
Aroclor-1248	**16.5**	<260	U	<200	U	<200	U	<52.0	U	<52.0	U
Aroclor-1254	**16.5**	2800		3000		2800		410		<52.0	U
Aroclor-1260	**16.5**	1200		1100		1100		160		<52.0	U
Arolcor-1262	**16.5**	<260	U	<200	U	<200	U	<52.0	U	<52.0	U
Aroclor-1268	**16.5**	<260	U	<200	U	<200	U	<52.0	U	<52.0	U

000070

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation. NA - Not analyzed

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Organic															
~~W050000296~~	~~B19PM5~~	~~GRP~~	~~TRENT~~	~~TPHGASOLINE~~	~~Total Pet. Hydrocarbons Gas~~	~~SOIL~~	~~LA-523-443~~	~~U~~	~~< 250~~	~~ug/kg~~	~~1.00~~	~~2.5e+02~~	~~02/16/05~~	~~02/03/05~~	~~02/03/05~~
W050000296	B19PM5	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 510	ug/kg	5.00	5.1e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		2.80e+03	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.20e+03	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 260	ug/kg	5.00	2.6e+02	02/22/05	02/03/05	02/03/05
~~W050000296~~	~~B19PM5~~	~~GRP~~	~~TRENT~~	~~100-02-7~~	~~4-Nitrophenol~~	~~SOIL~~	~~LA-523-456~~	~~U~~	~~< 670~~	~~ug/kg~~	~~1.00~~	~~6.7e+02~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000296	B19PM5	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000296	B19PM5	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		2.30e+05	ug/kg	1.00	6.5e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 410	ug/kg	4.00	4.1e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		3.00e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.10e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	100-02-7	4-Nitrophenol	SOIL	LA-523-456	U	< 670	ug/kg	1.00	6.7e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 100	ug/kg	1.00	1.0e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 300	ug/kg	1.00	3.0e+02	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 69.0	ug/kg	1.00	69	02/15/05	02/03/05	02/03/05

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

R 7/27/05

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

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000297	B19PM6	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 3.90e+03	ug/kg	1.00	3.9e+03	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		1.80e+05	ug/kg	1.00	6.5e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPHGASOLINE	Total Pet. Hydrocarbons Gas	SOIL	LA-523-443	U	< 250	ug/kg	1.00	2.5e+02	02/16/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 400	ug/kg	4.00	4.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		2.80e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		1.10e+03	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 200	ug/kg	4.00	2.0e+02	02/22/05	02/03/05	02/03/05

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

Report WGPP/ver. 1.1
Groundwater Remediation Program

7/22/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000298	B19PM7	GRP	TRENT	540-59-0	1,2-Dichloroethene(Total)	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	56-23-5	Carbon tetrachloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	591-78-6	2-Hexanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	67-64-1	Acetone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	67-66-3	Chloroform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-55-6	1,1,1-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	74-83-9	Bromomethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	74-87-3	Chloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-00-3	Chloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-01-4	Vinyl chloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-09-2	Methylenechloride	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-15-0	Carbon disulfide	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-25-2	Bromoform	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	75-27-4	Bromodichloromethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	78-87-5	1,2-Dichloropropane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	78-93-3	2-Butanone	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-00-5	1,1,2-Trichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	79-34-5	1,1,2,2-Tetrachloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	71-36-3	1-Butanol	SOIL	LA-523-455	U	< 42.0	ug/kg	1.00	42	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	104-51-8	n-Butylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TPH/OILH	Tot Pet H-Carbons Motor Oil	SOIL	NWTPH		1.60e+05	ug/kg	1.00	6.6e+03	02/08/05	02/03/05	02/03/05
~~W050000299~~	~~B19PM8~~	~~GRP~~	~~TRENT~~	~~TPHGASOLINE~~	~~Total Pet. Hydrocarbons Gas~~	~~SOIL~~	~~LA-523-443~~	~~U~~	~~< 250~~	~~ug/kg~~	~~1.00~~	~~2.5e+02~~	~~02/16/05~~	~~02/03/05~~	~~02/03/05~~
W050000299	B19PM8	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05

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

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 100	ug/kg	1.00	1.0e+02	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427		410	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427		160	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
~~W050000299~~	~~B19PM8~~	~~GRP~~	~~TRENT~~	~~100-02-7~~	~~4-Nitrophenol~~	~~SOIL~~	~~LA-523-456~~	~~U~~	~~< 680~~	~~ug/kg~~	~~1.00~~	~~6.8e+02~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000299	B19PM8	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 110	ug/kg	1.00	1.1e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	126-73-8	Tributyl phosphate	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-35-4	1,1-Dichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	79-01-6	Trichloroethene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	71-43-2	Benzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-88-3	Toluene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	108-90-7	Chlorobenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	75-34-3	1,1-Dichloroethane	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	100-41-4	Ethylbenzene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05

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

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

Report WGPP/ver. 1.1
Groundwater Remediation Program

5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
~~W050000299~~	~~B19PM8~~	~~GRP~~	~~TRENT~~	~~104-51-8~~	~~n-Butylbenzene~~	~~SOIL~~	~~LA-523-455~~	~~U~~	~~< 2.10~~	~~ug/kg~~	~~1.00~~	~~2.1~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000299	B19PM8	GRP	TRENT	156-60-5	trans-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	156-59-2	cis-1,2-Dichloroethylene	SOIL	LA-523-455	U	< 2.10	ug/kg	1.00	2.1	02/15/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	TPHDIESEL	Total Pet. Hydrocarbons Diesel	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	TPHKEROSENE	Kerosene	SOIL	NWTPH	U	< 4.00e+03	ug/kg	1.00	4.0e+03	02/08/05	02/03/05	02/03/05
~~W050000300~~	~~B19PM9~~	~~GRP~~	~~TRENT~~	~~TPHGASOLINE~~	~~Total Pet. Hydrocarbons Gas~~	~~SOIL~~	~~LA-523-443~~	~~U~~	~~< 250~~	~~ug/kg~~	~~1.00~~	~~2.5e+02~~	~~02/16/05~~	~~02/03/05~~	~~02/03/05~~
W050000300	B19PM9	GRP	TRENT	12674-11-2	Aroclor-1016	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11104-28-2	Aroclor-1221	SOIL	LA-523-427	U	< 100	ug/kg	1.00	1.0e+02	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11141-16-5	Aroclor-1232	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	53469-21-9	Aroclor-1242	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	12672-29-6	Aroclor-1248	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11097-69-1	Aroclor-1254	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11096-82-5	Aroclor-1260	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	37324-23-5	Aroclor-1262	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	11100-14-4	Aroclor-1268	SOIL	LA-523-427	U	< 52.0	ug/kg	1.00	52	02/16/05	02/03/05	02/03/05
~~W050000300~~	~~B19PM9~~	~~GRP~~	~~TRENT~~	~~100-02-7~~	~~4-Nitrophenol~~	~~SOIL~~	~~LA-523-456~~	~~U~~	~~< 680~~	~~ug/kg~~	~~1.00~~	~~6.8e+02~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~
W050000300	B19PM9	GRP	TRENT	106-46-7	1,4-Dichlorobenzene	SOIL	LA-523-456	U	< 330	ug/kg	1.00	3.3e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	108-95-2	Phenol	SOIL	LA-523-456	U	< 110	ug/kg	1.00	1.1e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	120-82-1	1,2,4-Trichlorobenzene	SOIL	LA-523-456	U	< 310	ug/kg	1.00	3.1e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	121-14-2	2,4-Dinitrotoluene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	129-00-0	Pyrene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	59-50-7	4-Chloro-3-methylphenol	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	621-64-7	N-Nitrosodi-n-dipropylamine	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	83-32-9	Acenaphthene	SOIL	LA-523-456	U	< 70.0	ug/kg	1.00	70	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	87-86-5	Pentachlorophenol	SOIL	LA-523-456	U	< 320	ug/kg	1.00	3.2e+02	02/15/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	95-57-8	2-Chlorophenol	SOIL	LA-523-456	U	< 150	ug/kg	1.00	1.5e+02	02/15/05	02/03/05	02/03/05
~~W050000300~~	~~B19PM9~~	~~GRP~~	~~TRENT~~	~~126-73-8~~	~~Tributyl phosphate~~	~~SOIL~~	~~LA-523-456~~	~~U~~	~~< 70.0~~	~~ug/kg~~	~~1.00~~	~~70~~	~~02/15/05~~	~~02/03/05~~	~~02/03/05~~

5/20/05

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

5/20/05

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Groundwater Remediation Program

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20050265, Rev. 2**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F04-015**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-MW-1 Characterization Sampling and Analysis – Soil/216-T-33, 16.5' – 30', samples (B19PM5, B19PM6, B19PM7, B19PM8, B19PM9) were received at the WSCF Laboratory on January 3, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 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 forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Anions by EPA Method 300. 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-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. 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

- PCB by EPA Method 8082. Analytical work was performed with no deviations to the approved method.
- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel/Gas 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 (Plutonium, Americium and Uranium), GEA, Sr-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Anions - The hold times for Nitrite and Nitrate analyses were not met. A Blank, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19PN2 (SDG# 20050300, SAF# F04-01).

- Fluoride – Sample B19PM5, B19PM6 and B19PM7 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Phosphate - Sample B19PM5, B19PM6, B19PM7 and B19PM8 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrate - Sample B19PM9 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.

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 GPP Letter of Instruction. See page 17 for QC details. Analytical Note:

- The Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. All sample results were less than the detection limit and U-flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Notes:

- Preparation Date: 08-feb-2005.

- Silver, Cadmium, Copper, Mercury, Lead and Uranium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

Percent Solids – Analyzed for organic results correction.

pH – The hold time for this analysis was met. All internal laboratory controls were within established limits.

Organic Comments

- Sample results were moisture corrected and reported on a dry-weight basis.

PCB – 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 GPP Letter of Instruction. See pages 32 through 33 for QC details. Analytical Note:

- Preparation Date: 04-feb-2005.

All QC controls are within the established limits.

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 GPP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B19PM5, B19PM6 and B19PM7 have a chromatographic lump of unknown organic material which eluted from about eleven minutes to twenty-nine minutes in the chromatograms.

All 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 Spike Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 39 through 40 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B1B3R1, B19MP5, B19MP6 and B19MP7 contained Extended Motor Oil which was added to the analyte list and reported in the Analytical Results Report.

All QC controls are within the established limits.

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

- Preparation Date: 16-feb-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

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 GPP Letter of Instruction. See pages 42 through 45 for QC details. All 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 GPP Letter of Instruction. See pages 51 through 55 for QC details. Analytical Note:

- Americium-241, Plutonium-239/240, Strontium-89/90 and Uranium-238 Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).
- GEA – QC detail is included on page 51.
- Uranium-234, Urananium-235 and Plutonium-238 - 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	3.522E-02	
BLANK		U-235	-2.403E-03	
B1B3R1	W050000288	U-234	9.442E-01	

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
DUPLICATE	W050000288	U-234	8.554E-01	9.9
B1B3R1	W050000288	U-235	8.358E-02	
DUPLICATE	W050000288	U-235	4.009E-02	70.3
Plutonium-238				
BLANK		Pu-238	-1.441E-02	
B19412	W050000288	Pu-238	3.388E-01	
DUPLICATE	W050000288	Pu-238	4.829E-01	35.1

- Plutonium-242, Americium-243 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontium-85			
BLANK		Sr-85	95.3
LCS		Sr-85	97.7
B1B3R1	W050000288	Sr-85	90.5
DUPLICATE	W050000288	Sr-85	100.3
B19PM5	W050000296	Sr-85	88.3
B19PM6	W050000297	Sr-85	88.0
B19PM7	W050000298	Sr-85	89.2
B19PM8	W050000299	Sr-85	59.3
B19PM9	W050000300	Sr-85	108.1

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Plutonium-242			
BLANK		Pu-242	89.9
LCS		Pu-242	84.8
B1B3R1	W050000288	Pu-242	86.7
DUPLICATE	W050000288	Pu-242	83.6
B19PM5	W050000296	Pu-242	67.5
B19PM6	W050000297	Pu-242	89.9
B19PM7	W050000298	Pu-242	65.2
B19PM8	W050000299	Pu-242	82.0
B19PM9	W050000300	Pu-242	83.7
Americium-243			
BLANK		Am-243	74.4
LCS		Am-243	79.6
B1B3R1	W050000288	Am-243	82.8
DUPLICATE	W050000288	Am-243	85.5
B19PM5	W050000296	Am-243	98.6
B19PM6	W050000297	Am-243	85.2
B19PM7	W050000298	Am-243	97.4
B19PM8	W050000299	Am-243	83.8
B19PM9	W050000300	Am-243	99.9
Uranium-232			
BLANK		U-232	68.3

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
LCS		U-232	74.9
B1B3R1	W050000288	U-232	78.3
DUPLICATE	W050000288	U-232	77.5
B19PM5	W050000296	U-232	59.8
B19PM6	W050000297	U-232	79.8
B19PM7	W050000298	U-232	82.9
B19PM8	W050000299	U-232	74.0
B19PM9	W050000300	U-232	77.3

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

3/4/05

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-080	PAGE 1 OF 1
COLLECTOR: Pope/Pfister/Wiberg/Tyra	COMPANY CONTACT: CS Cearlock; TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ	PRICE CODE: 8N; AIR QUALITY: ☐; DATA TURNAROUND: 45 Days / 45 Days
SAMPLING LOCATION: 216-T-33; 16.5ft-19.0ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-386 1; COA: 119144ES10	METHOD OF SHIPMENT: Governement 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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN7

20050265

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM5 W08000296	SOIL	2-3-05	0750	X	X	X	X	X	X
B19PM6 297	SOIL	2-3-05	0750	X	X	X	X	X	X

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM: JS Pfister	2-3-05 13:55	RECEIVED BY/STORED IN: Victor Bus	2/3/05 13:55
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 HR. TURNAROUND

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

000025

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F04-015-081	PAGE 1 OF 1
COLLECTOR Pope/Pfister/Wiberg/Tyra	COMPANY CONTACT CS Cearlock	TELEPHONE NO. 372-9638	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N AIR QUALITY ☐	DATA TURNAROUND 45 Days / 45 Days
SAMPLING LOCATION 216-T-33; 19ft-21.5ft	PROJECT DESIGNATION 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO. F04-015		
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-386 1	COA 119144ES10	METHOD OF SHIPMENT Governement Vehcle		
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN8

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly			
NO. OF CONTAINER(S)	1	1	1	3	1	1			
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL			
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B19PM7 W0800002978	SOIL	2-3-05	0850	X	X	X	X	X	X			

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSAle/ASH	2-3-05 1315S	V. Van Bruns	2/3/05 1315S

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000026

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-082	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Wiberg/Tyra	**COMPANY CONTACT** CS Cearlock	**TELEPHONE NO.** 372-9638	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION 216-T-33; 22.5ft-25.0ft	**PROJECT DESIGNATION** 200-MW-1 Characterization Sampling and Analysis - Soil		**SAF NO.** F04-015
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-386 1	**COA** 119144ES10	**METHOD OF SHIPMENT** Governement Vehcle
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 8N **AIR QUALITY** ☐ **DATA TURNAROUND** 45 Days / 45 Days

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 N/A

SPECIAL HANDLING AND/OR STORAGE Radioactive Tle To: B19PN9

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly				
NO. OF CONTAINER(S)	1	1	1	3	1	1				
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL				
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	*PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA				

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B19PM8 W050223049	SOIL	2-3-05	1100	X	X	X	X	X	X				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSA Kelly 2-3-05	1355	Victor Bias	2/3/05 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA – 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 – Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000027

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-083	PAGE 1 OF 1

COLLECTOR Pope/Pfister/Wiberg/Tyra	COMPANY CONTACT CS Cearlock	TELEPHONE NO. 372-9638	PROJECT COORDINATOR TRENT, SJ
SAMPLING LOCATION 216-T-33; 27.5ft-30ft	PROJECT DESIGNATION 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO. F04-015
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-386 1	COA 119144ES10	METHOD OF SHIPMENT Governement Vehcle
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A

PRICE CODE 8N

AIR QUALITY ☐

DATA TURNAROUND 45 Days / 45 Days

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
N/A

SPECIAL HANDLING AND/OR STORAGE
Radioactive Tie To: B19PP0

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly				
NO. OF CONTAINER(S)	1	1	1	3	1	1				
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL				
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA				

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B19PM9 W05000500	SOIL	2/3/05	1310	X	X	X	X	X	X			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM JS Pfister / JS Pfister 2-3-05	DATE/TIME 1315S	RECEIVED BY/STORED IN Victor B Bus / 2/3/05	DATE/TIME 1315S
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000028

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-MW-1			DATA PACKAGE: S0265		
VALIDATOR: TLI		LAB: WSCF		DATE: 5/12/05	
			SDG: S0265		
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
B19PM5	B19PM6	B19PM7	B19PM8	B19PM9	
					soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (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

DDT and endrin breakdowns acceptable? ..... Yes No N/A

Comments:

PCB 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:

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

Surrogates analyzed? ..... Yes No N/A

Surrogate 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: No PAS

PCB 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: _____

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? ..... Yes No N/A

Positive results resolved acceptably? ..... 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: ~~[illegible] — J [illegible] MS/MSD M7 — J~~ 7/27/01

PCB 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

Detection limits meet RDL? ..... Yes No N/A

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

Comments: all undetects ever

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other absorbent) cleanup performed? ..... Yes No N/A

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

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

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

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: PCBs complete list

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000296									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	Decachlorobiphenyl	2051-24-3	1102.2	107.000	% Recov	02/22/05	50.000	150.000	
SURR	Tetrachloro-m-xylene	877-09-8	1092.2	106.000	% Recov	02/22/05	50.000	150.000	
Lab ID: W050000297									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	Decachlorobiphenyl	2051-24-3	1153.6	113.000	% Recov	02/22/05	50.000	150.000	
SURR	Tetrachloro-m-xylene	877-09-8	1183.5	116.000	% Recov	02/22/05	50.000	150.000	
Lab ID: W050000298									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	Decachlorobiphenyl	2051-24-3	1078.8	107.000	% Recov	02/22/05	50.000	150.000	
SURR	Tetrachloro-m-xylene	877-09-8	1058.2	105.000	% Recov	02/22/05	50.000	150.000	
Lab ID: W050000299									
BATCH QC ASSOCIATED WITH SAMPLE									
SURR	Decachlorobiphenyl	2051-24-3	1067.0	103.000	% Recov	02/16/05	50.000	150.000	
SURR	Tetrachloro-m-xylene	877-09-8	977.26	94.000	% Recov	02/16/05	50.000	150.000	
Lab ID: W050000300									
BATCH QC ASSOCIATED WITH SAMPLE									
MS	Aroclor-1254	11097-69-1	1243.4	120.000	% Recov	02/22/05	75.000	125.000	
MS	Decachlorobiphenyl	2051-24-3	1063.4	103.000	% Recov	02/22/05	50.000	150.000	
MS	Tetrachloro-m-xylene	877-09-8	1010.0	97.500	% Recov	02/22/05	50.000	150.000	
MSD	Aroclor-1254	11097-69-1	1208.7	116.630	% Recov	02/22/05	75.000	125.000	
MSD	Decachlorobiphenyl	2051-24-3	1063.7	103.000	% Recov	02/22/05	50.000	150.000	
MSD	Tetrachloro-m-xylene	877-09-8	1021.4	98.600	% Recov	02/22/05	50.000	150.000	

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: PCBs complete list

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
SPK-RPD	Aroclor-1254	11097-69-1	116.630	2.848	RPD	02/22/05	0.000	25.000	
SPK-RPD	Decachlorobiphenyl	2051-24-3	103.000	0.000	RPD	02/16/05	0.000	20.000	
SPK-RPD	Tetrachloro-m-xylene	877-09-8	98.600	1.122	RPD	02/16/05	0.000	20.000	
SURR	Decachlorobiphenyl	2051-24-3	1045.9	101.000	% Recov	02/16/05	50.000	150.000	
SURR	Tetrachloro-m-xylene	877-09-8	976.81	94.300	% Recov	02/16/05	50.000	150.000	

BATCH QC

BLANK	Aroclor-1016	12674-11-2	< 50	n/a	UGKG	02/16/05			U
BLANK	Aroclor-1221	11104-28-2	< 100	n/a	ug/Kg	02/16/05			U
BLANK	Aroclor-1232	11141-16-5	< 50	n/a	ug/Kg	02/16/05			U
BLANK	Aroclor-1242	53469-21-9	< 50	n/a	ug/Kg	02/16/05			U
BLANK	Aroclor-1248	12672-29-6	< 50	n/a	ug/Kg	02/16/05			U
BLANK	Aroclor-1254	11097-69-1	< 50	n/a	ug/Kg	02/16/05			U
BLANK	Aroclor-1260	11096-82-5	< 50	n/a	ug/Kg	02/16/05			U
BLANK	Aroclor-1262	37324-23-5	< 50	n/a	ug/Kg	02/16/05			U
BLANK	Aroclor-1268	11100-14-4	< 50	n/a	ug/Kg	02/16/05			U
BLANK	Decachlorobiphenyl	2051-24-3	981.38	98.100	% Recov	02/16/05	50.000	150.000	
BLANK	Tetrachloro-m-xylene	877-09-8	998.65	99.900	% Recov	02/16/05	50.000	150.000	
LCS	Aroclor-1254	11097-69-1	1142.4	114.000	% Recov	02/16/05	70.000	130.000	
LCS	Decachlorobiphenyl	2051-24-3	1022.8	102.000	% Recov	02/16/05	50.000	150.000	
LCS	Tetrachloro-m-xylene	877-09-8	990.99	99.100	% Recov	02/16/05	50.000	150.000	

Date: 23 May 2005
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-MW-1 Characterization Sampling and Analysis - Soil
Subject: Inorganics - Data Package No. WSCF20050265 (50265)

JUN 2005
RECEIVED

INTRODUCTION

This memo presents the results of data validation on Data Package No. 50265 prepared by WSCF Analytical Laboratories. (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample	Media	Validation	Analysis
B19PM5	2/3/05	Soil	C	ICP/MS metals by 200.8
B19PM6	2/3/05	Soil	C	ICP/MS metals by 200.8
B19PM7	2/3/05	Soil	C	ICP/MS metals by 200.8
B19PM8	2/3/05	Soil	C	ICP/MS metals by 200.8
B19PM9	2/3/05	Soil	C	ICP/MS metals by 200.8

Data validation was conducted in accordance with the FHI validation statement of work and the 200-MW-1 Miscellaneous Waste Group OU RI/FS Workplan, DOE/RL-2001-65 (Rev. 0), April 2002 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. Qualified Data Summary and 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 PARAMETERS

- **Holding Times**

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "U". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Matrix Spike Duplicate

Matrix spike (MS), matrix spike duplicate (MSD) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 75% to 125%. Samples with a spike recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a spike recovery of 30% to 74% and a sample result less than the IDL are qualified "UJ". Samples with a spike recovery of greater than 125% or less than 74% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a spike recovery greater than 125% and a sample result less than the IDL, no qualification is required.

All MS/MSD results were acceptable.

Laboratory Control Sample

The LCS is used to monitor the overall performance of all steps in the analysis. Recoveries must fall within the range of 80% to 120% for LCS analysis. Samples with a recovery of less than 50% are rejected and flagged "UR". Samples with a recovery of 50% to 79% and a sample recovery below the IDL are qualified "UJ". Samples with a recovery of greater than 120% or less than 80% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 120% and a sample result less than the IDL, no qualification is required.

All LCS results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike and matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than +/- 35%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (B19PM5/B19PM6) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Limits**

Reported analytical detection levels are compared against the required target quanitiation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. All results met the analyte specific RTQL.

- **Completeness**

Data package No. 50265 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2001-65, Rev. 0, *200-MW-1 Miscellaneous Waste Group OUs RI/FS Work Plan*, April 2002.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with FHI validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

INORGANIC DATA QUALIFICATION SUMMARY*

SDG: 50265	REVIEWER: TLI	DATE: 5/23/05	PAGE_1_OF_1_
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Project: FLUOR-HANFORD											
Laboratory: WSCF											
Case	SDG: WSCF20050265										
Sample Number		B19PM5		B19PM6		B19PM7		B19PM8		B19PM9	
Remarks				Duplicate							
Sample Date		2/3/05		2/3/05		2/3/05		2/3/05		2/3/05	
Inorganics	RTQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Silver	0.5	0.113		0.203		0.0927		<0.0101	U	0.0714	
Cadmium	0.5	0.892		0.678		0.932		0.740		0.0550	
Chromium	1	17.4		18.5		20.7		12.4		19.0	
Copper	2.5	18.0		16.0		26.3		14.7		10.3	
Lead	10	19.0		16.2		19.6		3.21		3.48	
Mercury	0.2	0.412		0.525		0.323		0.192		0.171	
Uranium	1	1.60		1.45		1.55		0.625		0.592	

000010

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize miss-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
Inorganic															
W050000296	B19PM5	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		95.8	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411		7.85	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	B	5.17	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		42.2	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	10.0	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		135	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.113	mg/kg	9.94	9.9e-03	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.892	mg/kg	9.94	0.020	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		17.4	mg/kg	9.94	3.3	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		18.0	mg/kg	9.94	0.64	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		19.0	mg/kg	9.94	0.26	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.412	mg/kg	9.94	9.9e-03	02/09/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		1.60	mg/kg	9.94	0.16	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		95.7	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411		7.98	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	B	6.46	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		43.1	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	12.5	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		143	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.203	mg/kg	10.10	0.010	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.678	mg/kg	10.10	0.020	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		18.5	mg/kg	10.10	3.4	02/09/05	02/03/05	02/03/05

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: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000297	B19PM6	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		16.0	mg/kg	10.10	0.65	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		16.2	mg/kg	10.10	0.26	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.525	mg/kg	10.10	0.010	02/09/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		1.45	mg/kg	10.10	0.16	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		95.7	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411		7.91	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	B	4.59	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		35.4	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	10.8	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		118	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.0927	mg/kg	9.89	9.9e-03	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.932	mg/kg	9.89	0.020	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		20.7	mg/kg	9.89	3.3	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		26.3	mg/kg	9.89	0.63	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		19.6	mg/kg	9.89	0.26	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.323	mg/kg	9.89	9.9e-03	02/09/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		1.55	mg/kg	9.89	0.16	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		94.5	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411		8.95	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 1.15	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410		14.4	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	B	9.33	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		45.2	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05

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: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ	Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412	U	< 0.0101	mg/kg	10.09	0.010	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.740	mg/kg	10.09	0.020	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		12.4	mg/kg	10.09	3.4	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		14.7	mg/kg	10.09	0.65	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		3.21	mg/kg	10.09	0.26	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.192	mg/kg	10.09	0.010	02/09/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		0.625	mg/kg	10.09	0.16	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	57-12-5	Cyanide	SOIL	LA-695-402	U	< 0.200	mg/kg	1.00	0.20	02/22/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	TS	Total solids	SOIL	LA-519-412		94.6	%	1.00	0.0	02/08/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	PH	pH Measurement	SOIL	LA-212-411		9.22	pH	1.00	0.010	02/08/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	16984-48-8	Fluoride	SOIL	LA-533-410	U	< 1.15	mg/kg	50.00	1.2	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	NO2-N	Nitrogen in Nitrite	SOIL	LA-533-410	U	< 0.950	mg/kg	50.00	0.95	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	NO3-N	Nitrogen in Nitrate	SOIL	LA-533-410	B	4.44	mg/kg	50.00	0.65	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	PO4-P	Phosphate (P) by IC	SOIL	LA-533-410	U	< 2.70	mg/kg	50.00	2.7	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	14808-79-8	Sulfate	SOIL	LA-533-410		110	mg/kg	50.00	5.0	02/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-22-4	Silver	SOIL	LA-505-412		0.0714	mg/kg	9.92	9.9e-03	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-43-9	Cadmium	SOIL	LA-505-412		0.0550	mg/kg	9.92	0.020	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-47-3	Chromium	SOIL	LA-505-412		19.0	mg/kg	9.92	3.3	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-50-8	Copper	SOIL	LA-505-412		10.3	mg/kg	9.92	0.64	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7439-92-1	Lead	SOIL	LA-505-412		3.48	mg/kg	9.92	0.26	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7439-97-6	Mercury	SOIL	LA-505-412		0.171	mg/kg	9.92	9.9e-03	02/09/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	7440-61-1	Uranium	SOIL	LA-505-412		0.592	mg/kg	9.92	0.16	02/09/05	02/03/05	02/03/05

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20050265, Rev. 2**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F04-015**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-MW-1 Characterization Sampling and Analysis – Soil/216-T-33, 16.5' – 30', samples (B19PM5, B19PM6, B19PM7, B19PM8, B19PM9) were received at the WSCF Laboratory on January 3, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 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 forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Anions by EPA Method 300. 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-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. 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

- PCB by EPA Method 8082. Analytical work was performed with no deviations to the approved method.
- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel/Gas 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 (Plutonium, Americium and Uranium), GEA, Sr-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Anions - The hold times for Nitrite and Nitrate analyses were not met. A Blank, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19PN2 (SDG# 20050300, SAF# F04-01).

- Fluoride – Sample B19PM5, B19PM6 and B19PM7 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Phosphate - Sample B19PM5, B19PM6, B19PM7 and B19PM8 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrate - Sample B19PM9 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.

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 GPP Letter of Instruction. See page 17 for QC details. Analytical Note:

- The Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. All sample results were less than the detection limit and U-flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Notes:

- Preparation Date: 08-feb-2005.

- Silver, Cadmium, Copper, Mercury, Lead and Uranium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

Percent Solids – Analyzed for organic results correction.

pH – The hold time for this analysis was met. All internal laboratory controls were within established limits.

Organic Comments

- Sample results were moisture corrected and reported on a dry-weight basis.

PCB – 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 GPP Letter of Instruction. See pages 32 through 33 for QC details. Analytical Note:

- Preparation Date: 04-feb-2005.

All QC controls are within the established limits.

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 GPP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B19PM5, B19PM6 and B19PM7 have a chromatographic lump of unknown organic material which eluted from about eleven minutes to twenty-nine minutes in the chromatograms.

All 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 Spike Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 39 through 40 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B1B3R1, B19MP5, B19MP6 and B19MP7 contained Extended Motor Oil which was added to the analyte list and reported in the Analytical Results Report.

All QC controls are within the established limits.

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

- Preparation Date: 16-feb-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

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 GPP Letter of Instruction. See pages 42 through 45 for QC details. All 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 GPP Letter of Instruction. See pages 51 through 55 for QC details. Analytical Note:

- Americium-241, Plutonium-239/240, Strontium-89/90 and Uranium-238 Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).
- GEA – QC detail is included on page 51.
- Uranium-234, Urananium-235 and Plutonium-238 - 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	3.522E-02	
BLANK		U-235	-2.403E-03	
B1B3R1	W050000288	U-234	9.442E-01	

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
DUPLICATE	W050000288	U-234	8.554E-01	9.9
B1B3R1	W050000288	U-235	8.358E-02	
DUPLICATE	W050000288	U-235	4.009E-02	70.3
Plutonium-238				
BLANK		Pu-238	-1.441E-02	
B19412	W050000288	Pu-238	3.388E-01	
DUPLICATE	W050000288	Pu-238	4.829E-01	35.1

- Plutonium-242, Americium-243 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontium-85			
BLANK		Sr-85	95.3
LCS		Sr-85	97.7
B1B3R1	W050000288	Sr-85	90.5
DUPLICATE	W050000288	Sr-85	100.3
B19PM5	W050000296	Sr-85	88.3
B19PM6	W050000297	Sr-85	88.0
B19PM7	W050000298	Sr-85	89.2
B19PM8	W050000299	Sr-85	59.3
B19PM9	W050000300	Sr-85	108.1

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Plutonium-242			
BLANK		Pu-242	89.9
LCS		Pu-242	84.8
B1B3R1	W050000288	Pu-242	86.7
DUPLICATE	W050000288	Pu-242	83.6
B19PM5	W050000296	Pu-242	67.5
B19PM6	W050000297	Pu-242	89.9
B19PM7	W050000298	Pu-242	65.2
B19PM8	W050000299	Pu-242	82.0
B19PM9	W050000300	Pu-242	83.7
Americium-243			
BLANK		Am-243	74.4
LCS		Am-243	79.6
B1B3R1	W050000288	Am-243	82.8
DUPLICATE	W050000288	Am-243	85.5
B19PM5	W050000296	Am-243	98.6
B19PM6	W050000297	Am-243	85.2
B19PM7	W050000298	Am-243	97.4
B19PM8	W050000299	Am-243	83.8
B19PM9	W050000300	Am-243	99.9
Uranium-232			
BLANK		U-232	68.3

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
LCS		U-232	74.9
B1B3R1	W050000288	U-232	78.3
DUPLICATE	W050000288	U-232	77.5
B19PM5	W050000296	U-232	59.8
B19PM6	W050000297	U-232	79.8
B19PM7	W050000298	U-232	82.9
B19PM8	W050000299	U-232	74.0
B19PM9	W050000300	U-232	77.3

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

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-083	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-T-33; 27.5ft-30ft	200-MW-1 Characterization Sampling and Analysis - Soil	F04-015

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
	HNF-N-386 1	119144ES10	Governement Vehcle

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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PP0

SAMPLE ANALYSIS											
PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None					
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly					
NO. OF CONTAINER(S)	1	1	1	3	1	1					
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL					
	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA					

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B19PM9 W05C0003 502	SOIL	2/3/05	1310	X	X	X	X	X	X				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister / [illegible] 2-3-05	1315S	Victor B [illegible] 2/3/05	1315S
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. Turnaround

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

000022

3/4/05

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-080	PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Wiberg/Tyra	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	AIR QUALITY: ☐	DATA TURNAROUND: 45 Days / 45 Days	
SAMPLING LOCATION: 216-T-33; 16.5ft-19.0ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-386 1	COA: 119144ES10	METHOD OF SHIPMENT: Governement Vehcle
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN7

20050265

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM5 W050000296	SOIL	2-3-05	0750	X	X	X	X	X	X
B19PM6 297	SOIL	2-3-05	0750	X	X	X	X	X	X

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister / [signature]	2-3-05 13:55	Victor Bus [signature]	2/3/05 13:55

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000023

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-081	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
216-T-33; 19ft-21.5ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-386 1	119144ES10	Governement Vehcle		
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN8

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly			
NO. OF CONTAINER(S)	1	1	1	3	1	1			
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL			
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME									
B19PM7 W050002298	SOIL	2-3-05	0850	X	X	X	X	X	X			

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	2-3-05 1315S	V. Van Bruns	2/3/05 1315S

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA – 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000024

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-082	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
216-T-33; 22.5ft-25.0ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-386 1	119144ES10	Governement 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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN9

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly				
NO. OF CONTAINER(S)	1	1	1	3	1	1				
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL				
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA				

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B19PM8 W050220249	SOIL	2-3-05	1100	X	X	X	X	X	X				

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

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSA Rl/Psfr 2-3-05	1355	Victor Brass Vic Yo	2/3/05 1355

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.

(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;

(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}

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

(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E

PROJECT: 200-MW-1		DATA PACKAGE: S0265	
VALIDATOR: TLI	LAB: WSCF	DATE: 5/11/05	
		SDG: S0265	

ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		

SAMPLES/MATRIX				
B19PM5	B19PM6	B19PM7	B19PM8	B19PM9
				Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

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

Comments:

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:

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: no FB

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:

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~~ spike

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

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

Comments: _____

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:

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:

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

Lab ID: W050000296
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	393.7872	98.447	% Recov	02/09/05	70.000	130.000	
MS	Cadmium	7440-43-9	399.2076	99.802	% Recov	02/09/05	70.000	130.000	
MS	Chromium	7440-47-3	397.18	99.295	% Recov	02/09/05	70.000	130.000	
MS	Copper	7440-50-8	396.05	99.013	% Recov	02/09/05	70.000	130.000	
MS	Mercury	7439-97-6	19.1382	95.691	% Recov	02/09/05	70.000	130.000	
MS	Lead	7439-92-1	384.16	96.040	% Recov	02/09/05	70.000	130.000	
MS	Uranium	7440-61-1	398.896	99.724	% Recov	02/09/05	70.000	130.000	
MSD	Silver	7440-22-4	385.9872	96.497	% Recov	02/09/05	70.000	130.000	
MSD	Cadmium	7440-43-9	400.7076	100.177	% Recov	02/09/05	70.000	130.000	
MSD	Chromium	7440-47-3	397.98	99.495	% Recov	02/09/05	70.000	130.000	
MSD	Copper	7440-50-8	403.25	100.812	% Recov	02/09/05	70.000	130.000	
MSD	Mercury	7439-97-6	19.2982	96.491	% Recov	02/09/05	70.000	130.000	
MSD	Lead	7439-92-1	382.56	95.640	% Recov	02/09/05	70.000	130.000	
MSD	Uranium	7440-61-1	393.896	98.474	% Recov	02/09/05	70.000	130.000	
SPK-RPD	Silver	7440-22-4	96.497	2.001	RPD	02/09/05	0.000	20.000	
SPK-RPD	Cadmium	7440-43-9	100.177	0.375	RPD	02/09/05	0.000	20.000	
SPK-RPD	Chromium	7440-47-3	99.495	0.201	RPD	02/09/05	0.000	20.000	
SPK-RPD	Copper	7440-50-8	100.812	1.801	RPD	02/09/05	0.000	20.000	
SPK-RPD	Mercury	7439-97-6	96.491	0.833	RPD	02/09/05	0.000	20.000	
SPK-RPD	Lead	7439-92-1	95.64	0.417	RPD	02/09/05	0.000	20.000	
SPK-RPD	Uranium	7440-61-1	98.474	1.261	RPD	02/09/05	0.000	20.000	

BATCH QC

BLANK	Silver	7440-22-4	2.554e-2	0.026	ug/L	02/09/05			
BLANK	Cadmium	7440-43-9	2.288e-2	0.023	ug/L	02/09/05			
BLANK	Chromium	7440-47-3	<0.336	n/a	ug/L	02/09/05			U

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: ICP-2008 MS All possible metal

SAF Number: F04-015
Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
BLANK	Copper	7440-50-8	0.4816	0.482	ug/L	02/09/05			
BLANK	Mercury	7439-97-6	7.058e-2	0.071	ug/L	02/09/05			
BLANK	Lead	7439-92-1	4.637e-2	0.046	ug/L	02/09/05			
BLANK	Uranium	7440-61-1	3.219e-2	0.032	ug/L	02/09/05			
LCS	Silver	7440-22-4	153	117.692	% Recov	02/09/05	110.000	170.000	
LCS	Cadmium	7440-43-9	140	109.375	% Recov	02/09/05	88.000	127.000	
LCS	Chromium	7440-47-3	74.31	106.921	% Recov	02/09/05	50.000	126.000	
LCS	Copper	7440-50-8	153.3	103.581	% Recov	02/09/05	61.000	134.000	
LCS	Mercury	7439-97-6	16.15	95.562	% Recov	02/09/05	75.000	114.000	
LCS	Lead	7439-92-1	150.9	106.268	% Recov	02/09/05	87.000	120.000	
LCS	Uranium	7440-61-1	398.3	99.575	% Recov	02/09/05	89.000	107.000	

000034

JUN 2005
RECEIVED

Date: 23 May 2005
To: Fluor Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 200-MW-1 Characterization Sampling and Analysis - Soil
Subject: Radiochemistry - Data Package No. WSCF20050265 (50265)

INTRODUCTION

This memo presents the results of data validation on Data Package No. 50265 prepared by WSCF Analytical Laboratories. (WSCF). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample	Media	Validation	Analysis
B19PM5	2/3/05	Soil	C	See note 1
B19PM6	2/3/05	Soil	C	See note 1
B19PM7	2/3/05	Soil	C	See note 1
B19PM8	2/3/05	Soil	C	See note 1
B19PM9	2/3/05	Soil	C	See note 1

1 - Strontium-90, gamma spectroscopy and alpha spectroscopy.

Data validation was conducted in accordance with the FHI validation statement of work and the 200-MW-1 Miscellaneous Waste Group OU RI/FS Workplan, DOE/RL-2001-65 (Rev. 0), April 2002. 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. Qualified Data Summary and 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**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Laboratory (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the required detection limit (RDL), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the minimum detectable activity (MDA) are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

Due to method blank contamination, the uranium-233/234 result in sample B19PM9 was qualified as an estimate and flagged "J".

All other laboratory blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated by analyzing distilled water or field samples spiked with known amounts of radionuclides. The sample activity as determined by analysis is compared to the known activity to assess accuracy. The acceptable laboratory control sample (LCS) and matrix spike (MS) recovery range is either 65-135% or 70-130%, depending on the analyte. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, rejected, or not qualified, depending on the activity of the individual sample.

Due to the lack of an LCS analysis, all plutonium-238, uranium-233/234 and uranium-235 results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Precision**

Analytical precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Precision may also be assessed using unspiked duplicate sample analyses. If both sample and replicate activities are greater than five times the contract required detection limit (CRDL) and the RPD is less than +/- 35 percent, the results are acceptable. If either activities are less then five times the CRDL, a control limit of less than or equal to two times the CRDL is used for soil samples and less than or equal to the CRDL for water samples. If either the original or replicate value is below the CRDL, the applicable control limits are less than or equal to the CRDL for water samples and less than or equal to two times the CRDL for soil samples. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (47%), all cobalt-60 results were qualified as estimates and flagged "J".

All other duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (B19PM5/B19PM6) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Detection Levels**

Reported analytical detection levels are compared against the required target quanitation limits (RTQLs) to ensure that laboratory detection levels meet the required criteria. All reported laboratory detection levels met the analyte specific RTQL.

- **Completeness**

Data package SDG No. 50265 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Due to method blank contamination, the uranium-233/234 result in sample B19PM9 was qualified as an estimate and flagged "J". Due to the lack of an LCS analysis, all plutonium-238, uranium-233/234 and uranium-235 results were qualified as estimates and flagged "J". Due to an RPD outside QC limits (47%), all cobalt-60 results were qualified as estimates and flagged "J". Data flagged "J" is an estimate, but under the FHI validation SOW, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

FHI, Contract #20266, *Validation Statement of Work*, Fluor Hanford Incorporated, July 7, 2003.

DOE/RL-2001-65, Rev. 0, *200-MW-1 Miscellaneous Waste Group OUs RI/FS Work Plan*, April 2002.

Appendix 1

Glossary of Data Reporting Qualifiers

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

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: 50265	REVIEWER: TLI	DATE: 5/23/05	PAGE 1 OF 1
COMMENTS:			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Uranium-233/234	J	B19PM9	Blank contamination
Plutonium-238 Uranium-233/234 Uranium-235	J	All	No LCS
Cobalt-60	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

Project: FLUOR-HANFORD											
Laboratory: WSCF											
Case	**SDG: WSCF20050265**										
Sample Number		B19PM5		B19PM6		B19PM7		B19PM8		B19PM9	
Remarks				Duplicate							
Sample Date		2/3/05		2/3/05		2/3/05		2/3/05		2/3/05	
Radiochemistry	**RTQL**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
Americium-241	**1**	0.620		0.580		0.390		0.00350	U	0.00880	U
Cobalt-60	**0.05**	0.0634	J	0.0602	J	0.0265	J	0.0630	J	0.0146	UJ
Cesium-137	**0.1**	6.84		4.96		3.36		0.00254	U	-0.00482	U
Europium 152	**0.1**	4.68		4.25		3.32		0.0128	U	-0.0184	U
Europium 154	**0.1**	0.508		0.471		0.310		-0.0119	U	-0.0620	U
Europium 155	**0.1**	0.0394	U	0.0192	U	0.0643	U	0.0331	U	0.00120	U
Plutonium-238	**1**	0.0800	J	0.0900	J	0.0430	UJ	0.00190	UJ	0.0240	UJ
Plutonium-239/240	**1**	9.60		8.00		5.40		0.0320		0.00480	U
Strontium-89/90	**1**	18.0		17.0		9.70		1.60		-0.0500	U
Uranium-233/234	**1**	0.780	J	0.400	J	0.390	J	0.230	J	0.140	J
Uranium-235	**1**	0.0510	J	0.0240	J	0.0410	J	0.0160	J	0.0130	J
Uranium-238	**1**	0.790		0.460		0.390		0.210		0.200	

000010

REVISED 8-2-05

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize potential miss-interpretation of results. All other qualifiers shown were applied during validation.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
Radiochemistry																
W050000296	B19PM5	GRP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471			0.620	pCi/g	1.00	0.045	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.17	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481	J		0.0634	pCi/g	1.00	0.027	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.034	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481			6.84	pCi/g	1.00	0.040	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	1.1	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481			4.68	pCi/g	1.00	0.12	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.64	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481			0.508	pCi/g	1.00	0.083	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.13	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U		0.0394	pCi/g	1.00	0.19	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.11	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471	J		0.0800	pCi/g	1.00	0.070	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.051	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471			9.60	pCi/g	1.00	0.025	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+-	2.5	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	SR-RAD	Strontium-89/90	SOIL	LA-508-415			18.0	pCi/g	1.00	0.30	02/23/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+-	2.7	pCi/g	1.00	0.0	02/23/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471	J		0.780	pCi/g	1.00	0.019	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+-	0.22	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471	J		0.0510	pCi/g	1.00	0.021	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.029	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	U-238	Uranium-238	SOIL	LA-508-471			0.790	pCi/g	1.00	7.1e-03	02/28/05	02/03/05	02/03/05
W050000296	B19PM5	GRP	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.22	pCi/g	1.00	0.10	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471			0.580	pCi/g	1.00	0.050	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.16	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05

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

R 5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000297	B19PM6	GRP	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481	J		0.0602	pCi/g	1.00	0.027	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.036	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481			4.96	pCi/g	1.00	0.040	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.81	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481			4.25	pCi/g	1.00	0.12	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.57	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481			0.471	pCi/g	1.00	0.091	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.12	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U		0.0192	pCi/g	1.00	0.16	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.098	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471	J		0.0900	pCi/g	1.00	0.049	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.043	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471			8.00	pCi/g	1.00	0.013	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+-	2.1	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	SR-RAD	Strontium-89/90	SOIL	LA-508-415			17.0	pCi/g	1.00	0.30	02/23/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+-	2.6	pCi/g	1.00	0.0	02/23/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471	J		0.400	pCi/g	1.00	4.4e-03	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+-	0.10	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471	J		0.0240	pCi/g	1.00	5.4e-03	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.015	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	U-238	Uranium-238	SOIL	LA-508-471			0.460	pCi/g	1.00	4.3e-03	02/28/05	02/03/05	02/03/05
W050000297	B19PM6	GRP	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.11	pCi/g	1.00	0.10	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471			0.390	pCi/g	1.00	0.051	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.12	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481	J		0.0265	pCi/g	1.00	0.022	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.025	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481			3.36	pCi/g	1.00	0.035	05/17/05	02/03/05	02/03/05

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: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000298	B19PM7	GRP	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.58	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481			3.32	pCi/g	1.00	0.12	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.45	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481			0.310	pCi/g	1.00	0.12	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.091	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U		0.0643	pCi/g	1.00	0.21	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.12	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471	U J		0.0430	pCi/g	1.00	0.063	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.041	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471			5.40	pCi/g	1.00	6.4e-03	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+-	1.4	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	SR-RAD	Strontium-89/90	SOIL	LA-508-415			9.70	pCi/g	1.00	0.30	02/23/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+-	1.5	pCi/g	1.00	0.0	02/23/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471	J		0.390	pCi/g	1.00	0.014	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+-	0.10	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471	J		0.0410	pCi/g	1.00	6.2e-03	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.021	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	U-238	Uranium-238	SOIL	LA-508-471			0.390	pCi/g	1.00	5.0e-03	02/28/05	02/03/05	02/03/05
W050000298	B19PM7	GRP	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.10	pCi/g	1.00	0.10	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471	U		3.50e-03	pCi/g	1.00	0.056	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.032	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481	J		0.0630	pCi/g	1.00	0.010	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.013	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481	U		2.54e-03	pCi/g	1.00	0.011	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	6.1e-03	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481	U		0.0128	pCi/g	1.00	0.031	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.020	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05

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

R 5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000299	B19PM8	GRP	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481	U		-0.0119	pCi/g	1.00	0.031	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.018	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U		0.0331	pCi/g	1.00	0.044	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.029	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471	U J		1.90e-03	pCi/g	1.00	0.045	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.019	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471			0.0320	pCi/g	1.00	0.017	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+-	0.019	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	SR-RAD	Strontium-89/90	SOIL	LA-508-415			1.60	pCi/g	1.00	0.40	02/23/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+-	0.56	pCi/g	1.00	0.0	02/23/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471	J		0.230	pCi/g	1.00	0.013	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+-	0.064	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471	J		0.0160	pCi/g	1.00	6.0e-03	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.013	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	U-238	Uranium-238	SOIL	LA-508-471			0.210	pCi/g	1.00	4.8e-03	02/28/05	02/03/05	02/03/05
W050000299	B19PM8	GRP	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.059	pCi/g	1.00	0.10	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	14596-10-2	Americium-241	SOIL	LA-508-471	U		8.80e-03	pCi/g	1.00	0.035	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Am-241 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.020	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	10198-40-0	Cobalt-60	SOIL	LA-508-481	U J		0.0146	pCi/g	1.00	0.038	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Co-60 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.020	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	10045-97-3	Cesium-137	SOIL	LA-508-481	U		-4.82e-03	pCi/g	1.00	0.035	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Cs-137 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.020	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	14683-23-9	Europium-152	SOIL	LA-508-481	U		-0.0184	pCi/g	1.00	0.092	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Eu-152 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.073	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	15585-10-1	Europium-154	SOIL	LA-508-481	U		-0.0620	pCi/g	1.00	0.11	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Eu-154 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.068	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	14391-16-3	Europium-155	SOIL	LA-508-481	U		1.20e-03	pCi/g	1.00	0.11	05/17/05	02/03/05	02/03/05

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

R 5/20/05

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent
Project: F04-015: F04-015

Group #: WSCF20050265

Sample #	Client ID			CAS #	Test Performed	Matrix	WSCF Method	RQ		Result	Unit	DF	MDL	Analyze	Sample	Receive
W050000300	B19PM9	GRP	TRENT	E,T,C	Eu-155 Rel. Count Error (GEA)	SOIL	LA-508-481		+-	0.012	pCi/g	1.00	0.0	05/17/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	13981-16-3	Plutonium-238	SOIL	LA-508-471	U J		0.0240	pCi/g	1.00	0.043	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Pu-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.026	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	PU-239/240	Pu-239/240 by AEA	SOIL	LA-508-471	U		4.80e-03	pCi/g	1.00	0.017	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Pu-239/240 AEA Total Cntg Err	SOIL	LA-508-471		+-	9.6e-03	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	SR-RAD	Strontium-89/90	SOIL	LA-508-415	U		-0.0500	pCi/g	1.00	0.20	02/23/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	Sr-89/90 Rel. Count Error	SOIL	LA-508-415		+-	0.26	pCi/g	1.00	0.0	02/23/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	U-233/234	Uranium-233/234	SOIL	LA-508-471	J		0.140	pCi/g	1.00	0.011	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	U-233/234 AEA Total Cntg Error	SOIL	LA-508-471		+-	0.042	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	15117-96-1	Uranium-235	SOIL	LA-508-471	J		0.0130	pCi/g	1.00	5.0e-03	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	U-235 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.010	pCi/g	1.00	0.0	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	U-238	Uranium-238	SOIL	LA-508-471			0.200	pCi/g	1.00	4.0e-03	02/28/05	02/03/05	02/03/05
W050000300	B19PM9	GRP	TRENT	E,T,C	U-238 by AEA Total Cntg Error	SOIL	LA-508-471		+-	0.056	pCi/g	1.00	0.10	02/28/05	02/03/05	02/03/05

000015

5/20/05

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

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

Sample Delivery Group	**WSCF20050265, Rev. 2**
Sample Matrix	**Soil**
Sample Visual	**N/A**
SAF Number	**F04-015**
Data Deliverable	**Summary Report**

Introduction

Five (5) 200-MW-1 Characterization Sampling and Analysis – Soil/216-T-33, 16.5' – 30', samples (B19PM5, B19PM6, B19PM7, B19PM8, B19PM9) were received at the WSCF Laboratory on January 3, 2005. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 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 forms are included as Attachment 3.

Analytical Methodology for Requested Analyses

Inorganic

- Anions by EPA Method 300. 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-MS Metals by EPA Method 200.8. Analytical work was performed with no deviations to the approved method.
- Percent Solids by EPA Method 160.3. 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

- PCB by EPA Method 8082. Analytical work was performed with no deviations to the approved method.
- Semi-VOA by EPA Method 8270C. Analytical work was performed with no deviations to the approved method.

- TPH Diesel/Gas 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 (Plutonium, Americium and Uranium), GEA, Sr-89/90) were run by internal WDOE accredited WSCF procedures. Analytical work was performed with no deviations to the approved method.

Inorganic Comments

Anions - The hold times for Nitrite and Nitrate analyses were not met. A Blank, Laboratory Control Sample, Duplicate, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 15 through 16 for QC details. Analytical Notes:

- Preparation Date: 17-feb-2005.

- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B19PN2 (SDG# 20050300, SAF# F04-01).

- Fluoride – Sample B19PM5, B19PM6 and B19PM7 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Phosphate - Sample B19PM5, B19PM6, B19PM7 and B19PM8 results were B-flagged; the analyte was less than the reportable detection limit, but greater than or equal to the method detection limit.

- Nitrate - Sample B19PM9 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.

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 GPP Letter of Instruction. See page 17 for QC details. Analytical Note:

- The Matrix Spike and Matrix Spike Duplicate recoveries were below established laboratory limits. All sample results were less than the detection limit and U-flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See pages 18 through 19 for QC details. Analytical Notes:

- Preparation Date: 08-feb-2005.

- Silver, Cadmium, Copper, Mercury, Lead and Uranium - The analytes detected in the associated preparation Blank sample were evaluated and there was no significant affect on the sample results.

All other QC controls are within the established limits.

Percent Solids – Analyzed for organic results correction.

pH – The hold time for this analysis was met. All internal laboratory controls were within established limits.

Organic Comments

- Sample results were moisture corrected and reported on a dry-weight basis.

PCB – 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 GPP Letter of Instruction. See pages 32 through 33 for QC details. Analytical Note:

- Preparation Date: 04-feb-2005.

All QC controls are within the established limits.

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 GPP Letter of Instruction. See pages 34 through 38 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B19PM5, B19PM6 and B19PM7 have a chromatographic lump of unknown organic material which eluted from about eleven minutes to twenty-nine minutes in the chromatograms.

All 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 Spike Duplicate were analyzed with each delivery group per GPP Letter of Instruction. See pages 39 through 40 for QC details. Analytical Notes:

- Preparation Date: 04-feb-2005.

- Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

- Samples B1B3R1, B19MP5, B19MP6 and B19MP7 contained Extended Motor Oil which was added to the analyte list and reported in the Analytical Results Report.

All QC controls are within the established limits.

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

- Preparation Date: 16-feb-2005.
- Duplicate, Matrix Spike and Matrix Spike Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).

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 GPP Letter of Instruction. See pages 42 through 45 for QC details. All 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 GPP Letter of Instruction. See pages 51 through 55 for QC details. Analytical Note:

- Americium-241, Plutonium-239/240, Strontium-89/90 and Uranium-238 Duplicate QC samples were analyzed on sample# B1B3R1 (SDG# 20050251, SAF# F04-019).
- GEA – QC detail is included on page 51.
- Uranium-234, Urananium-235 and Plutonium-238 - 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	3.522E-02	
BLANK		U-235	-2.403E-03	
B1B3R1	W050000288	U-234	9.442E-01	

Additional Batch QC Data (Results)				
Sample Number	Lab Sample ID	Isotope	QC	
			Results (pCi/gram)	RPD %
DUPLICATE	W050000288	U-234	8.554E-01	9.9
B1B3R1	W050000288	U-235	8.358E-02	
DUPLICATE	W050000288	U-235	4.009E-02	70.3
Plutonium-238				
BLANK		Pu-238	-1.441E-02	
B19412	W050000288	Pu-238	3.388E-01	
DUPLICATE	W050000288	Pu-238	4.829E-01	35.1

- Plutonium-242, Americium-243 and Uranium-232 – Radiochemical Tracer Recovery Data are summarized below:

Radiochemical Tracer Percent Recovery			
Sample Number	Lab Sample ID	Isotope	Tracer Recovery (Percent)
Strontium-85			
BLANK		Sr-85	95.3
LCS		Sr-85	97.7
B1B3R1	W050000288	Sr-85	90.5
DUPLICATE	W050000288	Sr-85	100.3
B19PM5	W050000296	Sr-85	88.3
B19PM6	W050000297	Sr-85	88.0
B19PM7	W050000298	Sr-85	89.2
B19PM8	W050000299	Sr-85	59.3
B19PM9	W050000300	Sr-85	108.1

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
Plutonium-242			
BLANK		Pu-242	89.9
LCS		Pu-242	84.8
B1B3R1	W050000288	Pu-242	86.7
DUPLICATE	W050000288	Pu-242	83.6
B19PM5	W050000296	Pu-242	67.5
B19PM6	W050000297	Pu-242	89.9
B19PM7	W050000298	Pu-242	65.2
B19PM8	W050000299	Pu-242	82.0
B19PM9	W050000300	Pu-242	83.7
Americium-243			
BLANK		Am-243	74.4
LCS		Am-243	79.6
B1B3R1	W050000288	Am-243	82.8
DUPLICATE	W050000288	Am-243	85.5
B19PM5	W050000296	Am-243	98.6
B19PM6	W050000297	Am-243	85.2
B19PM7	W050000298	Am-243	97.4
B19PM8	W050000299	Am-243	83.8
B19PM9	W050000300	Am-243	99.9
Uranium-232			
BLANK		U-232	68.3

Radiochemical Tracer Percent Recovery			
Sample Number	**Lab Sample ID**	**Isotope**	**Tracer Recovery (Percent)**
LCS		U-232	74.9
B1B3R1	W050000288	U-232	78.3
DUPLICATE	W050000288	U-232	77.5
B19PM5	W050000296	U-232	59.8
B19PM6	W050000297	U-232	79.8
B19PM7	W050000298	U-232	82.9
B19PM8	W050000299	U-232	74.0
B19PM9	W050000300	U-232	77.3

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

3/4/05

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-080	PAGE 1 OF 1

COLLECTOR: Pope/Pfister/Wiberg/Tyra	COMPANY CONTACT: CS Cearlock	TELEPHONE NO.: 372-9638	PROJECT COORDINATOR: TRENT, SJ
PRICE CODE: 8N	AIR QUALITY: ☐	DATA TURNAROUND: 45 Days / 45 Days	
SAMPLING LOCATION: 216-T-33; 16.5ft-19.0ft	PROJECT DESIGNATION: 200-MW-1 Characterization Sampling and Analysis - Soil	SAF NO.: F04-015	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-386 1	COA: 119144ES10	METHOD OF SHIPMENT: Governement 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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN7

20050265

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM5 W050000296	SOIL	2-3-05	0750	X	X	X	X	X	X
B19PM6 297	SOIL	2-3-05	0750	X	X	X	X	X	X

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES: RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM: JS Pfister / [illegible]	2-3-05 13:55	Victor Bus [illegible]	2/3/05 13:55
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000024

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-081	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-T-33; 19ft-21.5ft	200-MW-1 Characterization Sampling and Analysis - Soil	F04-015

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
	HNF-N-386 1	119144ES10	Governement 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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN8

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM7 W050002298	SOIL	2-3-05	0850	X	X	X	X	X	X

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM: JSAlt/ Alt	2-3-05 1315S	RECEIVED BY/STORED IN: Victor Bins	2/3/05 1315S
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.
(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;
(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}
(3)VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Butanol, cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene}
(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000025

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-082	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
216-T-33; 22.5ft-25.0ft	200-MW-1 Characterization Sampling and Analysis - Soil		F04-015		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA**	**METHOD OF SHIPMENT**		
	HNF-N-386 1	119144ES10	Governement Vehcle		
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: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PN9

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM8 W050220249	SOIL	2-3-05	1100	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSA [illegible] 2-3-05	13:55	Victor Bruns [illegible]	2/3/05 13:55
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.

(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;

(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}

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

(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 – Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000026

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-083	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	BN	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	CS Cearlock	372-9638	TRENT, SJ	AIR QUALITY	☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-T-33; 27.5ft-30ft	200-MW-1 Characterization Sampling and Analysis - Soil	F04-015

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
	HNF-N-386 1	119144ES10	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=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: N/A

SPECIAL HANDLING AND/OR STORAGE: Radioactive Tie To: B19PP0

PRESERVATION	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None
TYPE OF CONTAINER	aG	aG	aG	aGs*	aG	Square Bottle - Poly
NO. OF CONTAINER(S)	1	1	1	3	1	1
VOLUME	250mL	120mL	250mL	40mL	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	PCBs - 8082;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS GEA

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19PM9 W05000502	SOIL	2/3/05	1310	X	X	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Pfister / [illegible]	2-3-05 13:55	Victor B [illegible]	2/3/05 13:55
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
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 laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.

(1)IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate} Total Cyanide - 9010; pH (Soil) - 9045;

(2)ICP/MS - 200.8 (TAL) {Cadmium, Chromium, Copper, Silver} ICP/MS - 200.8 (Add-on) {Lead, Uranium} 200.8_HG - ICPMS {Mercury}

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

(4)Semi-VOA -- 8270A (Add-On) {Tributyl phosphate} TPH-Gasoline Range - WTPH-G; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}

(5)Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155} Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 -- Total Sr; EXPEDITE GEA - 24 hr. TURNAROUND

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

000022

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 200-MW-1			DATA PACKAGE: 50265		
VALIDATOR: TLT		LAB: WSCF		DATE: 5/11/05	
			SDG: 50265		
ANALYSES ~~PERFORMED~~					
Gross Alpha/Beta	Strontium-90	Technetium-99	Alpha Spectroscopy	Gamma Spectroscopy	
Total Uranium	Radium-22	Tritium			
SAMPLES/MATRIX					
B19PM5	B19PM6	B19PM7	B19PM8	B19PM9	
					soil

1. Completeness ..... ☐ N/A

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

Comments: _____

2. Initial Calibration (Levels D, E) ..... ☒ N/A

Instruments/detectors calibrated? ..... Yes No N/A

Initial calibration acceptable? ..... Yes No N/A

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

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

Calculation check acceptable? ..... Yes No N/A

Comments: _____

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? ..... Yes No N/A

Calibration check acceptable? ..... Yes No N/A

Calibration check standards traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

_____

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_____

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: no FB

U233/34 – MB M9 – J

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: no U233/34, U235 or pu-238 LCS – J all

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: _____

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: _____

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: use tracer per FHI

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: CO-LO 47% J ele

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: NO FS or PS

12. Holding Times (All levels)

Are sample holding times acceptable? ..... Yes No N/A

Comments:

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: _____

_____

_____

_____

_____

Appendix 6

Additional Documentation Requested by Client

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Plutonium Isotopics by AEA

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000288									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Pu-239/240 by AEA	PU-239/240	6.0e+01	4.878	RPD	02/28/05	0.000	20.000	
BATCH QC									
BLANK	Pu-239/240 by AEA	PU-239/240	1.4e-02	0.014	pCi/g	02/28/05	-10.000	1000.000	
LCS	Pu-239/240 by AEA	PU-239/240	4.7e+01	95.528	% Recov	02/28/05	75.000	125.000	

000036

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Strontium 89/90

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000288									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Strontium-89/90	SR-RAD	5.2e+01	5.941	RPD	02/23/05	0.000	20.000	
BATCH QC									
BLANK	Strontium-89/90	10098-97-2	1.3e-01	0.130	pCi/g	02/23/05	-10.000	300.000	
LCS	Strontium-89/90	10098-97-2	71.5	100.563	% Recov	02/23/05	80.000	120.000	

000037

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Uranium Isotopics by AEA

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000288									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Uranium-238	U-238	8.1e-01	1.242	RPD	02/28/05	0.000	20.000	
BATCH QC									
BLANK	Uranium-238	24678-82-8	2.6e-02	0.026	pCi/g	02/28/05	-10.000	1000.000	
LCS	Uranium-238	24678-82-8	9.3e+01	122.659	% Recov	02/28/05	75.000	125.000	

000038

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Americium by AEA

SAF Number: F04-015
Sample Date: 02/02/05
Receive Date:02/02/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000288									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Americium-241	14596-10-2	2.4e+00	4.255	RPD	02/28/05	0.000	20.000	
BATCH QC									
BLANK	Americium-241	14596-10-2	1.8e-02	0.018	pCi/g	02/28/05	-10.000	1000.000	
LCS	Americium-241	14596-10-2	4.2e+01	87.318	% Recov	02/28/05	75.000	125.000	

000039

WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20050265
Matrix: SOLID
Test: Gamma Energy Analysis-grd H2O

SAF Number: F04-015
Sample Date: 02/03/05
Receive Date:02/03/05

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Analysis Date	Lower Limit	Upper Limit	RQ
Lab ID: W050000296									
BATCH QC ASSOCIATED WITH SAMPLE									
DUP	Cobalt-60	10198-40-0	1.03e-01	47.596	RPD	05/17/05	0.000	20.000	*
DUP	Cesium-137	10045-97-3	6.87e+00	0.438	RPD	05/17/05	0.000	20.000	
DUP	Europium-152	14683-23-9	4.87e+00	3.979	RPD	05/17/05	0.000	20.000	
DUP	Europium-154	15585-10-1	5.13e-01	0.979	RPD	05/17/05	0.000	20.000	
DUP	Europium-155	14391-16-3	U7.68e-02	n/a	RPD	05/17/05	0.000	20.000	
BATCH QC									
BLANK	Cobalt-60	10198-40-0	U-6.8e-4	n/a	pCi/g	05/17/05	-10.000	1000.000	
BLANK	Cesium-137	10045-97-3	U-3.4e-3	n/a	pCi/g	05/17/05	-10.000	1000.000	
BLANK	Europium-152	14683-23-9	U1.31e-3	n/a	pCi/g	05/17/05	-10.000	1000.000	
BLANK	Europium-154	15585-10-1	U5.08e-5	n/a	pCi/g	05/17/05	-10.000	1000.000	
BLANK	Europium-155	14391-16-3	U-6.7e-3	n/a	pCi/g	05/17/05	-10.000	1000.000	
LCS	Cobalt-60	10198-40-0	4.45e+03	106.205	% Recov	05/17/05	80.000	120.000	
LCS	Cesium-137	10045-97-3	3.99e+03	111.453	% Recov	05/17/05	80.000	120.000	