0061943

SEVERN TRENT STL

STL Richland
2800 George Washington Way
Richland, WA 99352

Tel: 509 375 3131 Fax: 509 375 5590
www.stl-inc.com

January 28, 2004

Windy Fetterly, A.P.P
2000 Stevens Drive, Room 192
Richland,.WA 99352

RECEIVED
JUN 21 2004
EDMC

Reference: Contract 615

Dear Ms. Fetterly:

Accompanying this letter are the Data Package(s) for the radiochemical analyses for the following Fluor Sample Delivery Groups:

SDG NUMBER	SAF NUMBER	LOT NUMBER
W04233	F03-020	J3L180214

If you have any questions regarding this data package or require any additional information please contact Bev Giroir at 375-3131.

Receipt of this letter and the packages are acknowledged by:

Windy Fetterly — Name
February 2, 2004 — Date
3:30 — Time

XC: File

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Analytical Data Package Prepared For

Fluor Hanford Inc.

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99352, (509)-375-3131.

Assigned Laboratory Code: STLRL

Data Package Contains 86 Pages

Report No.: 24741

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W04233	F03-020	B183M6	J3L180214-1	F61MP1AK	9F61MP10	3353379
		B183M6	J3L180214-1	F61MP1AJ	9F61MP10	3353380
		B183M6	J3L180214-1	F61MP1AD	9F61MP10	3353382
		B183M6	J3L180214-1	F61MP1AM	9F61MP10	3353383
		B183M6	J3L180214-1	F61MP1AH	9F61MP10	3353385
		B183M6	J3L180214-1	F61MP1AF	9F61MP10	3353386
		B183M6	J3L180214-1	F61MP1AN	9F61MP10	3353387
		B183M6	J3L180214-1	F61MP1AA	9F61MP10	3353388
		B183M6	J3L180214-1	F61MP1AE	9F61MP10	3353390
		B183M6	J3L180214-1	F61MP1AL	9F61MP10	3353391
		B183M6	J3L180214-1	F61MP2AC	9F61MP20	4016367

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SEVERN TRENT STL

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Certificate of Analysis

RECEIVED FEB 2004

Fluor Hanford
P.O. Box 1000, T6-03
Richland, WA 99352

January 27, 2004

Attention: Steve Trent

SAF Number	:	F03-020
Date SDG Closed	:	December 18, 2003
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	W04233
Data Deliverable	:	30-Day / Summary

AMMENDED CASE NARRATIVE

I. Introduction

On December 18, 2003, one water sample was received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Fluor Hanford (FH) specific ID:

FH ID#	STLR ID#	MATRIX	DATE OF RECEIPT
B183M6	F61MP	SOIL	12/18/03

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in. The turn around time was provided and began on December 18, 2004 by Steve Trent via telephone.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analysis was:

Alpha Spectroscopy
Americium-241 by method RICHRC5080
Plutonium-238, -239/40 by method RICHRC5080
Thorium-228, -230,-232 by method RICHRC5084
Uranium-234, -235, -238 by method RICHRC5079

Gamma Spectroscopy
Gamma by method RICHRC5017

Gas Proportional Counting
Total Strontium by method RICHRC5006

Liquid Scintillation Counting
Carbon-14 by method RICHRC5022
Nickel-63 by method RICHRC5069
Technecium-99 by method RICHRC5078
Tritium by method RICHRC503

Laser Induce Phosphorimetry
Total Uranium by KPA to method RICHRC5015

IV. Quality Control

The analytical results for each analysis performed under SDG W04233 includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy
Americium-241 by method RICHRC5080
The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Plutonium-238, -239/40 by method RICHRC5080
The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Thorium-232 by method RICHRC5084
The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Uranium-234, -235, -238 by method RICHRC5079
The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Gamma Spectroscopy

Gamma by method RICHRC5017

There was insufficient sample received to analyze a separate duplicate sample fraction, therefore the precision determination was performed by recounting the sample aliquot on a separate detector. Except as noted, the LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Gas Proportional Counting

Total Strontium by method RICHRC5006

A low carrier yield for sample B183M6 and it's duplicate (B183M6) caused the samples to be reanalyzed. The reanalysis data is within limits and the data are accepted. Except as noted, the LCS, batch blank, sample and sample duplicate (B17RV0) are within contractual requirements.

Liquid Scintillation Counting

Carbon-14 by method RICHRC5022

The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Nickel-63 by method RICHRC5069

The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Technecium-99 by method RICHRC5078

The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Tritium by method RICHRC5037

The LCS, batch blank, sample and sample duplicate (B183M6) are within contractual requirements.

Laser Induce Phosphorimetry

Total Uranium by KPA to method RICHRC5015

The LCS, batch blank, sample, sample duplicate (B183M6) and matrix spike (B183M6) are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Beverly I. Giroir
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, ***u_c the combined uncertainty.*** The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Date: 28-Jan-04

Report No. : 24741

SDG No: W04233

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
3353387 UTOT_KPA									
B183M6									
	F61MP1AN	TOTAL-URANIUM	6.86E+00 +- 7.07E-01		ug/g		7.29E-05	1.00E+00	
B183M6 DUP									
	F61MP1A1	TOTAL-URANIUM	8.28E+00 +- 8.55E-01		ug/g		7.29E-05	1.00E+00	
3353386 AMCMISO_EIE_PLT_AEA									
B183M6									
	F61MP1AF	AM-241	2.79E-02 +- 3.99E-02	U	pCi/g	70%	3.78E-02	1.00E+00	
B183M6 DUP									
	F61MP1AX	AM-241	2.36E-02 +- 3.37E-02	U	pCi/g	75%	3.20E-02	1.00E+00	
3353390 PUISO_PLATE_AEA									
B183M6									
	F61MP1AE	PU-238	0.00E+00 +- 3.02E-02	U	pCi/g	52%	3.35E-02	1.00E+00	
		PU239/40	9.87E-03 +- 2.52E-02	U	pCi/g	52%	5.91E-02	1.00E+00	
B183M6 DUP									
	F61MP1A3	PU-238	0.00E+00 +- 2.26E-02	U	pCi/g	73%	2.51E-02	1.00E+00	
		PU239/40	9.24E-03 +- 1.85E-02	U	pCi/g	73%	2.50E-02	1.00E+00	
3353385 THISO_IE_PRECIP_AEA									
B183M6									
	F61MP1AH	TH-228	1.05E+00 +- 2.60E-01		pCi/g	96%	6.87E-02	1.00E+00	
		TH-230	7.28E-01 +- 1.99E-01		pCi/g	96%	4.98E-02	1.00E+00	
		TH-232	7.98E-01 +- 2.12E-01		pCi/g	96%	5.23E-02	1.00E+00	
B183M6 DUP									
	F61MP1AW	TH-228	1.25E+00 +- 2.88E-01		pCi/g	90%	5.38E-02	1.00E+00	
		TH-230	7.15E-01 +- 1.92E-01		pCi/g	90%	3.35E-02	1.00E+00	
		TH-232	1.02E+00 +- 2.46E-01		pCi/g	90%	3.35E-02	1.00E+00	
3353388 UISO_IE_PLATE_AEA									
B183M6									
	F61MP1AA	U-234	2.63E+00 +- 6.91E-01		pCi/g	34%	8.24E-02	1.00E+00	
		U-235	1.03E-01 +- 8.69E-02		pCi/g	34%	4.66E-02	1.00E+00	
		U-238	2.41E+00 +- 6.46E-01		pCi/g	34%	1.09E-01	1.00E+00	
B183M6 DUP									
	F61MP1A2	U-234	2.39E+00 +- 5.15E-01		pCi/g	77%	4.22E-02	1.00E+00	
		U-235	6.72E-02 +- 4.65E-02		pCi/g	77%	2.02E-02	1.00E+00	
		U-238	2.26E+00 +- 4.92E-01		pCi/g	77%	3.58E-02	1.00E+00	
3353391 GAMMA_GS									
B183M6									
	F61MP1AL	CO-60	6.01E-02 +- 3.04E-02	U	pCi/g		4.32E-02	5.00E-02	
		CS-134	1.37E-02 +- 2.05E-02	U	pCi/g		3.56E-02		
		CS-137	1.17E+00 +- 1.48E-01		pCi/g		3.23E-02	1.00E-01	

RPD - Relative Percent Difference.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Date: 28-Jan-04

Report No. : 24741

SDG No: W04233

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
3353391 GAMMA_GS									
B183M6									
	F61MP1AL	EU-152	-3.15E-02 +- 6.48E-02	U	pCi/g		7.99E-02	1.00E-01	
		EU-154	-6.20E-02 +- 6.10E-02	U	pCi/g		9.81E-02	1.00E-01	
		EU-155	4.13E-02 +- 4.30E-02	U	pCi/g		7.30E-02	1.00E-01	
		RA-226	4.85E-01 +- 8.67E-02		pCi/g		6.68E-02		
		RA-228	7.56E-01 +- 1.60E-01		pCi/g		1.17E-01		
		SB-125	9.21E-01 +- 1.49E-01		pCi/g		8.39E-02		
		SN-126	1.89E-03 +- 2.10E-02	U	pCi/g		2.97E-02		
B183M6 DUP									
	F61MP1A4	CO-60	3.21E-02 +- 2.96E-02	U	pCi/g		4.46E-02	5.00E-02	
		CS-134	4.42E-02 +- 2.15E-02	U	pCi/g		3.81E-02		
		CS-137	1.25E+00 +- 1.58E-01		pCi/g		3.26E-02	1.00E-01	
		EU-152	6.46E-03 +- 4.80E-02	U	pCi/g		8.13E-02	1.00E-01	
		EU-154	1.77E-02 +- 5.97E-02	U	pCi/g		1.04E-01	1.00E-01	
		EU-155	6.86E-02 +- 4.56E-02	U	pCi/g		7.79E-02	1.00E-01	
		RA-226	4.34E-01 +- 9.57E-02		pCi/g		5.61E-02		
		RA-228	7.86E-01 +- 2.07E-01		pCi/g		1.11E-01		
		SB-125	9.46E-01 +- 1.66E-01		pCi/g		8.54E-02		
		SN-126	-7.03E-03 +- 1.85E-02	U	pCi/g		2.64E-02		
4016367 SRTOT_SEP_PRECIP_GPC									
B183M6									
	F61MP2AC	STRONTIUM	1.53E+00 +- 4.46E-01		pCi/g	63%	2.43E-01		
B183M6 DUP									
	F61MP2AP	STRONTIUM	1.63E+00 +- 4.64E-01		pCi/g	61%	1.67E-01		
3353379 906.0_H3_LSC									
B183M6									
	F61MP1AK	H-3	3.02E-01 +- 3.43E-02		pCi/g	100%	4.01E-02	4.00E+02	
B183M6 DUP									
	F61MP1AQ	H-3	3.09E-01 +- 3.44E-02		pCi/g	100%	3.96E-02	4.00E+02	
3353380 TC99_ETVDSK_LSC									
B183M6									
	F61MP1AJ	TC-99	7.64E-01 +- 4.17E-01		pCi/g	100%	6.41E-01	1.50E+01	
B183M6 DUP									
	F61MP1AT	TC-99	4.54E-01 +- 4.00E-01	U	pCi/g	100%	6.41E-01	1.50E+01	
3353382 NI63LSC									
B183M6									
	F61MP1AD	NI-63	8.71E+00 +- 5.18E+00		pCi/g	81%	6.58E+00	3.00E+01	
B183M6 DUP									
	F61MP1AU	NI-63	5.50E+00 +- 5.16E+00	U	pCi/g	78%	7.25E+00	3.00E+01	

RPD - Relative Percent Difference.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Date: 28-Jan-04

Report No. : 24741

SDG No: W04233

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
3353382	NI63LSC								
3353383	C14_LSC								
	B183M6								
	F61MP1AM	C-14	3.09E+00 +- 4.91E-01		pCi/g	100%	7.87E-01	5.00E+01	
	B183M6 DUP								
	F61MP1AV	C-14	2.88E+00 +- 4.84E-01		pCi/g	100%	7.90E-01	5.00E+01	

No. of Results: 50

QC Results Summary
STL Richland STLRL

Date: 28-Jan-04

Ordered by Method, Batch No, QC Type,.

Report No. : 24741

SDG No.: W04233

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
UTOT_KPA								
3353387 MATRIX SPIKE								
F61MP1A0	TOTAL-URANIUM	7.16E+00 +- 1.84E+00		ug/g		71%	-0.3	7.29E-05
3353387 BLANK QC								
F64HR1AA	TOTAL-URANIUM	8.83E-03 +- 9.60E-04		ug/g				7.29E-05
3353387 LCS								
F64HR1AC	TOTAL-URANIUM	9.98E+00 +- 1.02E+00		ug/g		98%	0.0	7.29E-05
AMCMISO_EIE_PLT_AEA								
3353386 BLANK QC								
F64HF1AA	AM-241	1.19E-02 +- 1.70E-02	U	pCi/g	73%			1.61E-02
3353386 LCS								
F64HF1AC	AM-241	3.89E+00 +- 7.22E-01		pCi/g	95%	85%	-0.2	2.38E-02
PUISO_PLATE_AEA								
3353390 BLANK QC								
F64JA1AA	PU-238	0.00E+00 +- 2.05E-02	U	pCi/g	41%			2.26E-02
	PU239/40	0.00E+00 +- 2.04E-02	U	pCi/g	41%			2.26E-02
3353390 LCS								
F64JA1AC	PU239/40	3.91E+00 +- 8.23E-01		pCi/g	34%	114%	0.1	2.52E-02
THISO_IE_PRECIP_AEA								
3353385 BLANK QC								
F64G51AA	TH-228	-3.09E-03 +- 2.81E-03	U	pCi/g	73%			4.37E-02
	TH-230	-1.18E-03 +- 1.68E-03	U	pCi/g	73%			3.38E-02
	TH-232	-5.92E-04 +- 1.19E-03	U	pCi/g	73%			2.98E-02
3353385 LCS								
F64G51AC	TH-230	1.21E+00 +- 2.55E-01		pCi/g	80%	107%	0.1	2.70E-02
UISO_IE_PLATE_AEA								
3353388 BLANK QC								
F64H61AA	U-234	4.93E-02 +- 2.81E-02		pCi/g	85%			1.71E-02
	U-235	0.00E+00 +- 8.74E-03	U	pCi/g	85%			9.67E-03
	U-238	7.14E-03 +- 1.02E-02	U	pCi/g	85%			9.67E-03
3353388 LCS								
F64H61AC	U-234	1.53E+00 +- 3.14E-01		pCi/g	68%	94%	-0.1	3.96E-02
	U-238	1.66E+00 +- 3.36E-01		pCi/g	68%	97%	0.0	3.03E-02
GAMMA_GS								
3353391 BLANK QC								
F64JD1AA	CO-60	3.17E-02 +- 2.09E-02	U	pCi/g				3.84E-02
	CS-134	1.64E-03 +- 1.91E-02	U	pCi/g				3.28E-02
	CS-137	-1.56E-02 +- 1.88E-02	U	pCi/g				3.04E-02
	EU-152	8.37E-04 +- 4.51E-02	U	pCi/g				7.64E-02
	EU-154	-3.15E-02 +- 5.57E-02	U	pCi/g				9.35E-02
	EU-155	-8.96E-03 +- 3.76E-02	U	pCi/g				6.26E-02
	RA-226	1.75E-01 +- 6.75E-02	U	pCi/g				7.77E-02

STL Richland

rptSTLRchQcSummary V4.05 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

QC Results Summary

STL Richland STLRL

Ordered by Method, Batch No, QC Type,.

Date: 28-Jan-04

Report No. : 24741

SDG No.: W04233

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
F64JD1AA	RA-228	1.52E-01 +- 9.20E-02	U	pCi/g				1.44E-01
	SB-125	-7.30E-03 +- 4.50E-02	U	pCi/g				7.51E-02
	SN-126	4.13E-03 +- 1.60E-02	U	pCi/g				2.73E-02
3353391 LCS								
F64JD1AC	CS-137	8.64E-01 +- 1.26E-01		pCi/g		92%	-0.1	6.57E-02
	RA-226	1.65E+00 +- 2.74E-01		pCi/g		77%	-0.2	1.08E-01
SRTOT_SEP_PRECIP_GPC								
4016367 BLANK QC								
F75VX1AA	STRONTIUM	4.77E-02 +- 6.72E-02	U	pCi/g	77%			1.36E-01
4016367 LCS								
F75VX1AC	STRONTIUM	1.11E+00 +- 3.21E-01		pCi/g	79%	98%	0.0	1.32E-01
906.0_H3_LSC								
3353379 BLANK QC								
F64GL1AA	H-3	-9.55E-03 +- 1.37E-01	U	pCi/g	100%			3.05E-01
3353379 LCS								
F64GL1AC	H-3	1.08E+00 +- 1.99E-01		pCi/g	100%	80%	-0.2	3.12E-01
TC99_ETVDSK_LSC								
3353380 MATRIX SPIKE								
F61MP1AR	TC-99	2.06E+02 +- 1.27E+01		pCi/g	100%	91%	-0.1	6.33E-01
3353380 BLANK QC								
F64GR1AA	TC-99	1.57E-01 +- 3.83E-01	U	pCi/g	100%			6.44E-01
3353380 LCS								
F64GR1AC	TC-99	2.11E+02 +- 1.30E+01		pCi/g	100%	93%	-0.1	6.39E-01
NI63LSC								
3353382 BLANK QC								
F64G01AA	NI-63	2.67E+00 +- 4.63E+00	U	pCi/g	82%			6.32E+00
3353382 LCS								
F64G01AC	NI-63	4.84E+02 +- 7.67E+01		pCi/g	78%	96%	0.0	7.17E+00
C14_LSC								
3353383 BLANK QC								
F64G21AA	C-14	1.42E-01 +- 1.58E-01	U	pCi/g	100%			3.17E-01
3353383 LCS								
F64G21AC	C-14	7.36E+00 +- 4.02E-01		pCi/g	100%	102%	0.0	3.16E-01

No. of Results: 40

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 28-Jan-04

Lab Name:	STL Richland	**SDG:**	W04233	**Collection Date:**	12/13/2003 9:09:00 AM
Lot-Sample No.:	J3L180214-1	**Report No. :**	24741	**Received Date:**	12/18/2003 10:28:00 AM
Client Sample ID:	B183M6	**COC No. :**	F03-020-014	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3353379	906.0_H3_LSC			**Work Order:** F61MP1AK		**Report DB ID:** 9F61MP10						
H-3	3.02E-01		3.03E-02	3.43E-02	4.01E-02	pCi/g	100%	*(7.5)*	12/24/03 07:38 p		80.2	LSC3
						1.85E-02	4.00E+02	*(17.6)*			G	
Batch: 3353380	TC99_ETVDSK_LSC			**Work Order:** F61MP1AJ		**Report DB ID:** 9F61MP10						
TC-99	7.64E-01		2.89E-01	4.17E-01	6.41E-01	pCi/g	100%	*(1.2)*	1/15/04 07:53 p		2.0	LSC4
						3.08E-01	1.50E+01	*(3.7)*			G	
Batch: 3353382	NI63LSC			**Work Order:** F61MP1AD		**Report DB ID:** 9F61MP10						
NI-63	8.71E+00		2.93E+00	5.18E+00	6.58E+00	pCi/g	81%	*(1.3)*	1/18/04 10:19 p		0.2501	LSC3
						3.18E+00	3.00E+01	*(3.4)*			G	
Batch: 3353383	C14_LSC			**Work Order:** F61MP1AM		**Report DB ID:** 9F61MP10						
C-14	3.09E+00		4.25E-01	4.91E-01	7.87E-01	pCi/g	100%	*(3.9)*	12/24/03 03:23 p		2.01	LSC3
						3.77E-01	5.00E+01	*(12.6)*			G	
Batch: 3353385	THISO_IE_PRECIP_AEA			**Work Order:** F61MP1AH		**Report DB ID:** 9F61MP10						
TH-228	1.05E+00		1.98E-01	2.60E-01	6.87E-02	pCi/g	96%	*(15.3)*	1/20/04 05:55 p		0.99	ALP113
						2.19E-02	1.00E+00	*(8.1)*			G	
TH-230	7.28E-01		1.61E-01	1.99E-01	4.98E-02	pCi/g	96%	*(14.6)*	1/20/04 05:55 p		0.99	ALP113
						1.30E-02	1.00E+00	*(7.3)*			G	
TH-232	7.98E-01		1.68E-01	2.12E-01	5.23E-02	pCi/g	96%	*(15.3)*	1/20/04 05:55 p		0.99	ALP113
						1.42E-02	1.00E+00	*(7.5)*			G	
Batch: 3353386	AMCMISO_EIE_PLT_AEA			**Work Order:** F61MP1AF		**Report DB ID:** 9F61MP10						

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 28-Jan-04

Lab Name: STL Richland
Lot-Sample No.: J3L180214-1
Client Sample ID: B183M6

SDG: W04233
Report No. : 24741
COC No. : F03-020-014

Collection Date: 12/13/2003 9:09:00 AM
Received Date: 12/18/2003 10:28:00 AM
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
AM-241	2.79E-02	U	3.95E-02	3.99E-02	3.78E-02	pCi/g	70%	*0.74*	1/23/04 02:58 p		1.04	ALP124
							1.00E+00	*(1.4)*			G	
Batch: 3353387	UTOT_KPA			**Work Order:**	F61MP1AN		**Report DB ID:**	9F61MP10				
TOTAL-URANIUM	6.86E+00		0.00E+00	7.07E-01	7.29E-05	ug/g		*(94158.6)*	1/14/04 08:19 a		0.001	KPAW3
						2.58E-05	1.00E+00	*(19.4)*			ML	
Batch: 3353388	UISO_IE_PLATE_AEA			**Work Order:**	F61MP1AA		**Report DB ID:**	9F61MP10				
U-234	2.63E+00		4.26E-01	6.91E-01	8.24E-02	pCi/g	34%	*(31.9)*	1/20/04 01:35 p		1.03	ALP5
						1.79E-02	1.00E+00	*(7.6)*			G	
U-235	1.03E-01		8.43E-02	8.69E-02	4.66E-02	pCi/g	34%	*(2.2)*	1/20/04 01:35 p		1.03	ALP5
							1.00E+00	*(2.4)*			G	
U-238	2.41E+00		4.09E-01	6.46E-01	1.09E-01	pCi/g	34%	*(22.2)*	1/20/04 01:35 p		1.03	ALP5
						3.10E-02	1.00E+00	*(7.5)*			G	
							Ratio U-234/238 = 1.1					
Batch: 3353390	PUISO_PLATE_AEA			**Work Order:**	F61MP1AE		**Report DB ID:**	9F61MP10				
PU-238	0.00E+00	U	0.00E+00	3.02E-02	3.35E-02	pCi/g	52%	*0.*	1/20/04 04:20 p		1.04	ALP41
							1.00E+00	*0.*			G	
PU239/40	9.87E-03	U	2.52E-02	2.52E-02	5.91E-02	pCi/g	52%	*0.17*	1/20/04 04:20 p		1.04	ALP41
						1.28E-02	1.00E+00	*0.78*			G	
Batch: 3353391	GAMMA_GS			**Work Order:**	F61MP1AL		**Report DB ID:**	9F61MP10				
CO-60	6.01E-02	U	3.04E-02	3.04E-02	4.32E-02	pCi/g		*(1.4)*	12/25/03 10:51 a		66.9	GER1$1
							5.00E-02	*(3.9)*			g	

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 28-Jan-04

Lab Name: STL Richland
Lot-Sample No.: J3L180214-1
Client Sample ID: B183M6

SDG: W04233
Report No. : 24741
COC No. : F03-020-014

Collection Date: 12/13/2003 9:09:00 AM
Received Date: 12/18/2003 10:28:00 AM
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
CS-134	1.37E-02	U	2.05E-02	2.05E-02	3.56E-02	pCi/g		*0.38*	12/25/03 10:51 a		66.9	GER1$1
								(1.3)			g	
CS-137	1.17E+00		1.48E-01	1.48E-01	3.23E-02	pCi/g		*(36.2)*	12/25/03 10:51 a		66.9	GER1$1
							1.00E-01	*(15.9)*			g	
EU-152	-3.15E-02	U	6.48E-02	6.48E-02	7.99E-02	pCi/g		*-0.39*	12/25/03 10:51 a		66.9	GER1$1
							1.00E-01	*-0.97*			g	
EU-154	-6.20E-02	U	6.10E-02	6.10E-02	9.81E-02	pCi/g		*-0.63*	12/25/03 10:51 a		66.9	GER1$1
							1.00E-01	*-(2.)*			g	
EU-155	4.13E-02	U	4.30E-02	4.30E-02	7.30E-02	pCi/g		*0.57*	12/25/03 10:51 a		66.9	GER1$1
							1.00E-01	*(1.9)*			g	
RA-226	4.85E-01		8.67E-02	8.67E-02	6.68E-02	pCi/g		*(7.2)*	12/25/03 10:51 a		66.9	GER1$1
								(11.2)			g	
RA-228	7.56E-01		1.60E-01	1.60E-01	1.17E-01	pCi/g		*(6.5)*	12/25/03 10:51 a		66.9	GER1$1
								(9.4)			g	
SB-125	9.21E-01		1.49E-01	1.49E-01	8.39E-02	pCi/g		*(11.)*	12/25/03 10:51 a		66.9	GER1$1
								(12.3)			g	
SN-126	1.89E-03	U	2.10E-02	2.10E-02	2.97E-02	pCi/g		*0.06*	12/25/03 10:51 a		66.9	GER1$1
								0.18			g	
Batch: 4016367	SRTOT_SEP_PRECIP_GPC			**Work Order:** F61MP2AC			**Report DB ID:** 9F61MP20					
STRONTIUM	1.53E+00		1.97E-01	4.46E-01	2.43E-01	pCi/g	63%	*(6.3)*	1/20/04 06:17 p		6.05	GPC31A
						1.16E-01		*(6.9)*			G	

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FORM I

SAMPLE RESULTS

Date: 28-Jan-04

Lab Name:	STL Richland	**SDG:**	W04233	**Collection Date:**	12/13/2003 9:09:00 AM
Lot-Sample No.:	J3L180214-1	**Report No. :**	24741	**Received Date:**	12/18/2003 10:28:00 AM
Client Sample ID:	B183M6	**COC No. :**	F03-020-014	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector

No. of Results: 25 **Comments:**

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 28-Jan-04

DUPLICATE RESULTS

Lab Name:	STL Richland	**SDG:**	W04233	**Collection Date:**	12/13/2003 9:09:00 AM
Lot-Sample No.:	J3L180214-1	**Report No. :**	24741	**Received Date:**	12/18/2003 10:28:00 AM
Client Sample ID:	B183M6 DUP	**COC No. :**	F03-020-014	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3353379	906.0_H3_LSC			**Work Order:** F61MP1AQ		**Report DB ID:** F61MP1QR			**Orig Sa DB ID:** 9F61MP10			
H-3	3.09E-01		3.04E-02	3.44E-02	3.96E-02	pCi/g	100%	(7.8)	12/24/03 08:20 p		78.6	LSC3
	3.02E-01		**RPD**	**2.3**		4.00E+02		(18.)			G	
Batch: 3353380	TC99_ETVDSK_LSC			**Work Order:** F61MP1AT		**Report DB ID:** F61MP1TR			**Orig Sa DB ID:** 9F61MP10			
TC-99	4.54E-01	U	2.79E-01	4.00E-01	6.41E-01	pCi/g	100%	0.71	1/15/04 09:57 p		2.0	LSC4
	7.64E-01		**RPD**	**50.9**		1.50E+01		(2.3)			G	
Batch: 3353382	NI63LSC			**Work Order:** F61MP1AU		**Report DB ID:** F61MP1UR			**Orig Sa DB ID:** 9F61MP10			
NI-63	5.50E+00	U	3.04E+00	5.16E+00	7.25E+00	pCi/g	78%	0.76	1/19/04 12:01 a		0.2496	LSC3
	8.71E+00		**RPD**	**45.3**		3.00E+01		(2.1)			G	
Batch: 3353383	C14_LSC			**Work Order:** F61MP1AV		**Report DB ID:** F61MP1VR			**Orig Sa DB ID:** 9F61MP10			
C-14	2.88E+00		4.20E-01	4.84E-01	7.90E-01	pCi/g	100%	(3.6)	12/24/03 04:06 p		2.005	LSC3
	3.09E+00		**RPD**	**7.3**		5.00E+01		(11.9)			G	
Batch: 3353385	THISO_IE_PRECIP_AEA			**Work Order:** F61MP1AW		**Report DB ID:** F61MP1WR			**Orig Sa DB ID:** 9F61MP10			
TH-228	1.25E+00		2.09E-01	2.88E-01	5.38E-02	pCi/g	90%	(23.2)	1/20/04 05:55 p		1.05	ALP114
	1.05E+00		**RPD**	**17.1**		1.00E+00		(8.6)			G	
TH-230	7.15E-01		1.54E-01	1.92E-01	3.35E-02	pCi/g	90%	(21.3)	1/20/04 05:55 p		1.05	ALP114
	7.28E-01		**RPD**	**1.9**		1.00E+00		(7.4)			G	
TH-232	1.02E+00		1.84E-01	2.46E-01	3.35E-02	pCi/g	90%	(30.5)	1/20/04 05:55 p		1.05	ALP114
	7.98E-01		**RPD**	**24.6**		1.00E+00		(8.3)			G	

STL Richland

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RPD - Relative Percent Difference.

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 28-Jan-04

DUPLICATE RESULTS

Lab Name:	STL Richland	**SDG:**	W04233	**Collection Date:**	12/13/2003 9:09:00 AM
Lot-Sample No.:	J3L180214-1	**Report No. :**	24741	**Received Date:**	12/18/2003 10:28:00 AM
Client Sample ID:	B183M6 DUP	**COC No. :**	F03-020-014	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3353386	AMCMISO_EIE_PLT_AEA			**Work Order:** F61MP1AX		**Report DB ID:** F61MP1XR			**Orig Sa DB ID:** 9F61MP10			
AM-241	2.36E-02	U	3.34E-02	3.37E-02	3.20E-02	pCi/g	75%	0.74	1/23/04 02:59 p		1.0	ALP127
	2.79E-02	U	**RPD**	**16.7**		1.00E+00		(1.4)			G	
									Alpha Spec Result Sum = 2.4E-02			
Batch: 3353387	UTOT_KPA			**Work Order:** F61MP1A1		**Report DB ID:** F61MP11R			**Orig Sa DB ID:** 9F61MP10			
TOTAL-URANIUM	8.28E+00		0.00E+00	8.55E-01	7.29E-05	ug/g		(113574.2)	1/14/04 08:27 a		0.001	KPAW3
	6.86E+00		**RPD**	**18.7**		1.00E+00		(19.4)			ML	
									Alpha Spec Result Sum = 2.4E-02			
Batch: 3353388	UISO_IE_PLATE_AEA			**Work Order:** F61MP1A2		**Report DB ID:** F61MP12R			**Orig Sa DB ID:** 9F61MP10			
U-234	2.39E+00		2.67E-01	5.15E-01	4.22E-02	pCi/g	77%	(56.5)	1/20/04 01:31 p		1.01	ALP6
	2.63E+00		**RPD**	**9.7**		1.00E+00		(9.3)			G	
U-235	6.72E-02		4.48E-02	4.65E-02	2.02E-02	pCi/g	77%	(3.3)	1/20/04 01:31 p		1.01	ALP6
	1.03E-01		**RPD**	**42.3**		1.00E+00		(2.9)			G	
U-238	2.26E+00		2.60E-01	4.92E-01	3.58E-02	pCi/g	77%	(63.2)	1/20/04 01:31 p		1.01	ALP6
	2.41E+00		**RPD**	**6.6**		1.00E+00		(9.2)			G	
						Ratio U-234/238 = 1.1			*Alpha Spec Result Sum = 4.7E+00*			
Batch: 3353390	PUISO_PLATE_AEA			**Work Order:** F61MP1A3		**Report DB ID:** F61MP13R			**Orig Sa DB ID:** 9F61MP10			
PU-238	0.00E+00	U	0.00E+00	2.26E-02	2.51E-02	pCi/g	73%	0.	1/20/04 04:21 p		1.0	ALP43
	0.00E+00	U	**RPD**			1.00E+00		0.			G	

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RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 28-Jan-04

DUPLICATE RESULTS

Lab Name:	STL Richland	**SDG:**	W04233	**Collection Date:**	12/13/2003 9:09:00 AM
Lot-Sample No.:	J3L180214-1	**Report No. :**	24741	**Received Date:**	12/18/2003 10:28:00 AM
Client Sample ID:	B183M6 DUP	**COC No. :**	F03-020-014	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
PU239/40	9.24E-03	U	1.85E-02	1.85E-02	2.50E-02	pCi/g	73%	0.37	1/20/04 04:21 p		1.0	ALP43
	9.87E-03	U	RPD 6.6			1.00E+00		1.			G	
									Alpha Spec Result Sum = 9.2E-03			

Batch: 3353391 GAMMA_GS **Work Order:** F61MP1A4 **Report DB ID:** F61MP14R **Orig Sa DB ID:** 9F61MP10

CO-60	3.21E-02	U	2.96E-02	2.96E-02	4.46E-02	pCi/g		0.72	1/13/04 01:09 p	66.9	GER4$1
	6.01E-02	U	RPD 60.8			5.00E-02		(2.2)		g	
CS-134	4.42E-02	U	2.15E-02	2.15E-02	3.81E-02	pCi/g		(1.2)	1/13/04 01:09 p	66.9	GER4$1
	1.37E-02	U	RPD 105.4					(4.1)		g	
CS-137	1.25E+00		1.58E-01	1.58E-01	3.26E-02	pCi/g		(38.3)	1/13/04 01:09 p	66.9	GER4$1
	1.17E+00		RPD 6.3			1.00E-01		(15.8)		g	
EU-152	6.46E-03	U	4.80E-02	4.80E-02	8.13E-02	pCi/g		0.08	1/13/04 01:09 p	66.9	GER4$1
	-3.15E-02	U	RPD -302.9			1.00E-01		0.27		g	
EU-154	1.77E-02	U	5.97E-02	5.97E-02	1.04E-01	pCi/g		0.17	1/13/04 01:09 p	66.9	GER4$1
	-6.20E-02	U	RPD -360.5			1.00E-01		0.59		g	
EU-155	6.86E-02	U	4.56E-02	4.56E-02	7.79E-02	pCi/g		0.88	1/13/04 01:09 p	66.9	GER4$1
	4.13E-02	U	RPD 49.7			1.00E-01		(3.)		g	
RA-226	4.34E-01		9.57E-02	9.57E-02	5.61E-02	pCi/g		(7.7)	1/13/04 01:09 p	66.9	GER4$1
	4.85E-01		RPD 11.0					(9.1)		g	
RA-228	7.86E-01		2.07E-01	2.07E-01	1.11E-01	pCi/g		(7.1)	1/13/04 01:09 p	66.9	GER4$1
	7.56E-01		RPD 3.9					(7.6)		g	
SB-125	9.46E-01		1.66E-01	1.66E-01	8.54E-02	pCi/g		(11.1)	1/13/04 01:09 p	66.9	GER4$1
	9.21E-01		RPD 2.6					(11.4)		g	

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RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 28-Jan-04

DUPLICATE RESULTS

Lab Name:	STL Richland	**SDG:**	W04233	**Collection Date:**	12/13/2003 9:09:00 AM
Lot-Sample No.:	J3L180214-1	**Report No. :**	24741	**Received Date:**	12/18/2003 10:28:00 AM
Client Sample ID:	B183M6 DUP	**COC No. :**	F03-020-014	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
SN-126	-7.03E-03	U	1.85E-02	1.85E-02	2.64E-02	pCi/g		-0.27	1/13/04 01:09 p		66.9	GER4$1
	1.89E-03	U	RPD	-346.7				-0.76			g	
Batch: 4016367	SRTOT_SEP_PRECIP_GPC		**Work Order:**	F61MP2AP		**Report DB ID:**	F61MP2PR		**Orig Sa DB ID:**	9F61MP20		
STRONTIUM	1.63E+00		1.86E-01	4.64E-01	1.67E-01	pCi/g	61%	(9.8)	1/20/04 06:17 p		6.03	GPC31B
	1.53E+00		RPD	6.7				(7.)			G	

No. of Results: 25 **Comments:**

STL Richland
rptSTLRchDupV4.05 A97

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

BLANK RESULTS

Date: 28-Jan-04

Lab Name: STL Richland
Matrix: SOIL

SDG: W04233
Report No. : 24741

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3353383	C14_LSC			**Work Order:**	F64G21AA		**Report DB ID:**	F64G21AB				
C-14	1.42E-01	U	1.36E-01	1.58E-01	3.17E-01	pCi/g	100%	0.45	12/24/03 01:59 p		5.0	LSC3
					1.52E-01	5.00E+01		(1.8)			G	
Batch: 3353390	PUISO_PLATE_AEA			**Work Order:**	F64JA1AA		**Report DB ID:**	F64JA1AB				
PU-238	0.00E+00	U	0.00E+00	2.05E-02	2.26E-02	pCi/g	41%	0.	1/20/04 04:21 p		2.0	ALP45
						1.00E+00		0.			G	
PU239/40	0.00E+00	U	0.00E+00	2.04E-02	2.26E-02	pCi/g	41%	0.	1/20/04 04:21 p		2.0	ALP45
						1.00E+00		0.			G	
Batch: 3353386	AMCMISO_EIE_PLT_AEA			**Work Order:**	F64HF1AA		**Report DB ID:**	F64HF1AB				
AM-241	1.19E-02	U	1.68E-02	1.70E-02	1.61E-02	pCi/g	73%	0.74	1/23/04 02:59 p		2.0	ALP128
						1.00E+00		(1.4)			G	
Batch: 3353388	UISO_IE_PLATE_AEA			**Work Order:**	F64H61AA		**Report DB ID:**	F64H61AB				
U-234	4.93E-02		2.68E-02	2.81E-02	1.71E-02	pCi/g	85%	(2.9)	1/20/04 01:31 p		2.0	ALP7
					3.72E-03	1.00E+00		(3.5)			G	
U-235	0.00E+00	U	0.00E+00	8.74E-03	9.67E-03	pCi/g	85%	0.	1/20/04 01:31 p		2.0	ALP7
						1.00E+00		0.			G	
U-238	7.14E-03	U	1.01E-02	1.02E-02	9.67E-03	pCi/g	85%	0.74	1/20/04 01:31 p		2.0	ALP7
						1.00E+00		(1.4)			G	
							Ratio U-234/238 = 6.9					
Batch: 3353387	UTOT_KPA			**Work Order:**	F64HR1AA		**Report DB ID:**	F64HR1AB				
TOTAL-URANIUM	8.83E-03		0.00E+00	9.60E-04	7.29E-05	ug/g		(121.1)	1/14/04 08:08 a		0.001	KPAW3
					2.58E-05	1.00E+00		(18.4)			ML	
Batch: 3353385	THISO_IE_PRECIP_AEA			**Work Order:**	F64G51AA		**Report DB ID:**	F64G51AB				

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V4.05 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM II

BLANK RESULTS

Date: 28-Jan-04

Lab Name: STL Richland

Matrix: SOIL

SDG: W04233

Report No. : 24741

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
TH-228	-3.09E-03	U	2.77E-03	2.81E-03	4.37E-02	pCi/g	73%	-0.07	1/20/04 05:55 p		2.0	ALP115
					1.14E-02	1.00E+00		-(2.2)			G	
TH-230	-1.18E-03	U	1.67E-03	1.68E-03	3.38E-02	pCi/g	73%	-0.04	1/20/04 05:55 p		2.0	ALP115
					6.88E-03	1.00E+00		-(1.4)			G	
TH-232	-5.92E-04	U	1.18E-03	1.19E-03	2.98E-02	pCi/g	73%	-0.02	1/20/04 05:55 p		2.0	ALP115
					4.87E-03	1.00E+00		-1.			G	
Batch: 3353382	NI63LSC			**Work Order:**	F64G01AA		**Report DB ID:**	F64G01AB				
NI-63	2.67E+00	U	2.69E+00	4.63E+00	6.32E+00	pCi/g	82%	0.42	1/19/04 01:44 a		0.25	LSC3
					3.06E+00	3.00E+01		(1.2)			G	
Batch: 3353380	TC99_ETVDSK_LSC			**Work Order:**	F64GR1AA		**Report DB ID:**	F64GR1AB				
TC-99	1.57E-01	U	2.69E-01	3.83E-01	6.44E-01	pCi/g	100%	0.24	1/15/04 11:00 p		2.0	LSC4
					3.09E-01	2.00E+01		0.82			G	
Batch: 3353379	906.0_H3_LSC			**Work Order:**	F64GL1AA		**Report DB ID:**	F64GL1AB				
H-3	-9.55E-03	U	1.21E-01	1.37E-01	3.05E-01	pCi/g	100%	-0.03	12/24/03 06:13 p		10.0	LSC3
					1.41E-01	4.00E+02		-0.14			G	
Batch: 3353391	GAMMA_GS			**Work Order:**	F64JD1AA		**Report DB ID:**	F64JD1AB				
CO-60	3.17E-02	U	2.09E-02	2.09E-02	3.84E-02	pCi/g		0.83	12/27/03 01:09 p		52.0	GER1$1
						5.00E-02		(3.)			g	
CS-134	1.64E-03	U	1.91E-02	1.91E-02	3.28E-02	pCi/g		0.05	12/27/03 01:09 p		52.0	GER1$1
								0.17			g	
CS-137	-1.56E-02	U	1.88E-02	1.88E-02	3.04E-02	pCi/g		-0.51	12/27/03 01:09 p		52.0	GER1$1
						1.00E-01		-(1.7)			g	

STL Richland
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V4.05 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

2

FORM II

BLANK RESULTS

Date: 28-Jan-04

Lab Name: STL Richland

Matrix: SOIL

SDG: W04233

Report No. : 24741

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
EU-152	8.37E-04	U	4.51E-02	4.51E-02	7.64E-02	pCi/g		0.01	12/27/03 01:09 p		52.0	GER1$1
						1.00E-01		0.04			g	
EU-154	-3.15E-02	U	5.57E-02	5.57E-02	9.35E-02	pCi/g		-0.34	12/27/03 01:09 p		52.0	GER1$1
						1.00E-01		-(1.1)			g	
EU-155	-8.96E-03	U	3.76E-02	3.76E-02	6.26E-02	pCi/g		-0.14	12/27/03 01:09 p		52.0	GER1$1
						1.00E-01		-0.48			g	
RA-226	1.75E-01	U	6.75E-02	6.75E-02	7.77E-02	pCi/g		(2.2)	12/27/03 01:09 p		52.0	GER1$1
								(5.2)			g	
RA-228	1.52E-01	U	9.20E-02	9.20E-02	1.44E-01	pCi/g		(1.1)	12/27/03 01:09 p		52.0	GER1$1
								(3.3)			g	
SB-125	-7.30E-03	U	4.50E-02	4.50E-02	7.51E-02	pCi/g		-0.1	12/27/03 01:09 p		52.0	GER1$1
								-0.32			g	
SN-126	4.13E-03	U	1.60E-02	1.60E-02	2.73E-02	pCi/g		0.15	12/27/03 01:09 p		52.0	GER1$1
								0.52			g	

Batch: 4016367 SRTOT_SEP_PRECIP_GPC **Work Order:** F75VX1AA **Report DB ID:** F75VX1AB

STRONTIUM	4.77E-02	U	6.60E-02	6.72E-02	1.36E-01	pCi/g	77%	0.35	1/20/04 06:17 p		6.0	GPC31C
					6.30E-02			(1.4)			G	

No. of Results: 25 **Comments:**

STL Richland
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V4.05 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

LCS RESULTS

Date: 28-Jan-04

Lab Name: STL Richland

Matrix: SOIL

SDG: W04233

Report No. : 24741

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3353383	C14_LSC			**Work Order:**	F64G21AC		**Report DB ID:**	F64G21CS					
C-14	7.36E+00		2.98E-01	4.02E-01	3.16E-01	pCi/g	100%	7.24E+00	2.35E-01	102%	12/24/03 02:41 p	5.0	LSC3
							Rec Limits:	70	130	0.0		G	
Batch: 3353390	PUISO_PLATE_AEA			**Work Order:**	F64JA1AC		**Report DB ID:**	F64JA1CS					
PU239/40	3.91E+00		3.81E-01	8.23E-01	2.52E-02	pCi/g	34%	3.44E+00	1.76E-01	114%	1/20/04 04:21 p	2.0	ALP47
							Rec Limits:	70	130	0.1		G	
Batch: 3353386	AMCMISO_EIE_PLT_AEA			**Work Order:**	F64HF1AC		**Report DB ID:**	F64HF1CS					
AM-241	3.89E+00		2.56E-01	7.22E-01	2.38E-02	pCi/g	95%	4.58E+00	1.54E-01	85%	1/23/04 02:59 p	2.0	ALP130
							Rec Limits:	70	130	-0.2		G	
Batch: 3353388	UISO_IE_PLATE_AEA			**Work Order:**	F64H61AC		**Report DB ID:**	F64H61CS					
U-234	1.53E+00		1.60E-01	3.14E-01	3.96E-02	pCi/g	68%	1.64E+00	1.00E-02	94%	1/20/04 01:31 p	2.0	ALP8
							Rec Limits:	70	130	-0.1		G	
U-238	1.66E+00		1.66E-01	3.36E-01	3.03E-02	pCi/g	68%	1.72E+00	1.05E-02	97%	1/20/04 01:31 p	2.0	ALP8
							Rec Limits:	70	130	0.0		G	
Batch: 3353387	UTOT_KPA			**Work Order:**	F64HR1AC		**Report DB ID:**	F64HR1CS					
TOTAL-URANIUM	9.98E+00		0.00E+00	1.02E+00	7.29E-05	ug/g		1.01E+01	6.24E-02	98%	1/14/04 08:13 a	0.001	KPAW3
							Rec Limits:	70	130	0.0		ML	
Batch: 3353385	THISO_IE_PRECIP_AEA			**Work Order:**	F64G51AC		**Report DB ID:**	F64G51CS					
TH-230	1.21E+00		1.80E-01	2.55E-01	2.70E-02	pCi/g	80%	1.13E+00	3.38E-02	107%	1/20/04 05:56 p	2.0	ALP116
							Rec Limits:	70	130	0.1		G	
Batch: 3353382	NI63LSC			**Work Order:**	F64G01AC		**Report DB ID:**	F64G01CS					
NI-63	4.84E+02		9.43E+00	7.67E+01	7.17E+00	pCi/g	78%	5.04E+02	1.69E+01	96%	1/19/04 03:27 a	0.25	LSC3
							Rec Limits:	70	130	0.0		G	

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V4.05 A97

FORM II

LCS RESULTS

Date: 28-Jan-04

Lab Name: STL Richland

Matrix: SOIL

SDG: W04233

Report No. : 24741

Parameter	Result	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3353380	TC99_ETVDSK_LSC			**Work Order:**	F64GR1AC		**Report DB ID:**	F64GR1CS					
TC-99	2.11E+02		1.99E+00	1.30E+01	6.39E-01	pCi/g	100%	2.27E+02	2.91E+00	93%	1/16/04 12:02 a	2.0	LSC4
							Rec Limits:	70	130	-0.1		G	
Batch: 3353379	906.0_H3_LSC			**Work Order:**	F64GL1AC		**Report DB ID:**	F64GL1CS					
H-3	1.08E+00		1.84E-01	1.99E-01	3.12E-01	pCi/g	100%	1.36E+00	4.68E-02	80%	12/24/03 06:56 p	10.0	LSC3
							Rec Limits:	70	130	-0.2		G	
Batch: 3353391	GAMMA_GS			**Work Order:**	F64JD1AC		**Report DB ID:**	F64JD1CM					
CS-137	8.64E-01		1.26E-01	1.26E-01	6.57E-02	pCi/g		9.39E-01	9.00E-01	92%	1/14/04 12:15 p	26.61	GER8$1
							Rec Limits:	70	130	-0.1		g	
RA-226	1.65E+00		2.74E-01	2.74E-01	1.08E-01	pCi/g		2.14E+00	1.86E+00	77%	1/14/04 12:15 p	26.61	GER8$1
							Rec Limits:	70	130	-0.2		g	
Batch: 4016367	SRTOT_SEP_PRECIP_GPC			**Work Order:**	F75VX1AC		**Report DB ID:**	F75VX1CS					
STRONTIUM	1.11E+00		1.39E-01	3.21E-01	1.32E-01	pCi/g	79%	1.14E+00	1.39E-02	98%	1/20/04 06:17 p	6.0	GPC31D
							Rec Limits:	20	105	0.0		G	

No. of Results: 13 **Comments:**

FORM II

Date: 28-Jan-04

MATRIX SPIKE RESULTS

Lab Name: STL Richland **SDG:** W04233

Lot-Sample No.: J3L180214-1 **Report No. :** 24741 **Matrix:** SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2s)	Total Uncert(2s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3353380	TC99_ETVDSK_LSC			**Work Order:**	F61MP1AR		**Report DB ID:**	F61MP1RW		**Orig Sa DB ID:**	9F61MP10		
TC-99	2.06E+02		1.97E+00	1.27E+01	6.33E-01	pCi/g	100%	91.10%	2.26E+02	1.90E+0(	1/15/04 08:55 p	2.0	LSC4
	7.64E-01	RPD	32.2									G	
Batch: 3353387	UTOT_KPA			**Work Order:**	F61MP1A0		**Report DB ID:**	F61MP10W		**Orig Sa DB ID:**	9F61MP10		
TOTAL-URANIUM	7.16E+00		0.00E+00	1.84E+00	7.29E-05	ug/g		70.95%	1.01E+01	3.22E-02	1/14/04 08:37 a	0.001	KPAW3
	6.86E+00	RPD	0.3									ML	

No. of Results: 2 **Comments:**

STL Richland
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V4.05 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/2004
QC Batch Number: 3353386
Method Test Parameter: SX - AM
Matrix: SOIL
SDG Number: W04233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 1-26-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353386

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	—		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	—		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	—		
8. Do the MS/MSD results and yields meet acceptance criteria?			—
9. Do the duplicate sample results and yields meet acceptance criteria?	—		
C. Other 1. Are all Nonconformances included and noted?			—
2. Are all required forms filled out?	—		
3. Was the correct methodology used?	—		
4. Was transcription checked?	—		
5. Were all calculations checked at a minimum frequency?	—		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Beverly [illegible] Date: 1-29-01

LS 038P Rev. 10 8/03

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/2004
QC Batch Number: 3353390
Method Test Parameter: SO - PUISO
Matrix: SOIL
SDG Number: W04233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 1-21-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353390

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Beverly DL Date: 1-22-04

2

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/2004
QC Batch Number: 3353385
Method Test Parameter: S1 - THISO
Matrix: SOIL
SDG Number: W04233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 1-21-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353385

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	√		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	√		
3. Are the correct isotopes reported?	√		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	√		
2. Does the blank result meet the Contract criteria?	√		
3. Is the blank result < the Contract Detection Limit?	√		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			√
5. Is the LCS recovery with contract acceptance criteria?	√		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	√		
8. Do the MS/MSD results and yields meet acceptance criteria?			√
9. Do the duplicate sample results and yields meet acceptance criteria?	√		
C. Other 1. Are all Nonconformances included and noted?			√
2. Are all required forms filled out?	√		
3. Was the correct methodology used?	√		
4. Was transcription checked?	√		
5. Were all calculations checked at a minimum frequency?	√		
6. Were units checked?	√		

Comments on any "No" response: _____

Second Level Review: [signature] Date: 1-22-04

LS-038B, Rev. 10, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/2004
QC Batch Number: 3353388
Method Test Parameter: SR - UISO
Matrix: SOIL
SDG Number: W04233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 1-21-04 PA 1-21-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353388

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: [signature] Date: 1-22-04

LS-038B, Rev. 10, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/2004
QC Batch Number: 3353391
Method Test Parameter: TA GAMMA BY HPGE
Matrix: SOIL
SDG Number:

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓	✓	
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?			✓
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓	✓	
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?			✓
E. Other 1. Are all Nonconformances included and noted? 10-01632	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: [signature] Date: 1-17-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353391

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓	✓	
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓	✓	
C. Other 1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: See NCM

Second Level Review: [signature] Date: 1-19-04

LS-038B, Rev. 10, 8/02

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: 10-01632
NCM Initiated By: Dale O'Connell
Date Opened: 01/17/2004
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Counting
Tests: Gamma by GER
Lot #'s (Sample #'s): J3L180214 (1), J3L190000 (391),
QC Batches: 3353391

Nonconformance: Insufficient sample volume for QC
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Dale O'Connell	01/17/2004	Insufficient sample to generate a duplicate. MDA > RDL for Co-60 on J3L180214-001-X. Cause - Matrix Effect: High activity of other radionuclides above the energy of interest are prohibitive to the achieving MDA<RDL, due to Compton Scattering. Possible False Positive: Although key-line activity> MDA, identification of radionuclide rejected by abundance criteria. J3L180214-001: Co-60

Corrective Action

Name	Date	Corrective Action
Dale O'Connell	01/17/2004	Precision determination achieved by recounting sample on a different detector. MDA achieved on the blank. Report results.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/2004
QC Batch Number: 4016367
Method Test Parameter: TH - TSR
Matrix: SOIL
SDG Number: 6-04033

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓	✓	
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓	✓	
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?	✓		
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: Rerun gets good yields 10-01662

First Level Review: Pam Anderson Date: 1-21-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: _____

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: See NCR

Second Level Review: [signature] Date: 1-22-09

LS-038B, Rev. 10, 8/02

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: 10-01662
NCM Initiated By: Pam Anderson
Date Opened: 01/21/2004
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: SrTot by GPC
Lot #'s (Sample #'s): J3L180214 (1), J4A160000 (367),
QC Batches: 4016367

Nonconformance: Tracer yield out of limits
Subcategory: Matrix effect

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	01/21/2004	The first analysis of this sample had failed tracer recoveries. The sample was rerun with good yields. Rerun data accepted.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	01/21/2004	Sample rerun.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L 180214
Client ID: FLH
Due Date: 1/16/2003
QC Batch Number: 335 3383
Method Test Parameter: S3 CARBON 14
Matrix: SOIL
SDG Number: W04233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?			✓
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 12-29-03

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353387

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: [signature] Date: 12-29-07

LS-038B, Rev. 10, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/2004
QC Batch Number: 3353382
Method Test Parameter: S4 – NI63
Matrix: SOIL
SDG Number: 6.04/233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?	✓		
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 1-20-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353382

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Brenda [illegible] Date: 1-22-04

LS-038B, Rev. 10, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

PA 1-16-04

Lot Number: J3L180214
Client ID: ~~PNA~~ PGW
Due Date: 1/16/04
QC Batch Number: 3353380
Method Test Parameter: S5 – TC99
Matrix: SOIL
SDG Number: 1104233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?			✓
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?	✓		
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 1-16-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353380

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response:

Second Level Review: [signature] Date: 1-17-04 ~~1-14-0~~ 1-17-04

LS-038B, Rev. 10, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: F-LH
Due Date: 1/16/2003
QC Batch Number: 3353379
Method Test Parameter: S6 H3
Matrix: SOIL
SDG Number: W04233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response:

First Level Review: Pam Anderson Date: 12-28-03

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353379

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: [signature] Date: 12-29-03

LS-038B, Rev. 10, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3L180214
Client ID: FLH
Due Date: 1/16/04
QC Batch Number: 3353387
Method Test Parameter: URANIUM
Matrix: WATER
SDG Number: W04233

Review Item	Yes (√)	No (√)	N/A (√)
A. COC 1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch 1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?			✓
C. QC & Samples 1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?	✓		
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data 1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other 1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: Dup + matrix spike switched in lab, obvious. Fixed in rad-calc.

First Level Review: Pam Anderson Date: 1-15-04

LS-038A, Rev. 9, 8/02

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3353387

Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Beverly [illegible] Date: 1-16-04

LS-038B, Rev. 10, 8/02

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: 10-01611
NCM Initiated By: Pam Anderson
Date Opened: 01/15/2004
Date Closed:

Classification: **Deficiency**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: UNat by KPA
Lot #'s (Sample #'s): J3L180214 (1),
QC Batches: 3353387

Nonconformance: Technician Error
Subcategory: Laboratory error: prep error

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	01/15/2004	The dup and the matrix spike were switched in the lab. It is obvious when reading the sample on the KPA. Data fixed in rad calc.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	01/15/2004	Tech made aware of error.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
	Response	Response Note			

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

CHAIN OF CUSTODY

FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F03-020-014	Page 1 of 1

Collector Pope/Hughes/Pfister	Company Contact Steve Trent	Telephone No. 373-5869	Project Coordinator TRENT, SJ
Project Designation 216-B-26 Characterization Sampling - Soil Sampling	Sampling Location C3245 (27.5-30 ft)		SAF No. F03-020
Ice Chest No. ARP-03-013	Field Logbook No. HNF-N-3561	COA 119142ES10	Method of Shipment Govt. Vehicle
Shipped To Severn Trent Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code ~~STD~~ ① 8H

Data Turnaround ① 45 Days 30

Air Quality [ ]

① MAB 12/18/03

POSSIBLE SAMPLE HAZARDS/REMARKS

Rad fu to B18527

Special Handling and/or Storage

SDG W04233

SAMPLE ANALYSIS

Rad 1-16

J3L80214

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	P	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	20mL Recd.	60mL	120mL	120mL	60mL	120mL	60mL	120mL		
	Activity Scan OR MAB 12/18/03	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196; NO2/NO3 - 353.1	See item (3) in Special Instructions.	See item (4) in Special Instructions.	See item (5) in Special Instructions.	See item (6) in Special Instructions. MAB 12/18/03		

Sample No.	Matrix *	Sample Date	Sample Time										
B183M6 F61MP	SOIL	12/13/03	0909	X	X	X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Cole/Agtor	12/13/03 1600	MO-020 Gritzcoff	12/13/03 1600
M.L. Bauchler M.G. Bauchler	12/18/03 0900	M.L. Bauchler M.G. Bauchler	12/18/03 0900
M.L. Bauchler M.G. Bauchler	12/18/03 1608	Joseph A. Rhineheart	12/18/03 1038
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(2) ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Copper, Nickel}; Mercury - 7471 - (CV)
(3) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Ammonia - 350.1; Total Cyanide - 9010; pH (Soil) - 9045; TOC - 9060
(4) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Cesium-134, Tin-126}; Isotopic Plutonium; Isotopic Uranium; Americium-241; Total Uranium
(5) Isotopic Thorium {Thorium-232}; Strontium-89,90 -- Total Sr; Nickel-63; Technetium-99; Carbon-14; Tritium - H3; Gamma Spec - Radium {Radium-226, Radium-228}
(6) ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Bismuth, Molybdenum}

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

JA-6003-618(03/03)

FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F03-020-014	Page 1 of 1

Collector Pope/Hughes/Pfister	Company Contact Steve Trent	Telephone No. 373-5869	Project Coordinator TRENT, SJ
Project Designation 216-B-26 Characterization Sampling - Soil Sampling	Sampling Location C3245 (27.5-30 ft)		SAF No. F03-020
Ice Chest No. GPP-03-013	Field Logbook No. HNF-N-3561	COA 119142ES10	Method of Shipment Govt. Vehicle
Shipped To Severn Trent Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A

Price Code 8N ① 8H

Data Turnaround ① 45 Days 30

Air Quality ☐

① MAB 12/18/03

POSSIBLE SAMPLE HAZARDS/REMARKS

Rad fu to B18527

Special Handling and/or Storage

Preservation			None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container			P	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)			1	1	1	1	1	1	1	1		
Volume			20mL	60mL	120mL	120mL	60mL	120mL	60mL	120mL		
SAMPLE ANALYSIS			Activity Scan	See item (1) in Special Instructions. MAB 12/18/03	See item (2) in Special Instructions.	Chromium Hex - 7196; NO2/NO3 - 353.1	See item (3) in Special Instructions.	See item (4) in Special Instructions. MAB 12/18/03	See item (5) in Special Instructions.	See item (6) in Special Instructions. MAB 12/18/03		
Sample No.	Matrix *	Sample Date	Sample Time									
B183M6	SOIL	12/13/03	0909	X	X	X	X	X	X	X	X	

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JS Pope/ASPfister	12/13/03 1600	MV-021 Fritzhoff	12/13/03 1600
M.G. Bauchler	12/18/03 0900	M.G. Bauchler	12/18/03 0900
M.G. Bauchler	12/18/03 1028	<100 cpm A. Rhinehart	12/18/03 1028
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(2) ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Copper, Nickel}; Mercury - 7471 - (CV)
(3) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Ammonia - 350.1; Total Cyanide - 9010; pH (Soil) - 9045; TOC - 9060
(4) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Cesium-134, Tin-126}; Isotopic Plutonium; Isotopic Uranium; Americium-241; Total Uranium
(5) Isotopic Thorium {Thorium-232}; Strontium-89,90 -- Total Sr; Nickel-63; Technetium-99; Carbon-14; Tritium - H3; Gamma Spec - Radium {Radium-226, Radium-228}
(6) ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Bismuth, Molybdenum}

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6003-618(03/03)

WSCF LIQUID SCINTILLATION CALCULATIONS — Total Alpha/Total Beta

Customer ID: GPP Batch ID: TA121503 Date 12/16/2003

COUNT TIME 60 min a-eff 0.83
Bkgd cpm 14.10 alpha 24.42 beta b-eff 0.93 LSC # 2

WSCF ID	Sample ID	Total alpha pCi/g	MDC pCi/g	Uncert. %	Total Beta pCi/g	MDC pCi/g	Uncert. %
W030001153	B18527	-2.2	2.2	227%	11.3	2.6	61%
W030001154	B18528	-1.2	2.4	446%	13.1	2.8	57%
W030001155	B18529	-0.9	2.3	570%	20.4	2.7	38%

u to B183m4/B183m6
B183m7
B183m9

	TA (dpm/mL)	%Rec	TB (dpm/mL)	%Rec
CAL CHECK	106.3	100.1%	139.4	122.9%

Comments:

Entered by: _____ Date _____

Reviewed by: [signature] Date 12/16/03

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 12/18/03 @ 10:28 AM

Client: FHI SDG #: W04233 NA [ ] SAF #: F03-020 NA [ ]

Work Order Number: J3480214 Chain of Custody # F03-020-014

Shipping Container ID: GAP-03-013 Air Bill # NA

1. Custody Seals on shipping container intact? NA [ ] Yes [X] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [X] No [ ]
3. Chain of Custody record present? Yes [X] No [ ]
4. Cooler temperature: _____ NA [X] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [X]
6. Number of samples in shipping container: 3
7. Sample holding times exceeded? NA [X] Yes [ ] No [ ]
8. Samples have:
   - ___ tape
   - [X] custody seals
   - [X] hazard labels
   - [X] appropriate samples labels
9. Samples are:
   - [X] in good condition
   - ___ broken
   - ___ leaking
   - ___ have air bubbles (Only for samples requiring head space)
10. Sample pH taken? NA [X] pH<2 [ ] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [X] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [X]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: April Richard Date: 12/18/03

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

1/13/2004 4:02:49 PM

Sample Preparation/Analysis

Balance Id:1120373922,~~112037392214-A~~ 2-1-1504

108302, FLUOR HANFORD IC , Flour
Hanford Inc

6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SX Americium-241 by Alpha Spec
5I CLIENT: HANFORD

Pipet #:

Report Due: 01/16/2004 W04233

Sep1 DT/Tm Tech:

Batch: 3353386 SOIL pCi/g PM, Quote: BG2, 50639

Sep2 DT/Tm Tech:

SEQ Batch, Test: 3353390, 6ISO 3353390, 6ISO

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit (5)	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AF J3L180214-1-SAMP		1.04g,in	patb3284 12/27/03 12/03/03,r		200			
12/13/2003 09:09	(1g)	AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-1-AX-X J3L180214-1-DUP		1.0g,in	patb3285 12/27/03 12/03/03,r					
12/13/2003 09:09	(1g)	AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F64HF-1-AA-B J3L190000-386-BLK		2.0g,in	patb3286 12/27/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
4 F64HF-1-AC-C J3L190000-386-LCS		2.0g,in	pasi0045 12/10/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
5 F64HF-1-AD-BX J3L190000-386-MBLK		2.03g,in	patb3283 12/27/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
6 F64HF-1-AE-CM J3L190000-386-MLCS		1.99g,in	pasi0046 12/10/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

1/13/2004 4:02:51 PM

Sample Preparation/Analysis

6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SX Americium-241 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922,~~1120373922,1120~~ 2/15/04

Pipet #:

Report Due: 01/16/2004

Sep1 DT/Tm Tech:

Batch: 3353386 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

Comments: Received aliquots designated in parenthesis. 2-15-04
Ottawa sand used for samples F04HF BY & CM. 2-15-04
Samples were muffled. 2-15-04

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AF-SAMP Constituent List:
Am-241 RDL:1 pCi/g LCL:70 UCL:130 RPD:35 AM-243 RDL: pCi/g LCL:20 UCL:105 RPD:35

F64HF1AA-BLK:
Am-241 RDL:1 pCi/g LCL: UCL: RPD: AM-243 RDL: pCi/g LCL:20 UCL:105 RPD:35

F64HF1AC-LCS:
Am-241 RDL:1 pCi/g LCL:70 UCL:130 RPD:35 AM-243 RDL: pCi/g LCL:20 UCL:105 RPD:35

F64HF1AD-MBLK:
Am-241 RDL:1 pCi/g LCL: UCL: RPD: AM-243 RDL: pCi/g LCL:20 UCL:105 RPD:35

F64HF1AE-MLCS:
Am-241 RDL:1 pCi/g LCL:70 UCL:130 RPD:35 AM-243 RDL: pCi/g LCL:20 UCL:105 RPD:35

F61MP1AF-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
F64HF1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
F64HF1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
F64HF1AD-MBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
F64HF1AE-MLCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/27/04 11:17:23 AM

ICOC Fraction Transfer/Status Report

ByDate: 12/28/03, 1/28/04, Batch: '3353386', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353386						
AC		CalcC	WAGNERJ	12/30/03 10:34:14		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:30 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 3:53:14 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	InPrep2	12/30/03 10:34:14 AM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	Prep2C	1/15/04 10:57:50 AM	RICH-RC-5019 REVISION 4
SC			RiceL	InSep1	1/16/04 6:51:39 AM	RICH-RC-5080 REVISION 1
SC			RiceL	Sep1C	1/21/04 10:27:52 AM	RICH-RC-5080 REVISION 1
SC			McPHERONC	Sep2C	1/22/04 2:43:48 PM	RICH-RC-5003 REVISION 4
SC			BlackCL	InCnt1	1/22/04 2:54:29 PM	RICH-RD-0008 REVISION 2
SC			BlackCL	CalcC	1/23/04 7:34:56 PM	RICH-RD-0008 REVISION 2
AC			WAGNERJ	1/15/04 10:57:50 AM		
AC			RiceL	1/16/04 6:51:39 AM		
AC			RiceL	1/21/04 10:27:52 AM		
AC			McPHERONC	1/22/04 2:43:48 PM		
AC			BlackCL	1/22/04 2:54:29 PM		
AC			BlackCL	1/23/04 7:34:56 PM		

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AC: Accepting Entry; SC: Status Change

1/13/2004 4:01:15 PM

Sample Preparation/Analysis

Balance Id:1120373922

108302, FLUOR HANFORD IC , Flour
Hanford Inc

6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

Report Due: 01/16/2004 W04233

Sep1 DT/Tm Tech:

Batch: 3353390 SOIL pCi/g PM, Quote: BG2, 50639

Sep2 DT/Tm Tech:

SEQ Batch, Test: 3353386, 6ISX 3353386, 6ISX All Tests: 3353376 88OV, 3353377 CHTH, 3353379 ATS6, 3353380 ANS5, 3353382 AFS4, 3353383 5SS3, 3353385 9RS1, 3353386 6ISX, 3353387 7ZSS, 3353388 7SSR, 3353390 6ISO, 3353391 AXTA,

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	(g) Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AE J3L180214-1-SAMP		1.04g,in	patb3284 12/27/03 12/03/03,r		200			
12/13/2003 09:09 (1g)		AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-1-A3-X J3L180214-1-DUP		1.0g,in	patb3285 12/27/03 12/03/03,r					
12/13/2003 09:09 (1g)		AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F64JA-1-AA-B J3L190000-390-BLK		2.0g,in	patb3286 12/27/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
4 F64JA-1-AC-C J3L190000-390-LCS		2.0g,in	pasi0045 12/10/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
5 F64JA-1-AD-BX J3L190000-390-MBLK		2.03g,in	patb3283 12/27/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
6 F64JA-1-AE-CM J3L190000-390-MLCS		1.99g,in	pasi0046 12/10/03 12/03/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

1/13/2004 4:01:18 PM

Sample Preparation/Analysis

6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

Report Due: 01/16/2004

Sep1 DT/Tm Tech:

Batch: 3353390 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

Comments: Reduced aliquots targeted in parentheses. JL 1-15-04
Ottawa Sand used for Samples F64JA BX & CM. JL 1-15-04
Samples were muffled. JL 1-15-04

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AE-SAMP Constituent List:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						

F64JA1AA-BLK:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						

F64JA1AC-LCS:

PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

F64JA1AD-MBLK:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						

F64JA1AE-MLCS:

PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

F61MP1AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

F64JA1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

F64JA1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

F64JA1AD-MBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

F64JA1AE-MLCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/21/04 11:14:39 AM

ICOC Fraction Transfer/Status Report

ByDate: 12/22/03, 1/22/04, Batch: '3353390', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353390						
AC		CalcC	SCHERRT	12/22/03 1:56:48 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:48 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 3:53:30 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	InPrep2	12/30/03 10:33:49 AM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	Prep2C	1/15/04 10:58:00 AM	RICH-RC-5019 REVISION 4
SC			RiceL	InSep1	1/16/04 6:51:52 AM	RICH-RC-5080 REVISION 1
SC			RiceL	Sep1C	1/19/04 3:13:09 PM	RICH-RC-5080 REVISION 1
SC			McPHERONC	Sep2C	1/20/04 9:40:22 AM	RICH-RC-5039 REVISION 3
SC			HUGHESJ	InCnt1	1/20/04 10:45:56 AM	RICH-RD-0008 REVISION 2
SC			BlackCL	CalcC	1/20/04 8:25:50 PM	RICH-RD-0008 REVISION 2
AC			SCHERRT	12/23/03 3:53:30 PM		
AC			WAGNERJ	12/30/03 10:33:49		
AC			WAGNERJ	1/15/04 10:58:00 AM		
AC			RiceL	1/16/04 6:51:52 AM		
AC			RiceL	1/19/04 3:13:09 PM		
AC			McPHERONC	1/20/04 9:40:22 AM		
AC			HUGHESJ	1/20/04 10:45:56 AM		
AC			BlackCL	1/20/04 8:25:50 PM		

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AC: Accepting Entry; SC: Status Change

1/6/2004 10:48:16 AM

Sample Preparation/Analysis

Balance Id:1120373922

108302, FLUOR HANFORD IC , Flour
Hanford Inc

9R Thiso PrpRC5013/RC5019, SepRC5084(5003)
S1 Thorium-228,230,232 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

Report Due: 01/16/2004 W04233

Sep1 DT/Tm Tech:

Batch: 3353385 SOIL pCi/g **PM, Quote: BG2, 50639**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AH J3L180214-1-SAMP		0.99g,in	THTC6657 12/31/03 12/09/03,r		200			
12/13/2003 09:09	(1g)	AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-1-AW-X J3L180214-1-DUP		1.05g,in	THTC6658 12/31/03 12/09/03,r					
12/13/2003 09:09	(1g)	AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F64G5-1-AA-B J3L190000-385-BLK		2.0g,in	THTC6659 12/31/03 12/09/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
4 F64G5-1-AC-C J3L190000-385-LCS		2.0g,in	THSI0684 12/31/03 12/09/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

Comments: Reduced aliquots targeted in parenthesis. Jn 1-8-04
Samples were muffled. Jn 1-8-04

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AH-SAMP Constituent List:

Th-228	RDL:1	pCi/g	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35
Th-232	RDL:1	pCi/g	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

F64G51AA-BLK:

Th-228	RDL:1	pCi/g	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/g	LCL:	UCL:	RPD:
Th-232	RDL:1	pCi/g	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

1/21/04 11:04:32 AM

ICOC Fraction Transfer/Status Report

ByDate: 12/22/03, 1/22/04, Batch: '3353385', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353385						
AC		CalcC	SCHERRT	12/22/03 1:56:25 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:25 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 3:53:09 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	InPrep2	12/30/03 10:34:20 AM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	Prep2C	1/13/04 2:27:59 PM	RICH-RC-5019 REVISION 4
SC			RiceL	InSep1	1/14/04 8:32:00 AM	RICH-RC-5084 REVISION 0
SC			RiceL	Sep1C	1/20/04 6:36:45 AM	RICH-RC-5084 REVISION 0
SC			McPHERONC	Sep2C	1/20/04 9:39:33 AM	RICH-RC-5003 REVISION 4
SC			HUGHESJ	InCnt1	1/20/04 10:46:29 AM	RICH-RD-0008 REVISION 2
SC			BlackCL	CalcC	1/20/04 8:25:38 PM	RICH-RD-0008 REVISION 2
AC			SCHERRT	12/23/03 3:53:09 PM		
AC			WAGNERJ	12/30/03 10:34:20		
AC			WAGNERJ	1/13/04 2:27:59 PM		
AC			RiceL	1/14/04 8:32:00 AM		
AC			RiceL	1/20/04 6:36:45 AM		
AC			McPHERONC	1/20/04 9:39:33 AM		
AC			HUGHESJ	1/20/04 10:46:29 AM		
AC			BlackCL	1/20/04 8:25:38 PM		

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AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 9

ICOCFractions v4.708

1/6/2004 11:05:00 AM

Sample Preparation/Analysis

108302, FLUOR HANFORD IC , Flour
Hanford Inc

7S Uiso PrpRC5013/RC5019, SepRC5079(5039)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922
Pipet #: _____

Report Due: 01/16/2004 W04233

Batch: 3353388 SOIL pCi/g PM, Quote: BG2, 50639

SEQ Batch, Test: None

Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AA J3L180214-1-SAMP		1.03g,in	UITC9948 08/15/03 06/16/03,r		200			
12/13/2003 09:09	(1g)	AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-1-A2-X J3L180214-1-DUP		1.01g,in	UITC9949 08/15/03 06/16/03,r					
12/13/2003 09:09	(1g)	AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F64H6-1-AA-B J3L190000-388-BLK		2.0g,in	UITC9950 08/15/03 06/16/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
4 F64H6-1-AC-C J3L190000-388-LCS		2.0g,in	UISH0224 12/18/03 08/11/03,r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

Comments: Reduced aliquots targeted in parenthesis. 1-8-04
Samples were muffled. 1-8-04

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AA-SAMP Constituent List:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/g	LCL:	UCL:	RPD:

F64H61AA-BLK:

U-232	RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234	RDL:1	pCi/g	LCL:	UCL:	RPD:
U-235	RDL:1	pCi/g	LCL:	UCL:	RPD:	U-238	RDL:1	pCi/g	LCL:	UCL:	RPD:

Sample Preparation/Analysis

7S Uiso PrpRC5013/RC5019, SepRC5079(5039)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

Report Due: 01/16/2004

Sep1 DT/Tm Tech:

Batch: 3353388 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

F64H61AC-LCS:
U-232 RDL: pCi/g LCL:20 UCL:105 RPD:35 Uranium RDL: pCi/g LCL:70 UCL:130 RPD:35

F61MP1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
F64H61AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
F64H61AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/21/04 11:04:45 AM

ICOC Fraction Transfer/Status Report

ByDate: 12/22/03, 1/22/04, Batch: '3353388', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353388						
AC		CalcC	SCHERRT	12/22/03 1:56:42 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:42 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 3:53:25 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	InPrep2	12/30/03 10:33:56 AM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	Prep2C	1/13/04 2:28:14 PM	RICH-RC-5019 REVISION 4
SC			RiceL	InSep1	1/14/04 8:32:14 AM	RICH-RC-5079 REVISION 1
SC			RiceL	Sep1C	1/16/04 1:26:42 PM	RICH-RC-5079 REVISION 1
SC			McPHERONC	Sep2C	1/20/04 9:40:14 AM	RICH-RC-5039 REVISION 3
SC			HUGHESJ	InCnt1	1/20/04 10:46:02 AM	RICH-RD-0008 REVISION 2
SC			BlackCL	CalcC	1/20/04 5:28:07 PM	RICH-RD-0008 REVISION 2
AC			SCHERRT	12/23/03 3:53:25 PM		
AC			WAGNERJ	12/30/03 10:33:56		
AC			WAGNERJ	1/13/04 2:28:14 PM		
AC			RiceL	1/14/04 8:30:09 AM		
AC			RiceL	1/14/04 8:32:14 AM		
AC			RiceL	1/16/04 1:26:42 PM		
AC			McPHERONC	1/20/04 9:40:14 AM		
AC			HUGHESJ	1/20/04 10:46:02 AM		
AC			BlackCL	1/20/04 5:28:07 PM		

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AC: Accepting Entry; SC: Status Change

12/23/2003 2:39:43 PM

Sample Preparation/Analysis

Balance Id:1120421763

108302, FLUOR HANFORD IC , Flour
Hanford Inc

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
5I CLIENT: HANFORD

Pipet #: N/A

Report Due: 01/16/2004 W004233

Sep1 DT/Tm Tech:

Batch: 3353391 SOIL pCi/g PM, Quote: BG2, 50639

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,SCHERRT

(9)

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AL J3L180214-1-SAMP		66.9g,in				S25	1000	G1	0331	12/25/2003
12/13/2003 09:09		AmtRec: 120G,60G,20ML		#Containers: 3				Scr Rst:	Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-1-A4-X J3L180214-1-DUP		66.9g,in						G4	0549	1/13/04
12/13/2003 09:09		AmtRec: 120G,60G,20ML		#Containers: 3				Scr Rst:	Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F64JD-1-AA-B J3L190000-391-BLK		52.0g,in Blank Fine Ottawa Sand						G1 12/28	0544	12/27/03
12/13/03 ~~12/13/2003 09:09~~ JH/12/23/03		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:
4 F64JD-1-AC-C J3L190000-391-LCS		26.61g,in	CAL3122 01/01/03 01/01/02,r					G8 1/14 ~~G5~~ 1/14/03	0455	1/14/04 ~~1/13/04~~ 1/14/04
12/11/03 L1/1/02 ~~12/13/2003 09:09~~ JH/12/23/03 S1-1704		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:

Comments: Not Enough sample recount DUP on different ditector JH 12/23/03
J 12.23.03

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AL-SAMP Constituent List:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Eu-154	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:

F64JD1AA-BLK:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:

Sample Preparation/Analysis

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
5I CLIENT: HANFORD

Report Due: 01/16/2004

Batch: 3353391 pCi/g

SEQ Batch, Test: None

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
Eu-154 RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
F64JD1AC-LCS:										
Cs-137 RDL:0.1	pCi/g	LCL:70	UCL:130	RPD:35	Cs-137DA	RDL:0.1	pCi/g	LCL:70	UCL:130	RPD:35
K-40 RDL:--	pCi/g	LCL:70	UCL:130	RPD:35	Ra-226	RDL:0.1	pCi/g	LCL:70	UCL:130	RPD:35
RA-228 RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35	RA-228DA	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35
U-238 RDL:	pCi/g	LCL:70	UCL:130	RPD:35						

F61MP1AL-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

F64JD1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

F64JD1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

1/17/04 3:56:11 PM

ICOC Fraction Transfer/Status Report

ByDate: 12/18/03, 1/18/04, Batch: '3353391', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353391						
AC		CalcC	SCHERRT	12/22/03 1:56:54 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:54 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 3:51:47 PM	RICH-RC-5013 REVISION 4
SC			DAWKINSO	InCnt1	12/23/03 4:50:51 PM	RICH-RD-0007 REVISION 4
SC			BlackCL	CalcC	1/15/04 12:30:15 PM	RICH-RD-0007 REVISION 4
AC			SCHERRT	12/23/03 3:51:47 PM		JWdONE
AC			DAWKINSO	12/23/03 4:50:51 PM		
AC			BlackCL	1/15/04 12:30:15 PM		

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AC: Accepting Entry; SC: Status Change

SEVERN TRENT STL

*** RE-ANALYSIS REQUEST ***

DUE DATE 1-16-04

CUSTOMER FHI

ANALYSIS TSr

MATRIX soil

LOT NUMBER J3L180214

SAMPLE DELIVERY GROUP W104233

OLD BATCH NUMBER 3353377

NEW BATCH NUMBER 4016367

LAB SAMPLE ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1) F61MP14C	low yields
2) F61MP14D x	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	
16)	
17)	
18)	
19)	
20)	
LAB QC ID	Assigned with new batch.

1/17/2004 1:30:08 PM

Sample Preparation/Analysis

Balance Id:1120373922 #02

108302, FLUOR HANFORD IC , Flour
Hanford Inc

CH Sr-Total PrpRC5013, SepRC5006
TH Total Strontium by GPC
5I CLIENT: HANFORD

Pipet #: NA

Report Due: 01/16/2004

Sep1 DT/Tm Tech: 1-19-04 6:50 PM

Batch: 4016367 SOIL pCi/g PM, Quote: BG2, 50639

Sep2 DT/Tm Tech: NA

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry (mg)	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-2-AC J3L180214-1-SAMP		6.05g,in	SRTA10588 10/03/03 09/11/03,r			62.6	50	3K	1810	1/20/04
12/13/2003 09:09		AmtRec: 120G,60G,20ML		#Containers: 3				Scr Rst:	Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-2-AP-X J3L180214-1-DUP		6.03g,in	SRTA10589 10/03/03 09/11/03,r			60.8		3B		
12/13/2003 09:09		AmtRec: 120G,60G,20ML		#Containers: 3				Scr Rst:	Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F75VX-1-AA-B J4A160000-367-BLK		6.0g,in	SRTA10590 10/03/03 09/11/03,r			77.3		3C		
12/13/2003 09:09		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:
4 F75VX-1-AC-C J4A160000-367-LCS		6.0g,in	STSB0826 12/19/03 11/11/03,r			78.9		3D		
12/13/2003 09:09		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP2AC-SAMP Constituent List:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

F75VX1AA-BLK:

Sr-90	RDL:1	pCi/g	LCL:	UCL:	RPD:

F75VX1AC-LCS:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

F61MP2AC-SAMP Calc Info:

1/21/04 11:04:00 AM

ICOC Fraction Transfer/Status Report

ByDate: 12/22/03, 1/22/04, Batch: '4016367', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
4016367						
AC		CalcC	WAGNERJ	1/17/04 12:25:17 PM		
SC			AndersonP	IsBatched	1/16/04 3:18:32 PM	ICOC_RADCALC v4.708
SC			WAGNERJ	Prep2C	1/17/04 12:25:17 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	Prep2C	1/17/04 1:26:07 PM	RICH-RC-5013 REVISION 4
SC			FABREM	InSep1	1/17/04 2:25:55 PM	RICH-RC-5006 REVISION 5
SC			FABREM	Sep1C	1/20/04 1:19:40 PM	RICH-RC-5006 REVISION 5
SC			BlackCL	InCnt1	1/20/04 3:05:12 PM	RICH-RD-0003 REVISION 3
SC			BlackCL	CalcC	1/20/04 8:15:42 PM	RICH-RD-0003 REVISION 3
AC			WAGNERJ	1/17/04 1:26:07 PM		
AC			FABREM	1/17/04 2:25:55 PM		
AC			FABREM	1/20/04 1:19:40 PM		
AC			BlackCL	1/20/04 3:05:12 PM		
AC			BlackCL	1/20/04 8:15:42 PM		

AC: Accepting Entry; SC: Status Change

12/19/2003 11:32:43 AM

Sample Preparation/Analysis

108302, FLUOR HANFORD IC , Flour
Hanford Inc

5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
5I CLIENT: HANFORD

Balance Id: 029
Pipet #:
Sep1 DT/Tm Tech: 12-22-03am
Sep2 DT/Tm Tech:
Prep Tech:

Report Due: 01/16/2004 WOH233

Batch: 3353383 **SOIL** **pCi/g** **PM, Quote: BG2, 50639**

SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AM								
J3L180214-1-SAMP								
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3			Scr Rst:	Alpha:	Beta:
2 F61MP-1-AV-X								
J3L180214-1-DUP								
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3			Scr Rst:	Alpha:	Beta:
3 F64G2-1-AA-B								
J3L190000-383-BLK								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
4 F64G2-1-AC-C								
J3L190000-383-LCS								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
5 F64G2-1-AD-BN								
J3L190000-383-IBLK								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AM-SAMP Constituent List:
C-14 RDL:50 pCi/g LCL:70 UCL:130 RPD:35

12/19/2003 11:32:43 AM

Sample Preparation/Analysis

5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
5I CLIENT: HANFORD

Balance Id: 029
Pipet #:
Sep1 DT/Tm Tech: 12-22-03 pm
Sep2 DT/Tm Tech:
Prep Tech:

Report Due: 01/16/2004

Batch: 3353383 pCi/g

SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

```
F64G21AA-BLK:
 C-14        RDL:50        pCi/g     LCL:       UCL:       RPD:
F64G21AC-LCS:
 C-14        RDL:50        pCi/g     LCL:70     UCL:130    RPD:35
F64G21AD-IBLK:
 C-14        RDL:50        pCi/g     LCL:       UCL:       RPD:
F61MP1AM-SAMP Calc Info:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
F64G21AA-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
F64G21AC-LCS:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
F64G21AD-IBLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```


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12/29/03 11:00:27 AM

ICOC Fraction Transfer/Status Report

ByDate: 11/29/03, 12/30/03, Batch: '3353383', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353383						
AC		CalcC	SCHERRT	12/22/03 1:54:51 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:54:51 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/22/03 2:13:08 PM	RICH-RC-5013 REVISION 4
SC			McDowellD	InSep1	12/22/03 4:22:25 PM	RICH-RC-5022 REVISION 3
SC			McDowellD	Sep1C	12/23/03 10:59:56 AM	RICH-RC-5022 REVISION 3
SC			BlackCL	InCnt1	12/23/03 1:23:27 PM	RICH-RD-0001 REVISION 2
SC			BlackCL	CalcC	12/26/03 6:36:56 AM	RICH-RD-0001 REVISION 2
AC			SCHERRT	12/22/03 2:13:08 PM		jwDone
AC			McDowellD	12/22/03 4:22:25 PM		
AC			McDowellD	12/23/03 10:59:56		
AC			BlackCL	12/23/03 1:23:27 PM		
AC			BlackCL	12/26/03 6:36:56 AM		rEVISION 4

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AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.708

1/6/2004 8:17:35 AM

Sample Preparation/Analysis

Balance Id:1120373922 / #21

108302, FLUOR HANFORD IC , Flour
Hanford Inc

AF Ni-63 PrpRC5013/5019, SepRC5069
S4 Nickel by ICP and Nickel-63 by Liquid Scint

Pipet #:

Report Due: 01/16/2004

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 3353382 SOIL pCi/g PM, Quote: BG2, 50639

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AD J3L180214-1-SAMP			0.2501g,in	0.25g	NITA1778 12/31/03 12/02/02,r		100			
12/13/2003 09:09		AmtRec: 120G,60G,20ML		#Containers: 3				Scr Rst:	Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-1-AU-X J3L180214-1-DUP			0.2496g,in	0.25g	NITA1779 12/31/03 12/02/02,r					
12/13/2003 09:09		AmtRec: 120G,60G,20ML		#Containers: 3				Scr Rst:	Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F64G0-1-AA-B J3L190000-382-BLK			0.25g,in	0.25g	NITA1780 12/31/03 12/02/02,r					
12/13/2003 09:09		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:
4 F64G0-1-AC-C J3L190000-382-LCS			0.25g,in	0.25g	NISA0562 03/25/03					
12/13/2003 09:09		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:
5 F64G0-1-AD-BN J3L190000-382-IBLK										
12/13/2003 09:09		AmtRec:		#Containers: 1				Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AD-SAMP Constituent List:
Ni-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

Sample Preparation/Analysis

AF Ni-63 PrpRC5013/5019, SepRC5069
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

Report Due: 01/16/2004

Batch: 3353382 pCi/g

SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

```
F64G01AA-BLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
F64G01AC-LCS:
  Ni-63        RDL:30          pCi/g     LCL:70      UCL:130     RPD:35
F64G01AD-IBLK:
  Ni-63        RDL:30          pCi/g     LCL:        UCL:        RPD:
F61MP1AD-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64G01AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64G01AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64G01AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

1/20/04 1:44:37 PM

ICOC Fraction Transfer/Status Report

ByDate: 12/21/03, 1/21/04, Batch: '3353382', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353382						
AC		CalcC	SCHERRT	12/22/03 1:56:19 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:19 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 3:53:03 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	InPrep2	12/30/03 10:34:27 AM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	Prep2C	1/8/04 1:32:21 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	InSep1	1/16/04 11:19:55 AM	RICH-RC-5069 REVISION 4
SC			WAGNERJ	Sep1C	1/16/04 2:51:00 PM	RICH-RC-5069 REVISION 4
SC			HUGHESJ	InCnt1	1/16/04 3:17:01 PM	RICH-RD-0001 REVISION 2
SC			HARRIESE	InTrace	1/20/04 8:47:43 AM	BHI-MT-0001 REVISION 1
SC			HARRIESE	TraceC	1/20/04 8:47:58 AM	BHI-MT-0001 REVISION 1
SC			HUGHESJ	CalcC	1/20/04 9:06:13 AM	RICH-RD-0001 REVISION 2
AC			SCHERRT	12/23/03 3:53:03 PM		
AC			WAGNERJ	12/30/03 10:34:27		
AC			WAGNERJ	1/8/04 1:32:21 PM		
AC			WAGNERJ	1/16/04 11:19:55 AM		
AC			WAGNERJ	1/16/04 2:51:00 PM		
AC			HUGHESJ	1/16/04 3:17:01 PM		
AC			HARRIESE	1/20/04 8:47:43 AM		
AC			HARRIESE	1/20/04 8:47:58 AM		
AC			HUGHESJ	1/20/04 9:06:13 AM		

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AC: Accepting Entry; SC: Status Change

12/19/2003 11:32:42 AM

Sample Preparation/Analysis

108302, FLUOR HANFORD IC , Flour
Hanford Inc

AN Tc-99 Prp/SepRC5013/5078
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Report Due: 01/16/2004 W04233

Batch: 3353380 SOIL pCi/g PM, Quote: BG2, 50639

SEQ Batch, Test: None

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AJ J3L180214-1-SAMP								
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3			Scr Rst:	Alpha:	Beta:
2 F61MP-1-AR-S J3L180214-1-MS								
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3			Scr Rst:	Alpha:	Beta:
3 F61MP-1-AT-X J3L180214-1-DUP								
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3			Scr Rst:	Alpha:	Beta:
4 F64GR-1-AA-B J3L190000-380-BLK								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
5 F64GR-1-AC-C J3L190000-380-LCS								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
6 F64GR-1-AD-BN J3L190000-380-IBLK								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:

Sample Preparation/Analysis

AN Tc-99 Prp/SepRC5013/5078
S5 Technetium-99 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

Report Due: 01/16/2004

Batch: 3353380 pCi/g

SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

Comments:

```
ll Clients for Batch:
   108302, FLUOR HANFORD IC                    Flour Hanford Inc          ,  BG2, 50639

61MP1AJ-SAMP Constituent List:
 Tc-99       RDL:15        pCi/g     LCL:70      UCL:130     RPD:35
61MP1AR-MS Constituent List:

64GR1AA-BLK:
 Tc-99       RDL:15        pCi/g     LCL:        UCL:        RPD:
64GR1AC-LCS:
 Tc-99       RDL:15        pCi/g     LCL:70      UCL:130     RPD:35
64GR1AD-IBLK:
 Tc-99       RDL:15        pCi/g     LCL:        UCL:        RPD:
61MP1AJ-SAMP Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
61MP1AR-MS Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
64GR1AA-BLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
64GR1AC-LCS:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
64GR1AD-IBLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

1/17/04 2:12:43 PM

ICOC Fraction Transfer/Status Report

ByDate: 12/18/03, 1/18/04, Batch: '3353380', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353380						
AC		**CalcC**	**SCHERRT**	12/22/03 1:56:07 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:07 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 10:21:29 AM	RICH-RC-5013 REVISION 4
SC			SILLIMANT	Sep1C	1/15/04 12:43:16 PM	RICH-RC-5078 REVISION 2
SC			SILLIMANT	Sep1C	1/15/04 12:44:54 PM	RICH-RC 5078 REVISION2
SC			HUGHESJ	InCnt1	1/15/04 12:58:44 PM	RICH-RD-0001 REVISION 2
SC			BlackCL	CalcC	1/16/04 8:18:45 AM	RICH-RD-0001 REVISION 2
AC			**SCHERRT**	12/23/03 10:21:29		jwDone
AC			**SILLIMANT**	1/15/04 12:43:16 PM		
AC			**SILLIMANT**	1/15/04 12:44:54 PM		
AC			**HUGHESJ**	1/15/04 12:58:44 PM		
AC			**BlackCL**	1/16/04 8:18:45 AM		

80

AC: Accepting Entry; SC: Status Change

12/19/2003 11:32:42 AM

Sample Preparation/Analysis

Balance Id: 028

108302, FLUOR HANFORD IC , Flour
Hanford Inc

AT H-3 Prp/SepRC5037
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Pipet #:

Report Due: 01/16/2004 WO4233

Sep1 DT/Tm Tech: 12-22-03

Batch: 3353379 SOIL pCi/g PM, Quote: BG2, 50639

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AK J3L180214-1-SAMP								
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3			Scr Rst:	Alpha:	Beta:
2 F61MP-1-AQ-X J3L180214-1-DUP								
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3			Scr Rst:	Alpha:	Beta:
3 F64GL-1-AA-B J3L190000-379-BLK								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
4 F64GL-1-AC-C J3L190000-379-LCS								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
5 F64GL-1-AD-BN J3L190000-379-IBLK								
12/13/2003 09:09		AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AK-SAMP Constituent List:
H-3 RDL:400 pCi/g LCL:70 UCL:130 RPD:35

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2
Richland Wa. r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

WO Cnt: 5
ICOC v4.708

12/19/2003 11:32:42 AM

Sample Preparation/Analysis

AT H-3 Prp/SepRC5037
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Balance Id: 028
Pipet #:
Sep1 DT/Tm Tech: 12-28-03
Sep2 DT/Tm Tech:
Prep Tech:

Report Due: 01/16/2004

Batch: 3353379 pCi/g

SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

```
F64GL1AA-BLK:
  H-3          RDL:400        pCi/g     LCL:        UCL:        RPD:
F64GL1AC-LCS:
  H-3          RDL:400        pCi/g     LCL:70      UCL:130     RPD:35
F64GL1AD-IBLK:
  H-3          RDL:400        pCi/g     LCL:        UCL:        RPD:
F61MP1AK-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64GL1AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64GL1AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64GL1AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

12/29/03 11:00:19 AM

ICOC Fraction Transfer/Status Report

ByDate: 11/29/03, 12/30/03, Batch: '3353379', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353379						
AC		CalcC	SCHERRT	12/22/03 1:54:44 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:54:44 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/22/03 2:13:15 PM	RICH-RC-5013 REVISION 4
SC			McDowellD	InSep1	12/22/03 4:21:59 PM	RICH-RC-5037 REVISION 3
SC			McDowellD	Sep1C	12/23/03 11:00:25 AM	RICH-RC-5037 REVISION 3
SC			BlackCL	InCnt1	12/23/03 1:25:43 PM	RICH-RD-0001 REVISION 2
SC			BlackCL	CalcC	12/26/03 6:37:02 AM	RICH-RD-0001 REVISION 2
AC			SCHERRT	12/22/03 2:13:15 PM		jwDone
AC			McDowellD	12/22/03 4:21:59 PM		
AC			McDowellD	12/23/03 11:00:25		
AC			BlackCL	12/23/03 1:25:43 PM		
AC			BlackCL	12/26/03 6:37:02 AM		

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AC: Accepting Entry; SC: Status Change

1/6/2004 11:13:18 AM

Sample Preparation/Analysis

Balance Id:1120373922

108302, FLUOR HANFORD IC , Flour
Hanford Inc

7Z Unat_Laser PrpRC5013/RC5019, SepRC5015
SS Total Uranium by KPA

Pipet #: _____

Report Due: 01/16/2004 W04233

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 3353387 SOIL ug/g

PM, Quote: BG2, 50639

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date
1 F61MP-1-AN J3L180214-1-SAMP		1.0g,in						
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
2 F61MP-1-A0-S J3L180214-1-MS		1.0g,in	UNSI0715 05/20/03 10/05/02 r					
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
3 F61MP-1-A1-X J3L180214-1-DUP		1.0g,in						
12/13/2003 09:09		AmtRec: 120G,60G,20ML	#Containers: 3				Scr Rst: Alpha: 8.10E+01 pCi/g	Beta: 2.51E+01 pCi/g
4 F64HR-1-AA-B J3L190000-387-BLK		1.0g,in						
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:
5 F64HR-1-AC-C J3L190000-387-LCS		1.0g,in	UNSI0716 05/20/03 10/05/02 r					
12/13/2003 09:09		AmtRec:	#Containers: 1				Scr Rst: Alpha:	Beta:

Comments: Samples were muffled. 9-1-8-001

All Clients for Batch:
108302, FLUOR HANFORD IC Flour Hanford Inc , BG2, 50639

F61MP1AN-SAMP Constituent List:
Uranium RDL:1 ug/g LCL:70 UCL:130 RPD:35

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2
Richland Wa r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

WO Cnt: 5
Prep_SamplePrep v4.6

Sample Preparation/Analysis

7Z Unal_Laser PrpRC5013/RC5019, SepRC5015
SS Total Uranium by KPA
5I CLIENT: HANFORD

Balance Id:1120373922
Pipet #: _____

Report Due: 01/16/2004

Sep1 DT/Tm Tech:

Batch: 3353387 ug/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date

```
F61MP1A0-MS Constituent List:

F64HR1AA-BLK:
  Uranium      RDL:1          ug/g      LCL:       UCL:       RPD:
F64HR1AC-LCS:
  Uranium      RDL:1          ug/g      LCL:70     UCL:130    RPD:35
F61MP1AN-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F61MP1A0-MS Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64HR1AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
F64HR1AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

1/15/04 4:40:00 PM

ICOC Fraction Transfer/Status Report

ByDate: 12/16/03, 1/16/04, Batch: '3353387', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3353387						
AC		Cnt1C	SCHERRT	12/22/03 1:56:36 PM		
SC			wagarr	IsBatched	12/19/03 11:32:16 AM	ICOC_RADCALC v4.708
SC			SCHERRT	InPrep	12/22/03 1:56:36 PM	RICH-RC-5013 REVISION 4
SC			SCHERRT	Prep1C	12/23/03 3:53:20 PM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	InPrep2	12/30/03 10:34:02 AM	RICH-RC-5013 REVISION 4
SC			WAGNERJ	Prep2C	1/13/04 4:16:30 PM	RICH-RC-5015 REVISION 3
SC			IOVINC	InCnt1	1/14/04 6:11:30 AM	RICH-RC-5058 REVISION 6
SC			IOVINC	Cnt1C	1/14/04 9:41:32 AM	RICH-RC-5058 REVISION 6
AC			SCHERRT	12/23/03 3:53:20 PM		
AC			WAGNERJ	12/30/03 10:34:02		
AC			WAGNERJ	1/13/04 4:16:30 PM		
AC			IOVINC	1/14/04 6:11:30 AM		
AC			IOVINC	1/14/04 9:41:32 AM		

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AC: Accepting Entry; SC: Status Change

SEVERN TRENT STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
www.stl-inc.com

ANALYTICAL REPORT

PROJECT NO. 216-B26 CHAR.

F03-020

Lot #: F3L190375
SDG #: W04233

JAN 2004
RECEIVED

Steve Trent

Fluor Hanford Inc
825 Jadwin Ave
Richland, WA 99352

SEVERN TRENT LABORATORIES, INC.

MWard

MARTI WARD
Project Manager

000001

January 19, 2004

SEVERN TRENT STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
www.stl-inc.com

January 19, 2004

STL LOT NUMBER: **F3L190375**
SDG: **W04233**

Steve Trent
Fluor Hanford Inc
825 Jadwin Ave
Richland, WA 99352

JAN 2004
RECEIVED

Dear Steve Trent,

This report contains the analytical results for the sample received under chain of custody by Severn Trent Laboratories (STL) on December 19, 2003. This sample is associated with your F03-020 SAF.

All applicable quality control procedures met method-specified acceptance criteria except as noted on the following page.

This report shall not be reproduced except in full, without the written approval of the laboratory. This report is incomplete without the Case Narrative. Results are reported "as received" (i.e. wet weight) unless otherwise noted.

If you have any questions, please feel free to call me at (314) 298-8566.

Sincerely,

Marti Ward

Marti Ward
Project Manager

cc: Project File

000002

SEVERN TRENT STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
www.stl-inc.com

STL LOT NUMBER: **F3L190375**
SDG: **W04233**
Case Narrative:

6010B Metals
The MS/MSD Aluminum, Iron, and Manganese recoveries are outside the established QC limits. The concentration of these metals in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

8270C Semivolatiles
The MS recovery for Hexachlorocyclopentadiene is (5.88%) outside the established QC limits. The MSD recovery of Hexachlorocyclopentadiene is 13.17%. The RPD for this compound is not within method acceptance criteria. The low recoveries in both the MS and MSD suggest a possible matrix interference. Method performance is demonstrated by acceptable LCS recovery. This was not a target compound for this SDG.

8015M TPH Diesel Range/Kerosene Range
The Method Blank surrogate recovery is outside acceptance limits. Samples associated with this method blank demonstrated acceptable surrogate recoveries indicating the surrogate excursion is isolated to the method blank and not indicative of the batch.

9060 TOC
The MS recovery for TOC is outside the established QC limits. A matrix interference is physically evident in the sample. Method performance is demonstrated by acceptable LCS recovery.

Leaders in Environmental Testing

Accredited in accordance with nelac
Severn Trent Laboratories, Inc.

SAMPLE SUMMARY

F3L190375

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
F65E0	001	B183M6	12/13/03	09:09

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

000004

METHODS SUMMARY

F3L190375

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Non-Aqueous	SW846 9045A	
Chloride	MCAWW 300.0A	MCAWW 300.0A
Extractable Petroleum Hydrocarbons	SW846 8015 MOD	SW846 3550
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Hexavalent Chromium	SW846 7196A	SW846 7196A/DI
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrate-Nitrite	MCAWW 353.1	
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1	MCAWW 350.1
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3550B
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Total Cyanide	SW846 9010A	SW846 9010A
Total Organic Carbon	SW846 9060	SW846 9060
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

000005

7794 SDG W04233

LOT# F3L190375

STL ST. LOUIS

FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F03-020-014	Page 1 of 1
Collector: Pope/Hughes/Pfister	Company Contact: Steve Trent; Telephone No.: 373-5869	Project Coordinator: TRENT, SJ	Price Code: ~~8N~~ 8H ① Data Turnaround: ① 45 Days 30
Project Designation: 216-B-26 Characterization Sampling - Soil Sampling	Sampling Location: C3245 (27.5-30 ft)	SAF No.: F03-020	Air Quality ☐
Ice Chest No.: ERC 02 010	Field Logbook No.: HNF-N-3561; COA: 119142ES10	Method of Shipment: ~~Govt. Vehicle~~ FED EX MAB 12/11/03 ① MAB 12/11/03	
Shipped To: Severn Trent Incorporated, ~~Richland~~ STLOUIS MAB 121803	Offsite Property No.: ~~N/A~~ MAB 121403 A040095	Bill of Lading/Air Bill No.: ~~N/A~~ MAB 121803	

POSSIBLE SAMPLE HAZARDS/REMARKS

Rad fu to B18527

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	Cool 4C	None	None	None	None		
Type of Container	P	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	20mL	60mL	120mL	120mL	60mL	120mL	60mL	120mL		
SAMPLE ANALYSIS	Activity Scan MAB 12/11/03	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196; NO2/NO3 - 353.1	See item (3) in Special Instructions.	See item (4) in Special Instructions. MAB 12/11/03	See item (5) in Special Instructions.	See item (6) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time							
B183M6	SOIL	12/13/03	0909	X	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/JS Pfister	12/13/03 1600	Received By/Stored In: MA-026 Fritz Hoff	12/13/03 1600
Relinquished By/Removed From: M.D. Bell, MD Bell	12/18/03 0900	Received By/Stored In: M.H. Bauchler M.H. Bauchler	12/18/03 0900
Relinquished By/Removed From: M.H. Bauchler M.H. Bauchler	12/18/03 0900	Received By/Stored In: Fed EX	
Relinquished By/Removed From: FED EX		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) Semi-VOA -- 8270A (Add-On) {Tributyl phosphate}; TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range, Total petroleum hydrocarbons - kerosene range}
(2) ICP Metals - 6010A (Supertrace) {Cadmium, Chromium, Lead, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Copper, Nickel}; Mercury - 7471 - (CV)
(3) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Ammonia - 350.1; Total Cyanide - 9010; pH (Soil) - 9045; TOC - 9060
(4) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Cesium-134, Tin-126}; Isotopic Plutonium; Isotopic Uranium; Americium-241; Total Uranium
(5) Isotopic Thorium {Thorium-232}; Strontium-89,90 -- Total Sr; Nickel-63; Technetium-99; Carbon-14; Tritium - H3; Gamma Spec - Radium {Radium-226, Radium-228}
(6) ICP Metals - 6010A (TAL) {Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Bismuth, Molybdenum}

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By: EC Wilson	Title: Sample Control	Date/Time: 121903 0930
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6003-618(03/03)

SDG# W04233

6

LOT# F3L190375

SDG# W04233

STL ST. LOUIS

WSCF LIQUID SCINTILLATION CALCULATIONS — Total Alpha/Total Beta

Customer ID: GPP Batch ID: TA121503 Date 12/16/2003

COUNT TIME 60 min
Bkgd cpm 14.10 alpha 24.42 beta
a-eff 0.83
b-eff 0.93
LSC # 2

WSCF ID	Sample ID	Total alpha pCi/g	MDC pCi/g	Uncert. %	Total Beta pCi/g	MDC pCi/g	Uncert. %
W030001153	B18527	-2.2	2.2	227%	11.3	2.6	61%
W030001154	B18528	-1.2	2.4	446%	13.1	2.8	57%
W030001155	B18529	-0.9	2.3	570%	20.4	2.7	38%

u to B183m4/B183m6
B183m7
B183m9

	TA (dpm/mL)	%Rec	TB (dpm/mL)	%Rec
CAL CHECK	105.3	100.1%	139.4	122.9%

Comments:

Entered by: _____ Date _____

Reviewed by: [signature] Date 12/16/03

00000007

J:\PREP\SPREADS\TOTACT\LIQUID\TAL1215A.WB1 16-Dec-2003 06:24:42 Page 1 of 1

7

STL ST. LOUIS

SEVERN TRENT STL

Lot No.: F3L190375

Condition Upon Receipt Form
St. Louis Laboratory

Client: Richland

Date: 121903 Time: 0930

Quote No:

Initiated by: EW

Shipper/No: Fed Ex (below)

COC/RFA Numbers: (below)

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see notes for explanation):

1.	Y N	Sample received in undamaged condition.	5.	Y N	Sample volume sufficient for analysis.
2.	Y N	Sample received within 4°C ± 2°C* EW 121903	6.	Y N	Sample received with Chain of Custody.
	EW 121903	Record temperature: ~~ambient~~ 2°	7.	Y N	Chain of Custody matches sample IDs on containers.
3.	Y N N/A	Sample received with proper pH**.	8.	Y N	Custody seal received intact and tamper evident on cooler.
4.	Y N	Sample received in proper containers.	9.	Y N	Custody seal received intact and tamper evident on bottles

* Temperature Variance Does Not Affect the Following Analyses:

** For DOE-AL (Pantex, LANL, Sandia, Timet) sites, remember to pH all containers received, except for VOA, TOX, and soils.

Notes: Trk #s: 7917 3783 9425
7909 9714 0939
7910 9784 5450
7910 9784 5460
COC #s: S04-012-101, 127, 131, 132, 135, 139, 161, 162, 165, 173, 207
S04-010-230
W04-012-259, 279 F03-020-014
B02-030-43

Corrective Action:

- ☐ Client's Name: Informed verbally on: By:
- ☐ Client's Name: Informed in writing on: By:
- ☐ Sample(s) processed "as is".
- ☐ Sample(s) on hold until: If released, notify:

Sample Control Supervisor (or designate) Review: EWilson Date: 121903

Project Management Review: Date: 12 2 03

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE
THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIALS AND THE DATE NEXT TO THAT ITEM

000008

7794

SL-ADMIN-0004, Revised 6/5/03
\\Qstlmo05\QA\FORMS\ST-LOUIS\ADMIN\Admin004_revo_05_03.doc

SEMI-VOLATILE ORGANICS

FLUOR HANFORD IC

Client Sample ID: B183M6

GC/MS Semivolatiles

Lot-Sample #...: F3L190375-001 **Work Order #...:** F65E01CA **Matrix.....:** SOLID
Date Sampled...: 12/13/03 **Date Received..:** 12/19/03
Prep Date.....: 12/22/03 **Analysis Date..:** 12/23/03
Prep Batch #...: 3356531
Dilution Factor: 1
% Moisture.....: 9.9 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Tributyl phosphate	ND	370	ug/kg	370

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	74	(19 - 115)
Phenol-d5	69	(27 - 115)
Nitrobenzene-d5	82	(10 - 115)
2-Fluorobiphenyl	80	(10 - 115)
2,4,6-Tribromophenol	69	(19 - 115)
Terphenyl-d14	79	(10 - 115)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

000010

FLUOR HANFORD IC

B183M6

GC/MS Semivolatiles

Lot-Sample #: F3L190375-001 **Work Order #:** F65E01CA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown aldol condensate		15000	M	2.903	ug/kg
Unknown organic acid		220	M	12.925	ug/kg
Triphenylphosphine oxide	791-28-6	370	M	17.14	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

000011

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: F3L190375 Work Order #...: F65E01D1-MS Matrix.....: SOLID
MS Lot-Sample #: F3L190375-001 F65E01D2-MSD
Date Sampled...: 12/13/03 Date Received..: 12/19/03
Prep Date.....: 12/22/03 Analysis Date..: 12/23/03
Prep Batch #...: 3356531
Dilution Factor: 1 % Moisture.....: 9.9

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Phenol	ND	3700	2480	ug/kg	67		SW846 8270C
	ND	3700	2420	ug/kg	65	2.6	SW846 8270C
bis(2-Chloroethyl)-ether	ND	3700	2610	ug/kg	71		SW846 8270C
	ND	3700	2560	ug/kg	69*	2.2	SW846 8270C
2-Chlorophenol	ND	3700	2520	ug/kg	68		SW846 8270C
	ND	3700	2460	ug/kg	67	2.1	SW846 8270C
2-Methylphenol	ND	3700	2580	ug/kg	70		SW846 8270C
	ND	3700	2540	ug/kg	69	1.6	SW846 8270C
2,2'-oxybis(1-Chloropropa	ND	3700	2960	ug/kg	80		SW846 8270C
	ND	3700	2880	ug/kg	78	2.8	SW846 8270C
3-Methylphenol & 4-Methylphenol	ND	3700	2630	ug/kg	71		SW846 8270C
	ND	3700	2590	ug/kg	70	1.6	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	3700	3000	ug/kg	81		SW846 8270C
	ND	3700	2970	ug/kg	80	0.85	SW846 8270C
Hexachloroethane	ND	3700	2350	ug/kg	64		SW846 8270C
	ND	3700	2380	ug/kg	64	0.98	SW846 8270C
Nitrobenzene	ND	3700	2950	ug/kg	80		SW846 8270C
	ND	3700	2890	ug/kg	78	1.9	SW846 8270C
Isophorone	ND	3700	3210	ug/kg	87		SW846 8270C
	ND	3700	3240	ug/kg	88	0.86	SW846 8270C
2-Nitrophenol	ND	3700	2660	ug/kg	72		SW846 8270C
	ND	3700	2670	ug/kg	72	0.66	SW846 8270C
2,4-Dimethylphenol	ND	3700	2750	ug/kg	74		SW846 8270C
	ND	3700	2780	ug/kg	75	1.2	SW846 8270C
bis(2-Chloroethoxy) methane	ND	3700	2930	ug/kg	79		SW846 8270C
	ND	3700	2940	ug/kg	80	0.34	SW846 8270C
2,4-Dichlorophenol	ND	3700	2650	ug/kg	72		SW846 8270C
	ND	3700	2670	ug/kg	72	0.83	SW846 8270C
1,2,4-Trichloro-benzene	ND	3700	2790	ug/kg	76		SW846 8270C
	ND	3700	2800	ug/kg	76	0.43	SW846 8270C

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: F3L190375 Work Order #...: F6SE01D1-MS Matrix.....: SOLID
MS Lot-Sample #: F3L190375-001 F6SE01D2-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Naphthalene	ND	3700	2880	ug/kg	78		SW846 8270C
	ND	3700	2880	ug/kg	78	0.30	SW846 8270C
4-Chloroaniline	ND	3700	1870	ug/kg	51		SW846 8270C
	ND	3700	2020	ug/kg	55	7.5	SW846 8270C
Hexachlorobutadiene	ND	3700	2880	ug/kg	78		SW846 8270C
	ND	3700	2860	ug/kg	77	0.58	SW846 8270C
4-Chloro-3-methylphenol	ND	3700	2810	ug/kg	76		SW846 8270C
	ND	3700	2940	ug/kg	80	4.7	SW846 8270C
2-Methylnaphthalene	ND	3700	3790	ug/kg	102		SW846 8270C
	ND	3700	3830	ug/kg	104	1.1	SW846 8270C
Hexachlorocyclopentadiene	ND	3700	217	ug/kg	5.9 a		SW846 8270C
	ND	3700	487	ug/kg	13 p	77	SW846 8270C
2,4,6-Trichlorophenol	ND	3700	2560	ug/kg	69		SW846 8270C
	ND	3700	2730	ug/kg	74	6.3	SW846 8270C
2,4,5-Trichlorophenol	ND	3700	2660	ug/kg	72		SW846 8270C
	ND	3700	2860	ug/kg	77	7.1	SW846 8270C
2-Nitroaniline	ND	3700	3160	ug/kg	85		SW846 8270C
	ND	3700	3370	ug/kg	91	6.6	SW846 8270C
Dimethyl phthalate	ND	3700	2930	ug/kg	79		SW846 8270C
	ND	3700	3150	ug/kg	85	7.2	SW846 8270C
Acenaphthylene	ND	3700	3070	ug/kg	83		SW846 8270C
	ND	3700	3200	ug/kg	86	4.1	SW846 8270C
2,6-Dinitrotoluene	ND	3700	2920	ug/kg	79		SW846 8270C
	ND	3700	3100	ug/kg	84	6.1	SW846 8270C
3-Nitroaniline	ND	3700	2640	ug/kg	71		SW846 8270C
	ND	3700	2760	ug/kg	75	4.4	SW846 8270C
Acenaphthene	ND	3700	2950	ug/kg	80		SW846 8270C
	ND	3700	3040	ug/kg	82	3.0	SW846 8270C
2,4-Dinitrophenol	ND	3700	515	ug/kg	14		SW846 8270C
	ND	3700	609	ug/kg	16	17	SW846 8270C
4-Nitrophenol	ND	3700	2750	ug/kg	74		SW846 8270C
	ND	3700	2940	ug/kg	79	6.5	SW846 8270C
Dibenzofuran	ND	3700	2890	ug/kg	78		SW846 8270C
	ND	3700	3040	ug/kg	82	5.2	SW846 8270C
2,4-Dinitrotoluene	ND	3700	3070	ug/kg	83		SW846 8270C
	ND	3700	3350	ug/kg	90	8.6	SW846 8270C

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: F3L190375 Work Order #...: F65E01D1-MS Matrix.....: SOLID
MS Lot-Sample #: F3L190375-001 F65E01D2-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Diethyl phthalate	ND	3700	3070	ug/kg	83		SW846 8270C
	ND	3700	3330	ug/kg	90	8.1	SW846 8270C
4-Chlorophenyl phenyl ether	ND	3700	2900	ug/kg	78		SW846 8270C
	ND	3700	3130	ug/kg	85	7.7	SW846 8270C
Fluorene	ND	3700	2940	ug/kg	79		SW846 8270C
	ND	3700	3110	ug/kg	84	5.5	SW846 8270C
4-Nitroaniline	ND	3700	2900	ug/kg	78		SW846 8270C
	ND	3700	3120	ug/kg	84	7.5	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	3700	1110	ug/kg	30		SW846 8270C
	ND	3700	1310	ug/kg	35	16	SW846 8270C
N-Nitrosodiphenylamine	ND	3700	3130	ug/kg	85		SW846 8270C
	ND	3700	3390	ug/kg	92	8.0	SW846 8270C
4-Bromophenyl phenyl ether	ND	3700	2830	ug/kg	76		SW846 8270C
	ND	3700	3080	ug/kg	83	8.5	SW846 8270C
Hexachlorobenzene	ND	3700	2970	ug/kg	80		SW846 8270C
	ND	3700	3220	ug/kg	87	8.3	SW846 8270C
Pentachlorophenol	ND	3700	1920	ug/kg	52		SW846 8270C
	ND	3700	2330	ug/kg	63	20	SW846 8270C
Phenanthrene	ND	3700	2950	ug/kg	80		SW846 8270C
	ND	3700	3190	ug/kg	86	8.0	SW846 8270C
Anthracene	ND	3700	2910	ug/kg	79		SW846 8270C
	ND	3700	3140	ug/kg	85	7.7	SW846 8270C
Carbazole	ND	3700	3010	ug/kg	81		SW846 8270C
	ND	3700	3230	ug/kg	87	7.0	SW846 8270C
Di-n-butyl phthalate	ND	3700	3020	ug/kg	82		SW846 8270C
	ND	3700	3260	ug/kg	88	7.8	SW846 8270C
Fluoranthene	ND	3700	2950	ug/kg	80		SW846 8270C
	ND	3700	3160	ug/kg	86	7.1	SW846 8270C
Pyrene	ND	3700	2980	ug/kg	81		SW846 8270C
	ND	3700	3250	ug/kg	88	8.8	SW846 8270C
Butyl benzyl phthalate	ND	3700	3050	ug/kg	83		SW846 8270C
	ND	3700	3360	ug/kg	91	9.5	SW846 8270C
3,3'-Dichlorobenzidine	ND	3700	2970	ug/kg	80		SW846 8270C
	ND	3700	3230	ug/kg	87	8.4	SW846 8270C
Benzo(a)anthracene	ND	3700	3080	ug/kg	83		SW846 8270C
	ND	3700	3310	ug/kg	90	7.2	SW846 8270C

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: F3L190375 Work Order #...: F65E01D1-MS Matrix.....: SOLID
MS Lot-Sample #: F3L190375-001 F65E01D2-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Chrysene	ND	3700	3180	ug/kg	86		SW846 8270C
	ND	3700	3390	ug/kg	92	6.3	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	3700	3050	ug/kg	83		SW846 8270C
	ND	3700	3330	ug/kg	90	8.6	SW846 8270C
Di-n-octyl phthalate	ND	3700	2840	ug/kg	77		SW846 8270C
	ND	3700	3250	ug/kg	88	13	SW846 8270C
Benzo(b)fluoranthene	ND	3700	2990	ug/kg	81		SW846 8270C
	ND	3700	3310	ug/kg	89	10	SW846 8270C
Benzo(k)fluoranthene	ND	3700	3090	ug/kg	84		SW846 8270C
	ND	3700	3400	ug/kg	92	9.4	SW846 8270C
Benzo(a)pyrene	ND	3700	2950	ug/kg	80		SW846 8270C
	ND	3700	3250	ug/kg	88	9.6	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	3700	3260	ug/kg	88		SW846 8270C
	ND	3700	3700	ug/kg	100	13	SW846 8270C
Dibenz(a,h)anthracene	ND	3700	3290	ug/kg	89		SW846 8270C
	ND	3700	3620	ug/kg	98	9.5	SW846 8270C
Benzo(ghi)perylene	ND	3700	3420	ug/kg	93		SW846 8270C
	ND	3700	3810	ug/kg	103	11	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	75	(19 - 115)
	72	(19 - 115)
Phenol-d5	70	(27 - 115)
	66	(27 - 115)
Nitrobenzene-d5	81	(10 - 115)
	81	(10 - 115)
2-Fluorobiphenyl	82	(10 - 115)
	83	(10 - 115)
2,4,6-Tribromophenol	74	(19 - 115)
	79	(19 - 115)
Terphenyl-d14	76	(10 - 115)
	81	(10 - 115)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

p Relative percent difference (RPD) is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

000015

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: F3L190375 **Work Order #...:** F68KN1AA **Matrix.....:** SOLID
MB Lot-Sample #: F3L220000-531

Prep Date.....: 12/22/03
Analysis Date..: 12/23/03 **Prep Batch #...:** 3356531
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Tributyl phosphate	ND	330	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	80	(19 - 115)
Phenol-d5	77	(27 - 115)
Nitrobenzene-d5	85	(10 - 115)
2-Fluorobiphenyl	84	(10 - 115)
2,4,6-Tribromophenol	61	(19 - 115)
Terphenyl-d14	84	(10 - 115)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

000016

FLUOR HANFORD IC

Method Blank Report

GC/MS Semivolatiles

Lot-Sample #: F3L220000-531 B **Work Order #:** F68KN1AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
Unknown aldol condensate		13000	M	2.903	ug/kg
Diphenyl sulfide	139-66-2	350	M	9.859	ug/kg
Benzene, 1,1'-sulfonylbis[4-ch	80-07-9	240	M	15.158	ug/kg
Triphenylphosphine oxide	791-28-6	660	M	17.135	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

000017

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: F3L190375 Work Order #...: F68KN1AC Matrix.....: SOLID
LCS Lot-Sample#: F3L220000-531
Prep Date.....: 12/22/03 Analysis Date..: 12/23/03
Prep Batch #...: 3356531
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Phenol	3330	2360	ug/kg	71	SW846 8270C
bis(2-Chloroethyl)-ether	3330	2480	ug/kg	74	SW846 8270C
2-Chlorophenol	3330	2400	ug/kg	72	SW846 8270C
2-Methylphenol	3330	2440	ug/kg	73	SW846 8270C
2,2'-oxybis(1-Chloropropa	3330	2800	ug/kg	84	SW846 8270C
3-Methylphenol & 4-Methylphenol	3330	2520	ug/kg	76	SW846 8270C
N-Nitrosodi-n-propyl-amine	3330	2870	ug/kg	86	SW846 8270C
Hexachloroethane	3330	2610	ug/kg	78	SW846 8270C
Nitrobenzene	3330	2840	ug/kg	85	SW846 8270C
Isophorone	3330	3100	ug/kg	93	SW846 8270C
2-Nitrophenol	3330	2640	ug/kg	79	SW846 8270C
2,4-Dimethylphenol	3330	2590	ug/kg	78	SW846 8270C
bis(2-Chloroethoxy) methane	3330	2820	ug/kg	85	SW846 8270C
2,4-Dichlorophenol	3330	2610	ug/kg	78	SW846 8270C
1,2,4-Trichloro-benzene	3330	2700	ug/kg	81	SW846 8270C
Naphthalene	3330	2780	ug/kg	84	SW846 8270C
4-Chloroaniline	3330	1810	ug/kg	54	SW846 8270C
Hexachlorobutadiene	3330	2770	ug/kg	83	SW846 8270C
4-Chloro-3-methylphenol	3330	2740	ug/kg	82	SW846 8270C
2-Methylnaphthalene	3330	3690	ug/kg	111	SW846 8270C
Hexachlorocyclopenta-diene	3330	3100	ug/kg	93	SW846 8270C
2,4,6-Trichloro-phenol	3330	2700	ug/kg	81	SW846 8270C
2,4,5-Trichloro-phenol	3330	2740	ug/kg	82	SW846 8270C
2-Nitroaniline	3330	3090	ug/kg	93	SW846 8270C
Dimethyl phthalate	3330	2860	ug/kg	86	SW846 8270C
Acenaphthylene	3330	3070	ug/kg	92	SW846 8270C

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000018

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: F3L190375 Work Order #...: F68KN1AC Matrix.....: SOLID
LCS Lot-Sample#: F3L220000-531

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,6-Dinitrotoluene	3330	2840	ug/kg	85	SW846 8270C
3-Nitroaniline	3330	2050	ug/kg	62	SW846 8270C
Acenaphthene	3330	2930	ug/kg	88	SW846 8270C
2,4-Dinitrophenol	3330	1790	ug/kg	54	SW846 8270C
4-Nitrophenol	3330	2940	ug/kg	88	SW846 8270C
Dibenzofuran	3330	2920	ug/kg	88	SW846 8270C
2,4-Dinitrotoluene	3330	3100	ug/kg	93	SW846 8270C
Diethyl phthalate	3330	3030	ug/kg	91	SW846 8270C
4-Chlorophenyl phenyl ether	3330	2900	ug/kg	87	SW846 8270C
Fluorene	3330	2910	ug/kg	87	SW846 8270C
4-Nitroaniline	3330	2820	ug/kg	85	SW846 8270C
4,6-Dinitro-2-methylphenol	3330	2280	ug/kg	68	SW846 8270C
N-Nitrosodiphenylamine	3330	3200	ug/kg	96	SW846 8270C
4-Bromophenyl phenyl ether	3330	2890	ug/kg	87	SW846 8270C
Hexachlorobenzene	3330	3040	ug/kg	91	SW846 8270C
Pentachlorophenol	3330	2420	ug/kg	73	SW846 8270C
Phenanthrene	3330	2990	ug/kg	90	SW846 8270C
Anthracene	3330	2930	ug/kg	88	SW846 8270C
Carbazole	3330	3000	ug/kg	90	SW846 8270C
Di-n-butyl phthalate	3330	3000	ug/kg	90	SW846 8270C
Fluoranthene	3330	2920	ug/kg	88	SW846 8270C
Pyrene	3330	3060	ug/kg	92	SW846 8270C
Butyl benzyl phthalate	3330	3120	ug/kg	94	SW846 8270C
3,3'-Dichlorobenzidine	3330	2260	ug/kg	68	SW846 8270C
Benzo(a)anthracene	3330	3110	ug/kg	93	SW846 8270C
Chrysene	3330	3180	ug/kg	95	SW846 8270C
bis(2-Ethylhexyl) phthalate	3330	3110	ug/kg	93	SW846 8270C
Di-n-octyl phthalate	3330	3020	ug/kg	91	SW846 8270C
Benzo(b)fluoranthene	3330	3010	ug/kg	90	SW846 8270C
Benzo(k)fluoranthene	3330	3290	ug/kg	99	SW846 8270C
Benzo(a)pyrene	3330	3000	ug/kg	90	SW846 8270C
Indeno(1,2,3-cd)pyrene	3330	3040	ug/kg	91	SW846 8270C
Dibenz(a,h)anthracene	3330	3120	ug/kg	93	SW846 8270C

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000019

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #....: F3L190375 **Work Order #...:** F68KN1AC **Matrix.....:** SOLID
LCS Lot-Sample#: F3L220000-531

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzo(ghi)perylene	**3330**	**3100**	**ug/kg**	**93**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	77	(30 - 115)
Phenol-d5	72	(41 115)
Nitrobenzene-d5	87	(20 - 115)
2-Fluorobiphenyl	90	(23 - 123)
2,4,6-Tribromophenol	85	(41 - 119)
Terphenyl-d14	86	(17 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

000020

FLUOR HANFORD IC

Client Sample ID: B183M6

GC Semivolatiles

Lot-Sample #...:	F3L190375-001	Work Order #...:	F65E01CC	Matrix.....:	SOLID
Date Sampled...:	12/13/03	Date Received..:	12/19/03		
Prep Date.....:	12/23/03	Analysis Date..:	12/30/03		
Prep Batch #...:	3357248				
Dilution Factor:	1				
% Moisture.....:	9.9	Method.....:	SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Kerosene	ND	28	mg/kg	28
TPH - Diesel Range - WTPH-D	ND	28	mg/kg	2.1

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	17	(10 (50)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

000021

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: F3L190375 **Work Order #...:** F65E01D3-MS **Matrix.....:** SOLID
MS Lot-Sample #: F3L190375-001 F65E01D4-MSD
Date Sampled...: 12/13/03 **Date Received..:** 12/19/03
Prep Date.....: 12/23/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3357248
Dilution Factor: 1 **% Moisture.....:** 9.9

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
TPH - Diesel Range - WTPH	**ND**	**185**	**32.3**	**mg/kg**	**17**		**SW846 8015 MOD**
	ND	**184**	**28.6**	**mg/kg**	**16**	**12**	**SW846 8015 MOD**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	13	(10 - 150)
	12	(10 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

000022

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: F3L190375 **Work Order #...:** F69DQ1AA **Matrix.....:** SOLID
MB Lot-Sample #: F3L230000-248

Prep Date.....: 12/23/03
Analysis Date..: 12/30/03 **Prep Batch #...:** 3357248
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Kerosene	ND	25	mg/kg	SW846 8015 MOD
TPH - Diesel Range - WTPH	ND	25	mg/kg	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	73 *	(75 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Surrogate recovery is outside stated control limits.

000023

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: F3L190375 **Work Order #...:** F69DQ1AC **Matrix.....:** SOLID
LCS Lot-Sample#: F3L230000-248
Prep Date.....: 12/23/03 **Analysis Date..:** 12/30/03
Prep Batch #...: 3357248
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
TPH - Diesel Range - WTPH	**83.3**	**63.7**	**mg/kg**	**76**	**SW846 8015 MO**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	117	(75 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

000024

METALS

FLUOR HANFORD IC

Client Sample ID: B183M6

TOTAL Metals

Lot-Sample #...: F3L190375-001 Matrix.....: SOLID
Date Sampled...: 12/13/03 Date Received..: 12/19/03
% Moisture.....: 9.9

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3356208						
Bismuth	187	22.2	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AF
		Dilution Factor: 1		MDL.....: 3.3		
Potassium	1430	555	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AE
		Dilution Factor: 1		MDL.....: 81.8		
Sodium	3590	555	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AG
		Dilution Factor: 1		MDL.....: 15.5		
Aluminum	7680 J	22.2	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AH
		Dilution Factor: 1		MDL.....: 2.8		
Cadmium	ND	0.56	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AJ
		Dilution Factor: 1		MDL.....: 0.041		
Calcium	10900 J	555	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AK
		Dilution Factor: 1		MDL.....: 13.1		
Chromium	8.4	1.1	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AL
		Dilution Factor: 1		MDL.....: 0.062		
Copper	14.3	2.8	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AM
		Dilution Factor: 1		MDL.....: 0.056		
Iron	30700	11.1	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AN
		Dilution Factor: 1		MDL.....: 2.5		
Lead	5.1	0.56	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AP
		Dilution Factor: 1		MDL.....: 0.15		
Magnesium	4890	555	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AQ
		Dilution Factor: 1		MDL.....: 14.1		
Manganese	450	1.7	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AR
		Dilution Factor: 1		MDL.....: 0.20		
Nickel	10.5 J	4.4	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AT
		Dilution Factor: 1		MDL.....: 0.14		
Silver	0.16 B,J	1.1	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AU
		Dilution Factor: 1		MDL.....: 0.044		

(Continued on next page)

000026

FLUOR HANFORD IC

Client Sample ID: B183M6

TOTAL Metals

Lot-Sample #...: F3L190375-001 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	79.1	5.6	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AV
		Dilution Factor: 1		MDL.....: 0.34		
Zinc	49.3	2.2	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AW
		Dilution Factor: 1		MDL.....: 0.48		
Molybdenum	ND	4.4	mg/kg	SW846 6010B	12/22-12/23/03	F65E01AX
		Dilution Factor: 1		MDL.....: 0.092		
Prep Batch #...: 3364165						
Mercury	0.33	0.037	mg/kg	SW846 7471A	12/30/03	F65E01AC
		Dilution Factor: 1		MDL.....: 0.019		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level

B Estimated result. Result is less than RL.

000027

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F3L190375 **Matrix.....:** SOLID
Date Sampled...: 12/13/03 **Date Received..:** 12/19/03

MS Lot-Sample #: F3L190375-001 **Prep Batch #...:** 3356208
% Moisture.....: 9.9

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Bismuth									
	187	222	391	mg/kg	92		SW846 6010B	12/22-12/23/03	F65E01CX
	187	222	396	mg/kg	94	1.1	SW846 6010B	12/22-12/23/03	F65E01C0
			Dilution Factor: 1						
Potassium									
	1430	5550	6690	mg/kg	95		SW846 6010B	12/22-12/23/03	F65E01CV
	1430	5550	6670	mg/kg	94	0.23	SW846 6010B	12/22-12/23/03	F65E01CW
			Dilution Factor: 1						
Sodium									
	3590	5550	8940	mg/kg	96		SW846 6010B	12/22-12/23/03	F65E01C1
	3590	5550	9030	mg/kg	98	1.0	SW846 6010B	12/22-12/23/03	F65E01C2
			Dilution Factor: 1						
Aluminum									
	7680	222	7980 N	mg/kg	134		SW846 6010B	12/22-12/23/03	F65E01C3
	7680	222	8220 N	mg/kg	240	2.9	SW846 6010B	12/22-12/23/03	F65E01C4
			Dilution Factor: 1						
Cadmium									
	ND	5.55	4.74	mg/kg	85		SW846 6010B	12/22-12/23/03	F65E01C5
	ND	5.55	4.83	mg/kg	87	1.9	SW846 6010B	12/22-12/23/03	F65E01C6
			Dilution Factor: 1						
Calcium									
	10900	5550	15800	mg/kg	89		SW846 6010B	12/22-12/23/03	F65E01C7
	10900	.5550	15900	mg/kg	91	0.50	SW846 6010B	12/22-12/23/03	F65E01C8
			Dilution Factor: 1						
Chromium									
	8.4	22.2	30.8	mg/kg	101		SW846 6010B	12/22-12/23/03	F65E01C9
	8.4	22.2	29.5	mg/kg	95	4.3	SW846 6010B	12/22-12/23/03	F65E01DA
			Dilution Factor: 1						
Copper									
	14.3	27.8	40.9	mg/kg	96		SW846 6010B	12/22-12/23/03	F65E01DC
	14.3	27.8	41.7	mg/kg	99	1.8	SW846 6010B	12/22-12/23/03	F65E01DD
			Dilution Factor: 1						

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000028

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F3L190375 **Matrix.....:** SOLID
Date Sampled...: 12/13/03 **Date Received..:** 12/19/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron									
	30700	111	30500 N	mg/kg	0.0		SW846 6010B	12/22-12/23/03	F65E01DE
	30700	111	31100 N	mg/kg	355	0.0	SW846 6010B	12/22-12/23/03	F65E01DF
			Dilution Factor: 1						
Lead									
	5.1	55.5	54.9	mg/kg	90		SW846 6010B	12/22-12/23/03	F65E01DG
	5.1	55.5	55.3	mg/kg	91	0.87	SW846 6010B	12/22-12/23/03	F65E01DH
			Dilution Factor: 1						
Magnesium									
	4890	5550	9920	mg/kg	91		SW846 6010B	12/22-12/23/03	F65E01DJ
	4890	5550	10100	mg/kg	94	1.9	SW846 6010B	12/22-12/23/03	F65E01DK
			Dilution Factor: 1						
Manganese									
	450	55.5	541 N	mg/kg	164		SW846 6010B	12/22-12/23/03	F65E01DL
	450	55.5	530 N	mg/kg	144	2.1	SW846 6010B	12/22-12/23/03	F65E01DM
			Dilution Factor: 1						
Nickel									
	10.5	55.5	59.4	mg/kg	88		SW846 6010B	12/22-12/23/03	F65E01DN
	10.5	55.5	60.3	mg/kg	90	1.4	SW846 6010B	12/22-12/23/03	F65E01DP
			Dilution Factor: 1						
Silver									
	0.16	5.55	5.39	mg/kg	94		SW846 6010B	12/22-12/23/03	F65E01DQ
	0.16	5.55	5.49	mg/kg	96	1.9	SW846 6010B	12/22-12/23/03	F65E01DR
			Dilution Factor: 1						
Vanadium									
	79.1	55.5	127	mg/kg	86		SW846 6010B	12/22-12/23/03	F65E01DT
	79.1	55.5	128	mg/kg	89	1.2	SW846 6010B	12/22-12/23/03	F65E01DU
			Dilution Factor: 1						
Zinc									
	49.3	55.5	103	mg/kg	97		SW846 6010B	12/22-12/23/03	F65E01DV
	49.3	55.5	106	mg/kg	102	2.9	SW846 6010B	12/22-12/23/03	F65E01DW
			Dilution Factor: 1						
Molybdenum									
	ND	111	102	mg/kg	92		SW846 6010B	12/22-12/23/03	F65E01DX
	ND	111	104	mg/kg	94	2.1	SW846 6010B	12/22-12/23/03	F65E01D0
			Dilution Factor: 1						

MS Lot-Sample #: F3L190375-001 **Prep Batch #...:** 3364165

% Moisture.... 000029

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F3L190375 **Matrix.....:** SOLID
Date Sampled...: 12/13/03 **Date Received..:** 12/19/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Mercury									
	0.33	0.185	0.516	mg/kg	101		SW846 7471A	12/30/03	F65E01CR
	0.33	0.185	0.538	mg/kg	113	4.2	SW846 7471A	12/30/03	F65E01CT

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

000030

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F3L220000-208 **Prep Batch #...:** 3356208						
Bismuth	ND	20.0	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AC
		Dilution Factor: 1				
Potassium	ND	500	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AA
		Dilution Factor: 1				
Sodium	ND	500	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AD
		Dilution Factor: 1				
Aluminum	**17.4 B**	**20.0**	**mg/kg**	**SW846 6010B**	**12/22-12/23/03**	**F67NV1AE**
		Dilution Factor: 1				
Cadmium	**0.060 B**	**0.50**	**mg/kg**	**SW846 6010B**	**12/22-12/23/03**	**F67NV1AF**
		Dilution Factor: 1				
Calcium	**16.8 B**	**500**	**mg/kg**	**SW846 6010B**	**12/22-12/23/03**	**F67NV1AG**
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AH
		Dilution Factor: 1				
Copper	ND	2.5	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AJ
		Dilution Factor: 1				
Iron	ND	10.0	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AK
		Dilution Factor: 1				
Lead	ND	0.50	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AL
		Dilution Factor: 1				
Magnesium	ND	500	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AM
		Dilution Factor: 1				
Manganese	ND	1.5	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AN
		Dilution Factor: 1				
Nickel	**0.35 B**	**4.0**	**mg/kg**	**SW846 6010B**	**12/22-12/23/03**	**F67NV1AP**
		Dilution Factor: 1				
Silver	**0.050 B**	**1.0**	**mg/kg**	**SW846 6010B**	**12/22-12/23/03**	**F67NV1AQ**
		Dilution Factor: 1				
Vanadium	ND	5.0	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AR
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	2.0	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AT
		Dilution Factor: 1				
Molybdenum	ND	4.0	mg/kg	SW846 6010B	12/22-12/23/03	F67NV1AU
		Dilution Factor: 1				

MB Lot-Sample #: F3L300000-165 **Prep Batch #...:** 3364165

Mercury	ND	0.033	mg/kg	SW846 7471A	12/30/03	F7E081AA
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

000032

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F3L220000-208 **Prep Batch #...:** 3356208							
Potassium	1930	1910	mg/kg	99	SW846 6010B	12/22-12/23/03	F67NV1AW
			Dilution Factor: 1				
Bismuth	200	198	mg/kg	99	SW846 6010B	12/22-12/23/03	F67NV1AX
			Dilution Factor: 1				
Sodium	452	413	mg/kg	91	SW846 6010B	12/22-12/23/03	F67NV1A0
			Dilution Factor: 1				
Aluminum	6360	5490	mg/kg	86	SW846 6010B	12/22-12/23/03	F67NV1A1
			Dilution Factor: 1				
Cadmium	101	98.8	mg/kg	98	SW846 6010B	12/22-12/23/03	F67NV1A2
			Dilution Factor: 1				
Calcium	3320	3290	mg/kg	99	SW846 6010B	12/22-12/23/03	F67NV1A3
			Dilution Factor: 1				
Chromium	167	163	mg/kg	98	SW846 6010B	12/22-12/23/03	F67NV1A4
			Dilution Factor: 1				
Copper	118	117	mg/kg	100	SW846 6010B	12/22-12/23/03	F67NV1A5
			Dilution Factor: 1				
Iron	11400	11500	mg/kg	101	SW846 6010B	12/22-12/23/03	F67NV1A6
			Dilution Factor: 1				
Lead	102	103	mg/kg	101	SW846 6010B	12/22-12/23/03	F67NV1A7
			Dilution Factor: 1				
Magnesium	1980	1880	mg/kg	95	SW846 6010B	12/22-12/23/03	F67NV1A8
			Dilution Factor: 1				
Manganese	534	514	mg/kg	96	SW846 6010B	12/22-12/23/03	F67NV1A9
			Dilution Factor: 1				
Nickel	127	124	mg/kg	98	SW846 6010B	12/22-12/23/03	F67NV1CA
			Dilution Factor: 1				
Silver	82.9	78.9	mg/kg	95	SW846 6010B	12/22-12/23/03	F67NV1CC
			Dilution Factor: 1				

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000033

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	118	117	mg/kg	99	SW846 6010B	12/22-12/23/03	F67NV1CD
			Dilution Factor: 1				
Zinc	193	193	mg/kg	100	SW846 6010B	12/22-12/23/03	F67NV1CE
			Dilution Factor: 1				
Molybdenum	45.5	47.3	mg/kg	104	SW846 6010B	12/22-12/23/03	F67NV1CF
			Dilution Factor: 1				
LCS Lot-Sample#: F3L300000-165 **Prep Batch #...:** 3364165							
Mercury	37.7	40.5	mg/kg	107	SW846 7471A	12/30/03	F7E081AC
			Dilution Factor: 50				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

000034

WET CHEMISTRY

FLUOR HANFORD IC

Client Sample ID: B183M6

General Chemistry

Lot-Sample #...: F3L190375-001 Work Order #...: F65E0 Matrix.....: SOLID
Date Sampled...: 12/13/03 Date Received..: 12/19/03
% Moisture.....: 9.9

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho	44.0	5.0	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016429
		Dilution Factor: 1		MDL..... .....: 2.6		
pH (solid)	9.9		No Units	SW846 9045A	12/22/03	3356489
		Dilution Factor: 1		MDL.....:		
Chloride	0.79 B	2.0	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016425
		Dilution Factor: 1		MDL..... .....: 0.45		
Fluoride	0.47 B,J	1.0	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016426
		Dilution Factor: 1		MDL.....: 0.40		
Hexavalent Chromium	0.70	0.40	mg/kg	SW846 7196A	01/06/04	4006381
		Dilution Factor: 1		MDL.....: 0.054		
Nitrate	4.1	0.20	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016427
		Dilution Factor: 1		MDL.....: 0.11		
Nitrate/Nitrite as N	6.4	0.50	mg/kg	MCAWW 353.1	12/23-12/26/03	3357543
		Dilution Factor: 1		MDL.....: 0.036		
Nitrite	0.13 B	0.20	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016428
		Dilution Factor: 1		MDL..... .....: 0.074		
Nitrogen, as Ammonia	ND	0.50	mg/kg	MCAWW 350.1	12/22/03	3356250
		Dilution Factor: 1		MDL.....: 0.22		
Percent Moisture	9.9	0.10	%	MCAWW 160.3 MOD	12/26-12/27/03	3361122
		Dilution Factor: 1		MDL.....:		
Sulfate	9.7	5.0	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016430
		Dilution Factor: 1		MDL..... .....: 0.54		
Total Cyanide	ND	0.50	mg/kg	SW846 9010A	12/23/03	3357235
		Dilution Factor: 1		MDL..... .: 0.13		
Total Organic Carbon	2140	25.0	mg/kg	SW846 9060	01/10-01/14/04	4016250
		Dilution Factor: 1		MDL.....: 19.8		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

000036

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F3L190375 **Matrix.....:** SOLID
Date Sampled...: 12/13/03 **Date Received..:** 12/19/03

Percnt Moisture: 21

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride			Work Order #...:		F65E01CE	MS Lot-Sample #: F3L190375-001		
	0.79	20.0	20.9	mg/kg	100	MCAWW 300.0A	01/15-01/16/04	4016425
			Dilution Factor: 1					
Fluoride			Work Order #...:		F65E01CF	MS Lot-Sample #: F3L190375-001		
	0.47	20.0	20.7	mg/kg	101	MCAWW 300.0A	01/15-01/16/04	4016426
			Dilution Factor: 1					
Nitrate			Work Order #...:		F65E01CG	MS Lot-Sample #: F3L190375-001		
	4.1	4.00	8.25	mg/kg	104	MCAWW 300.0A	01/15-01/16/04	4016427
			Dilution Factor: 1					
Nitrate/Nitrite as N			Work Order #...:		F65E01CU	MS Lot-Sample #: F3L190375-001		
	6.4	5.00	10.1	mg/kg	75	MCAWW 353.1	12/23-12/26/03	3357543
			Dilution Factor: 2					
Nitrite			Work Order #...:		F65E01CH	MS Lot-Sample #: F3L190375-001		
	0.13	1.00	1.13	mg/kg	101	MCAWW 300.0A	01/15-01/16/04	4016428
			Dilution Factor: 1					
Nitrogen, as Ammonia			Work Order #...:		F65E01CL	MS Lot-Sample #: F3L190375-001		
	ND	25.0	23.2	mg/kg	93	MCAWW 350.1	12/22/03	3356250
			Dilution Factor: 1					
Phosphate as P, Ortho			Work Order #...:		F65E01CJ	MS Lot-Sample #: F3L190375-001		
	44.0	40.0	84.5	mg/kg	101	MCAWW 300.0A	01/15-01/16/04	4016429
			Dilution Factor: 1					
Sulfate			Work Order #...:		F65E01CK	MS Lot-Sample #: F3L190375-001		
	9.7	40.0	50.0	mg/kg	101	MCAWW 300.0A	01/15-01/16/04	4016430
			Dilution Factor: 1					
Total Cyanide			Work Order #...:		F65E01CP	MS Lot-Sample #: F3L190375-001		
	ND	5.00	4.79	mg/kg	96	SW846 9010A	12/23/03	3357235
			Dilution Factor: 1					
Total Organic Carbon			Work Order #...:		F65E01CQ	MS Lot-Sample #: F3L190375-001		
	2140	600	4850 N	mg/kg	453	SW846 9060	01/10-01/16/04	4016250
			Dilution Factor: 1					

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000037

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F3L190375 Matrix.....: SOLID
Date Sampled...: 12/13/03 Date Received..: 12/19/03

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results

N Spiked analyte recovery is outside stated control limits.

000038

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F3L190375 **Matrix.....:** SOLID
Date Sampled...: 12/13/03 **Date Received..:** 12/19/03

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
							% Moisture.....: 9.9		
Hexavalent Chromium			WO#: F65E01CM-MS/F65E01CN-MSD				MS Lot-Sample #: F3L190375-001		
	0.70	40.0	40.9	mg/kg	100		SW846 7196A	01/06/04	4006381
	0.70	40.0	40.9	mg/kg	100	0.0	SW846 7196A	01/06/04	4006381
			Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

000039

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F3L190375 **Work Order #...:** F65E0-SMP F65E0-DUP **Matrix.....:** SOLID

Date Sampled...: 12/13/03 **Date Received..:** 12/19/03

% Moisture.....: 9.9

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon						SD Lot-Sample #:	F3L190375-001	
	2140	1560	mg/kg	31	(0-30)	SW846 9060	01/10-01/14/04	4016250
			Dilution Factor: 1					
Nitrate/Nitrite as N						SD Lot-Sample #:	F3L190375-001	
	6.4	5.9	mg/kg	6.7	(0 20)	MCAWW 353.1	12/23-12/26/03	3357543
			Dilution Factor: 1					
Chloride						SD Lot-Sample #:	F3L190375-001	
	0.79 B	0.93 B	mg/kg	16	(0-30)	MCAWW 300.0A	01/15-01/16/04	4016425
			Dilution Factor: 1					
Fluoride						SD Lot-Sample #:	F3L190375-001	
	0.47 B,J	0.53 B	mg/kg	12	(0 30)	MCAWW 300.0A	01/15-01/16/04	4016426
			Dilution Factor: 1					
Nitrate						SD Lot-Sample #:	F3L190375-001	
	4.1	4.1	mg/kg	0.54	(0-30)	MCAWW 300.0A	01/15-01/16/04	4016427
			Dilution Factor: 1					
Nitrite						SD Lot-Sample #:	F3L190375-001	
	0.13 B	0.12 B	mg/kg	2.9	(0-30)	MCAWW 300.0A	01/15-01/16/04	4016428
			Dilution Factor: 1					
Phosphate as P, Ortho						SD Lot-Sample #:	F3L190375-001	
	44.0	43.8	mg/kg	0.38	(0-20)	MCAWW 300.0A	01/15-01/16/04	4016429
			Dilution Factor: 1					
Sulfate						SD Lot-Sample #:	F3L190375-001	
	9.7	9.7	mg/kg	0.058	(0-30)	MCAWW 300.0A	01/15-01/16/04	4016430
			Dilution Factor: 1					
Nitrogen, as Ammonia						SD Lot-Sample #:	F3L190375-001	
	ND	ND	mg/kg	0	(0-30)	MCAWW 350.1	12/22/03	3356250
			Dilution Factor: 1					
Hexavalent Chromium						SD Lot-Sample #:	F3L190375-001	
	0.70	0.70	mg/kg	0.0	(0 35)	SW846 7196A	01/06/04	4006381
			Dilution Factor: 1					
Total Cyanide						SD Lot-Sample #:	F3L190375-001	
	ND	ND	mg/kg	0	(0-30)	SW846 9010A	12/23/03	3357235
			Dilution Factor: 1					

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SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F3L190375-000 **Work Order #...:** F65E0-SMP F65E0-DUP **Matrix.....:** SOLID

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)						SD Lot-Sample #:	F3L190375-001	
	9.9	9.9	No Units	0.20	(0-30)	SW846 9045A	12/22/03	3356489

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

000041

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: F759H1AA		MB Lot-Sample #:	F4A160000-425	
	ND	2.0	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016425
		Dilution Factor: 1				
Fluoride		Work Order #: F759L1AA		MB Lot-Sample #:	F4A160000-426	
	0.59 B	**1.0**	**mg/kg**	**MCAWW 300.0A**	**01/15-01/16/04**	**4016426**
		Dilution Factor: 1				
Hexavalent Chromium		Work Order #: F7LXW1AA		MB Lot-Sample #:	F4A060000-381	
	ND	0.40	mg/kg	SW846 7196A	01/06/04	4006381
		Dilution Factor: 1				
Nitrate		Work Order #: F759V1AA		MB Lot-Sample #:	F4A160000-427	
	ND	0.20	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016427
		Dilution Factor: 1				
Nitrate/Nitrite as N		Work Order #: F7AM01AA		MB Lot-Sample #:	F3L230000-543	
	ND	0.50	mg/kg	MCAWW 353.1	12/23-12/26/03	3357543
		Dilution Factor: 1				
Nitrite		Work Order #: F75911AA		MB Lot-Sample #:	F4A160000-428	
	ND	0.20	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016428
		Dilution Factor: 1				
Nitrogen, as Ammonia		Work Order #: F67TW1AA		MB Lot-Sample #:	F3L220000-250	
	ND	0.50	mg/kg	MCAWW 350.1	12/22/03	3356250
		Dilution Factor: 1				
Phosphate as P, Ortho		Work Order #: F75921AA		MB Lot-Sample #:	F4A160000-429	
	ND	5.0	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016429
		Dilution Factor: 1				
Sulfate		Work Order #: F75941AA		MB Lot-Sample #:	F4A160000-430	
	ND	5.0	mg/kg	MCAWW 300.0A	01/15-01/16/04	4016430
		Dilution Factor: 1				
Total Cyanide		Work Order #: F69CV1AA		MB Lot-Sample #:	F3L230000-235	
	ND	0.50	mg/kg	SW846 9010A	12/23/03	3357235
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: F75FP1AA		MB Lot-Sample #:	F4A160000-250	
	ND	25.0	mg/kg	SW846 9060	01/10-01/16/04	4016250
		Dilution Factor: 1				

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000042

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F3L190375 Matrix.....: SOLID

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

000043

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride			WO#:F759H1AC-LCS/F759H1AD-LCSD			LCS Lot-Sample#: F4A160000-425		
	10.0	10.3	mg/kg	103		MCAWW 300.0A	01/15-01/16/04	4016425
	10.0	9.39	mg/kg	94	9.0	MCAWW 300.0A	01/15-01/16/04	4016425
			Dilution Factor: 1					
Fluoride			WO#:F759L1AC-LCS/F759L1AD-LCSD			LCS Lot-Sample#: F4A160000-426		
	5.00	4.81	mg/kg	96		MCAWW 300.0A	01/15-01/16/04	4016426
	5.00	4.68	mg/kg	94	2.8	MCAWW 300.0A	01/15-01/16/04	4016426
			Dilution Factor: 1					
Nitrate			WO#:F759V1AC-LCS/F759V1AD-LCSD			LCS Lot-Sample#: F4A160000-427		
	2.00	2.03	mg/kg	101		MCAWW 300.0A	01/15-01/16/04	4016427
	2.00	1.91	mg/kg	96	5.8	MCAWW 300.0A	01/15-01/16/04	4016427
			Dilution Factor: 1					
Nitrate/Nitrite as N			WO#:F7AM01AC-LCS/F7AM01AD-LCSD			LCS Lot-Sample#: F3L230000-543		
	20.0	19.4	mg/kg	97		MCAWW 353.1	12/23-12/26/03	3357543
	20.0	19.6	mg/kg	98	0.51	MCAWW 353.1	12/23-12/26/03	3357543
			Dilution Factor: 1					
Nitrite			WO#:F75911AC-LCS/F75911AD-LCSD			LCS Lot-Sample#: F4A160000-428		
	0.800	0.834	mg/kg	104		MCAWW 300.0A	01/15-01/16/04	4016428
	0.800	0.790	mg/kg	99	5.4	MCAWW 300.0A	01/15-01/16/04	4016428
			Dilution Factor: 1					
Nitrogen, as Ammonia			WO#:F67TW1AC-LCS/F67TW1AD-LCSD			LCS Lot-Sample#: F3L220000-250		
	20.0	21.8	mg/kg	109		MCAWW 350.1	12/22/03	3356250
	20.0	21.2	mg/kg	106	2.8	MCAWW 350.1	12/22/03	3356250
			Dilution Factor: 1					
Phosphate as P, Ortho			WO#:F75921AC-LCS/F75921AD-LCSD			LCS Lot-Sample#: F4A160000-429		
	40.0	40.7	mg/kg	102		MCAWW 300.0A	01/15-01/16/04	4016429
	40.0	39.1	mg/kg	98	3.8	MCAWW 300.0A	01/15-01/16/04	4016429
			Dilution Factor: 1					
Sulfate			WO#:F75941AC-LCS/F75941AD-LCSD			LCS Lot-Sample#: F4A160000-430		
	40.0	40.4	mg/kg	101		MCAWW 300.0A	01/15-01/16/04	4016430
	40.0	38.7	mg/kg	97	4.1	MCAWW 300.0A	01/15-01/16/04	4016430
			Dilution Factor: 1					

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LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Cyanide		WO#:F69CV1AC-LCS/F69CV1AD-LCSD				LCS Lot-Sample#: F3L230000-235		
	5.00	5.05	mg/kg	101		SW846 9010A	12/23/03	3357235
	5.00	4.89	mg/kg	98	3.2	SW846 9010A	12/23/03	3357235

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

000045

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F3L190375 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)			Work Order #: F68EV1AA		LCS Lot-Sample#: F3L220000-489		
	7.00	7.01	No Units	100	SW846 9045A	12/22/03	3356489
			Dilution Factor: 1				
Hexavalent Chromium			Work Order #: F7LXW1AC		LCS Lot-Sample#: F4A060000-381		
	2.00	1.96	mg/kg	98	SW846 7196A	01/06/04	4006381
			Dilution Factor: 1				
Total Organic Carbon			Work Order #: F75FP1AC		LCS Lot-Sample#: F4A160000-250		
	600	590	mg/kg	98	SW846 9060	01/10-01/16/04	4016250
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

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