

FLUOR GLOBAL SERVICES

June 11, 2001

FH-0103116

Ms. J. H. Kessner, Program Manager
Analytical Services
Bechtel Hanford
3190 George Washington Way H9-03
Richland, Washington 99352

Dear Ms. Kessner:

FINAL RESULTS FOR THE FOR THE 233S RESIN SAMPLES – SDG9

- References: (1) HNF-SD-CD-QAPP-016, Rev. 5, *222-S Laboratory Quality Assurance Plan*, April 2, 2001.
(2) Letter, A. S. Chaloupka, BHI to E.F. Mares, FH, "Letter of Instruction for the 233S Plutonium Concentration Facility Sample Analysis," 084911, dated December 20, 2000.

This letter and attachments present the final results for resin samples BOTW32 and BOTW31-A received from the 233S Plutonium Concentration Facility Process areas at the 222-S Laboratory on March 14, 2001. The samples were analyzed for those analytes indicated on the attached copy of the chain of custody form in accordance with the *Letter of Instruction for the Plutonium Concentration Facility Sample Analysis* referenced above.

If you have any questions regarding this report, please feel free to call me on 373-4314.

Sincerely,



Ruth A. Bushaw, Project Coordinator
Analytical Services
222-S Laboratory

RAB:lda

Attachments (5)

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ATTACHMENT 1

NARRATIVE

Consisting of 4 pages,
Including cover page

FINAL RESULTS FOR THE 233S RESIN BEAD SAMPLES – SDG9

Two solid samples (B0TW31-A and B0TW32) from the 233S Plutonium Concentration Facility were received at the 222-S Laboratory on March 14, 2001. The samples were analyzed for those analytes indicated on the attached copies of the chain of custody (COC) forms in accordance with the *Letter of Instruction for the 233S Plutonium Concentration Facility (LOI)*, referenced in the cover letter.

A Data Summary Report is included as Attachment 2. The correlation between customer sample identification numbers and laboratory identification numbers are presented in the sample breakdown diagrams included as Attachment 3. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 4. Correspondences concerning analysis variances that were accepted by the 233-S Project personnel are included in Attachment 5.

On May 24, 2001, a request was received by electronic mail (included in Attachment 5) to report neptunium-237 (^{237}Np) by inductively coupled plasma/mass spectrometry (ICP/MS). The analysis results are included in the Data Summary Report.

The chain of custody forms requested plutonium-238 (^{238}Pu) by ICP/MS. However, atomic mass 238 is typically reported as uranium-238 (^{238}U) by ICP/MS because, when present, uranium is typically the major contributor at this mass unit. Since the chemist noted a high concentration at mass 238 during the ^{237}Np analysis by ICP/MS and no ^{238}Pu was detected by the alpha energy analysis, the mass of ^{238}Pu (if present) would be diluted below the detection limit and any results reported for atomic mass 238 would be uranium. Therefore, the 233-S Project cancelled the request for ^{238}Pu for these samples and added a request to report ^{238}U by ICP/MS, as indicated in the electronic message included in Attachment 5. The ^{238}U results are included in the Data Summary Report.

Sample Appearance and Handling

B0TW31-A: Contained purplish-black colored resin beads. Granules were of a consistent size and < 1 mm in diameter.

B0TW32: Contained finely divided granular material that looked similar to charcoal. It contained shiny flecks that might have been caused by light reflecting off of facets of the granules. Most of the granules were < 1mm in diameter.

Analytical Results

Holding Times

The 20-day delay between the sampling date and the date that sample B0TW31-A was received at the 222-S Laboratory, and the 222-S Laboratory requirement to perform a total alpha analysis prior to other analyses on samples with a "high alpha" designation caused the Laboratory to miss the SW-846 holding times for TCLP preparation (28 days), Hg (28 days), pH (24 hours), and nitrate (48 hours).

Quality Control Results

Laboratory Control Standards

All laboratory control standard (LCS) recoveries were acceptable in accordance with the 222-S Laboratory Quality Assurance Plan (QAPP-016).

Matrix Spikes/Matrix Spike Duplicates/Sample Duplicates

Per the LOI, no matrix spikes, matrix spike duplicate or duplicate samples were required.

Preparation Blanks

Low levels of contamination were found in the gross alpha and gross beta preparation blanks. For consistency, the laboratory practice for reporting results for the preparation blank for the gross alpha/beta analysis is to use the sample size and digestion factor from the first sample on the worklist. In this case, this practice gave a high preparation blank result for the second sample, which required a smaller dilution. In both cases, in comparing the total counts per minute in the preparation blank to the samples, the contamination was less than 5% of the sample results and was considered insignificant. No reanalysis was requested.

Practical Quantitation Limits (PQL)

All PQLs were met, except as discussed below. For those analytes reported as non-detected, the customer requested practical quantitation limits (PQL) or detection limits (DL) were not met for the following analytes.

For gamma energy analysis (GEA), the following analytes were over the required PQL: cobalt-60, cesium-137, europium-152, europium-154, europium-155, radium-226, and radium-228. This was due to the small sample size, driven by the amounts of americium and plutonium in the samples. PQLs for alpha energy analysis (AEA) were not met for plutonium-238 and curium-243/44 because of the dilution required to reduce the activity of plutonium-239/40 and americium-241 in the samples. For ICP/MS, PQLs were not met for uranium-234 on both samples, and uranium-235 and americium-241 on sample B0TW31-A. The ICP/MS PQLs were not met because of the dilution required to reduce the concentration of plutonium-239/40 and the dissolved solids in the samples.

For ion chromatography, the PQLs for fluoride, chloride, sulfate, phosphate, oxalate, and nitrite were not met. The high reported detection limits were the result of dilutions required for sample analysis due to the high nitrate concentration. A reanalysis was not performed because the laboratory used the least dilution, or the largest sample size possible.

All other requested PQLs were met.

Analytical Procedures

Table 1 presents the 222-S Laboratory analytical procedures used to generate the reported results.

Table 1. Analytical Procedures

Analysis	Preparation Procedure	Analysis Procedure
Inorganic Analyses		
pH	Direct	LA-212-106 Rev. C-6
Hg	Direct	LA-325-106 Rev. A-4
CN	Direct	LA-695-103 Rev. E-0
IC	Water Digest	LA-533-107 Rev. B-0
ICP	TCLP Extraction/ Acid Digest	LA-505-161 Rev. D-0
ICP/MS	Fusion Digest of Solid	LA-506-101 Rev A-4
Radionuclide Analyses		
AT/TB	Fusion Digest of Solid	LA-508-101 Rev. G-2
²⁴¹ Am AEA	Fusion Digest of Solid	LA-953-104 Rev B-4
^{239/240} Pu	Fusion Digest of Solid	LA-953-104 Rev B-4
²³⁷ Np	Fusion Digest of Solid	LA-933-141 Rev H-5
GEA	Fusion Digest of Solid	LA-548-121 Rev F-2

Acid digest procedure – liquid: LA-505-158 Rev. F-0

Water digest procedure – solid: LA-504-101 Rev. G-3

Fusion dissolution – solid: LA-549-141 G-2

TCLP procedure – LA-544-134 Rev C-1

Abbreviations

Hg – mercury

IC – ion chromatography

ICP – inductively coupled plasma

AT/TB – total alpha/total beta

AEA – alpha energy analysis

Np – neptunium

GEA – gamma energy analysis

Am – americium

Pu – plutonium

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ATTACHMENT 2

DATA SUMMARY REPORT

Consisting of 4 pages,
Including cover page

Attachment 2. Data Summary Report
233S SDG9

CORE NUMBER: n/a
SEGMENT #: BOTW32

SEGMENT PORTION: FUSION01

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S01M000125	F		Neptunium-237 by ICP/MS-fusion	ug/g	107.0	<0.0361	< 28.91	n/a	n/a	n/a	87.31	28.91	n/a
S01M000125	F		Pu-239/240 by TRU-SPEC Resin	uCi/g	109.8	<5.13E-1	5.06e+03	n/a	n/a	n/a	n/a	355.0	1.73E+00
S01M000125	F		Pu-238 by TRU-SPEC Resin IonEx	uCi/g	n/a	<5.13E-1	<3.55e+02	n/a	n/a	n/a	n/a	355.0	6.37E+00
S01M000125	F		Np237 by TTA Extraction	uCi/g	96.10	<1.40E-2	1.44e-02	n/a	n/a	n/a	n/a	2.96e-02	1.22E+02
S01M000125	F		Uranium-234 by ICP/MS (Fusion)	ug/g	n/a	<0.0289	< 23.13	<23.1	n/a	n/a	n/a	23.13	n/a
S01M000125	F		Uranium-235 by ICP/MS (Fusion)	ug/g	100.0	<0.0289	54.16	56.10	55.13	3.52	86.11	23.13	n/a
S01M000125	F		Uranium-238 by ICP/MS (Fusion)	ug/g	105.0	<0.0289	8.72e+02	n/a	n/a	n/a	85.00	23.13	n/a
S01M000125	F		Plutonium-239 by ICP/MS-Fusion	ug/g	105.9	<0.0361	4.89e+04	4.94e+04	4.92e+04	1.00	77.11	28.91	n/a
S01M000125	F		Plutonium-240 by ICP/MS-fusion	ug/g	n/a	<0.0361	3.46e+03	3.39e+03	3.42e+03	1.93	n/a	28.91	n/a
S01M000125	F		Pu/Am-241 by ICP/MS - fusion	ug/g	103.0	<0.0361	3.07e+02	292.0	299.5	5.01	81.95	28.91	n/a
S01M000125	F		Cobalt-60 by GEA	uCi/g	104.8	<1.37e-2	<2.32e-02	n/a	n/a	n/a	n/a	2.32e-02	n/a
S01M000125	F		Cesium-137 by GEA	uCi/g	99.63	<1.61e-2	<2.52e-02	n/a	n/a	n/a	n/a	2.52e-02	n/a
S01M000125	F		Europium-152 by GEA	uCi/g	n/a	<2.98e-2	<5.14e-02	n/a	n/a	n/a	n/a	5.14e-02	n/a
S01M000125	F		Europium-154 by GEA	uCi/g	n/a	<4.24e-2	<6.83e-02	n/a	n/a	n/a	n/a	6.83e-02	n/a
S01M000125	F		Europium-155 by GEA	uCi/g	n/a	<2.21e-2	<5.36e-02	n/a	n/a	n/a	n/a	5.36e-02	n/a
S01M000125	F		Radium-226 by GEA	uCi/g	n/a	<2.76e-1	<4.56e-01	n/a	n/a	n/a	n/a	4.56e-01	n/a
S01M000125	F		Americium-241 by GEA	uCi/g	n/a	<1.94e-2	9.85e+02	n/a	n/a	n/a	n/a	n/a	0.110
S01M000125	F		Am-241 by TRU-SPEC Resin IonEx	uCi/g	103.1	<3.28E+2	1.04e+03	n/a	n/a	n/a	n/a	360.0	2.90E+00
S01M000125	F		Cm-243/244 by TRU-SPEC Resin	uCi/g	n/a	<3.28E+2	<3.60e+02	n/a	n/a	n/a	n/a	360.0	1.00E+02
S01M000125	F		Alpha of Digested Solid	uCi/g	94.48	6.20E-1	4.71e+03	n/a	n/a	n/a	n/a	7.27e-01	9.23E-01
S01M000125	F		Beta of Solid Sample	uCi/g	109.0	4.25E+0	4.07e+02	n/a	n/a	n/a	n/a	4.770	2.56E+00

PARENT: PARENT

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S01M000123			Volume % Settled Solids	%	n/a	n/a	1.00e+02	n/a	n/a	n/a	n/a	1.00e-01	n/a
S01M000123			Color of Sample		n/a	n/a	black	n/a	n/a	n/a	n/a	n/a	n/a

Attachment 2. Data Summary Report
233S SDG9

CORE NUMBER: n/a
SEGMENT #: BOTW31-A

SEGMENT PORTION: FUSION01

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S01M000128	F		Neptunium-237 by ICP/MS-fusion	ug/g	107.0	<0.0361	< 3.056	n/a	n/a	n/a	n/a	3.056	n/a
S01M000128	F		Pu-239/240 by TRU-SPEC Resin	uCi/g	109.8	<5.13E-1	13.90	n/a	n/a	n/a	n/a	1.100	1.87E+00
S01M000128	F		Pu-238 by TRU-SPEC Resin IonEx	uCi/g	n/a	<5.13E-1	< 1.100	n/a	n/a	n/a	n/a	1.100	7.32E+00
S01M000128	F		Np237 by TTA Extraction	uCi/g	96.10	<1.40E-2	<1.20E-02	n/a	n/a	n/a	n/a	1.88E-02	3.67E+02
S01M000128	F		Uranium-234 by ICP/MS (Fusion)	ug/g	n/a	<0.0289	< 2.445	n/a	n/a	n/a	n/a	2.444	n/a
S01M000128	F		Uranium-235 by ICP/MS (Fusion)	ug/g	100.0	<0.0289	< 2.445	n/a	n/a	n/a	n/a	2.444	n/a
S01M000128	F		Uranium-238 by ICP/MS (Fusion)	ug/g	105.0	<0.0289	5.297	n/a	n/a	n/a	n/a	2.444	n/a
S01M000128	F		Plutonium-239 by ICP/MS-fusion	ug/g	105.9	<0.0361	1.44E+02	n/a	n/a	n/a	n/a	3.056	n/a
S01M000128	F		Plutonium-240 by ICP/MS-fusion	ug/g	n/a	<0.0361	10.51	n/a	n/a	n/a	n/a	3.056	n/a
S01M000128	F		Pu/Am-241 by ICP/MS - fusion	ug/g	103.0	<0.0361	< 3.056	n/a	n/a	n/a	n/a	3.056	n/a
S01M000128	F		Cobalt-60 by GEA	uCi/g	104.8	<1.37E-2	<1.35E-02	n/a	n/a	n/a	n/a	1.35E-02	n/a
S01M000128	F		Cesium-137 by GEA	uCi/g	99.63	<1.61E-2	<1.65E-02	n/a	n/a	n/a	n/a	1.65E-02	n/a
S01M000128	F		Europium-152 by GEA	uCi/g	n/a	<2.98E-2	<2.92E-02	n/a	n/a	n/a	n/a	2.92E-02	n/a
S01M000128	F		Europium-154 by GEA	uCi/g	n/a	<4.24E-2	<4.49E-02	n/a	n/a	n/a	n/a	4.49E-02	n/a
S01M000128	F		Europium-155 by GEA	uCi/g	n/a	<2.21E-2	<2.22E-02	n/a	n/a	n/a	n/a	2.22E-02	n/a
S01M000128	F		Radium-226 by GEA	uCi/g	n/a	<2.76E-1	<2.80E-01	n/a	n/a	n/a	n/a	2.80E-01	n/a
S01M000128	F		Americium-241 by GEA	uCi/g	n/a	<1.94E-2	4.064	n/a	n/a	n/a	n/a	n/a	1.51
S01M000128	F		Am-241 by TRU-SPEC Resin IonEx	uCi/g	103.1	<3.28E+2	3.640	n/a	n/a	n/a	n/a	1.140	2.85E+00
S01M000128	F		Cm-243/244 by TRU-SPEC Resin	uCi/g	n/a	<3.28E+2	< 1.140	n/a	n/a	n/a	n/a	1.140	1.00E+02
S01M000128	F		Alpha of Digested Solid	uCi/g	96.48	6.20E-1	10.60	n/a	n/a	n/a	n/a	4.61E-03	1.54E+00
S01M000128	F		Beta of Solid Sample	uCi/g	109.0	4.25E+0	1.020	n/a	n/a	n/a	n/a	3.03E-02	4.33E+00

H200IG01: H200IG01

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S01M000127	W		Fluoride IC SW846	ug/g	91.32	<0.012	<2.34E+02	n/a	n/a	n/a	n/a	234.4	n/a
S01M000127	W		Chloride SW-846	ug/g	95.88	<0.0170	<3.32E+02	n/a	n/a	n/a	n/a	332.1	n/a
S01M000127	W		Nitrite IC SW846	ug/g	87.43	<0.108	<2.11E+03	n/a	n/a	n/a	n/a	2.11E+03	n/a
S01M000127	W		Nitrate by IC SW846	ug/g	110.5	<0.139	8.49E+04	n/a	n/a	n/a	n/a	2.72E+03	n/a
S01M000127	W		Phosphate by IC SW846	ug/g	106.0	<0.120	<2.34E+03	n/a	n/a	n/a	n/a	2.34E+03	n/a
S01M000127	W		Sulfate by IC SW846	ug/g	101.2	<0.138	<2.70E+03	n/a	n/a	n/a	n/a	2.70E+03	n/a
S01M000127	W		Oxalate by IC SW846	ug/g	105.3	<0.105	<2.05E+03	n/a	n/a	n/a	n/a	2.05E+03	n/a

PARENT: PARENT

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S01M000126			pH on Solid Samples	pH	n/a	n/a	1.520	n/a	n/a	n/a	n/a	1.00E-02	n/a
S01M000126			Volume % Settled Solids	%	n/a	n/a	1.00E+02	n/a	n/a	n/a	n/a	1.00E-01	n/a
S01M000126			Color of Sample		n/a	n/a	purp/blk	n/a	n/a	n/a	n/a	n/a	n/a

TCLP EXTRACT: TCLP EXTRACT

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S01M000129	T		Mercury by CVAA (PE) with FIAS	ug/mL	103.1	<6.0e-5	1.22e-02	n/a	n/a	n/a	n/a	1.20e-03	n/a

TCLP METALS: TCLP METALS

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S01M000130	B		Silver -ICP-Acid Digest-Liquid	ug/mL	84.50	<0.0100	<2.50e-02	n/a	n/a	n/a	n/a	2.50e-02	n/a
S01M000130	B		Arsenic -ICP-Acid Digest-Liq	ug/mL	91.30	<0.100	<2.50e-01	n/a	n/a	n/a	n/a	2.50e-01	n/a
S01M000130	B		Barium -ICP-Acid Digest-Liquid	ug/mL	88.50	0.201	2.260	n/a	n/a	n/a	n/a	1.25e-01	n/a
S01M000130	B		Cadmium -ICP-Acid Digest-Liq	ug/mL	89.20	<0.00500	1.97e-02	n/a	n/a	n/a	n/a	1.25e-02	n/a
S01M000130	B		Chromium -ICP-Acid Digest-Liq	ug/mL	86.40	<0.0100	2.44e+02	n/a	n/a	n/a	n/a	2.50e-02	n/a
S01M000130	B		Lead -ICP-Acid Digest-Liquid	ug/mL	83.20	<0.100	<2.50e-01	n/a	n/a	n/a	n/a	2.50e-01	n/a
S01M000130	B		Selenium -ICP-Acid Digest-Liq	ug/mL	91.00	<0.100	2.71e-01	n/a	n/a	n/a	n/a	2.50e-01	n/a

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ATTACHMENT 3

SAMPLE BREAKDOWN DIAGRAM

Consisting of 3 pages,
Including cover page

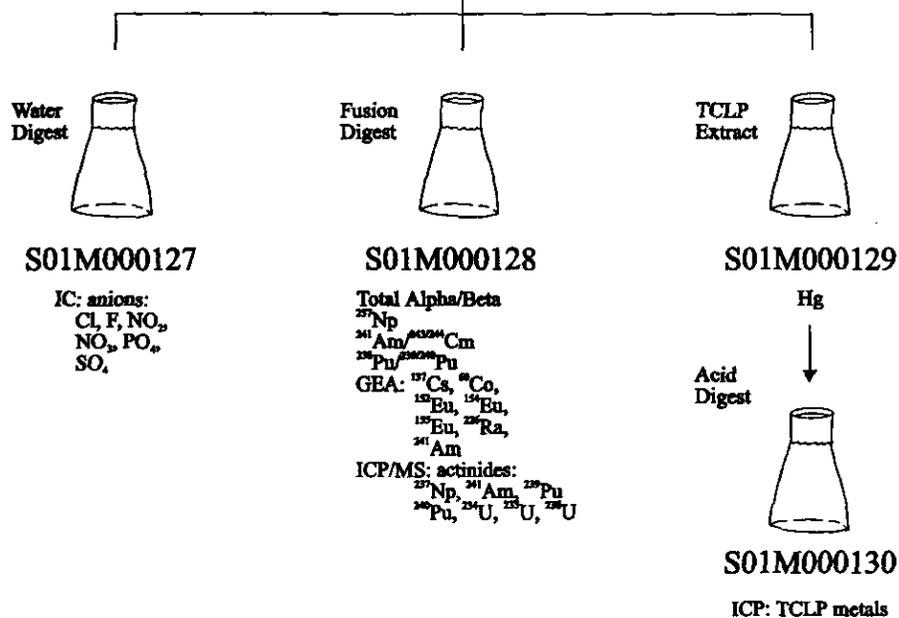
233-S Pu Concentration Facility Samples

SDG9
Resin Beads
B0TW31-A



S01M000126

Appearance
pH



233-S Pu Concentration Facility Samples

SDG9
Burnt Resin Beads
B0TW32



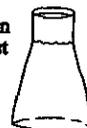
S01M000123
Appearance



S01M000124



Fusion
Digest



S01M000125

Total Alpha/Beta

²³⁷Np

²⁴¹Am, ²⁴⁰Pu, ²⁴²Cm

²³⁸Pu, ²³⁹Pu

GEA: ¹³⁷Cs, ⁶⁰Co,

¹⁵²Eu, ¹⁵⁴Eu,

¹⁵³Eu, ²²⁶Ra,

²⁴¹Am

ICP/MS: actinides:

²³⁷Np, ²⁴¹Am, ²³⁹Pu

²³⁸Pu, ²³⁴U, ²³⁵U, ²³⁸U

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ATTACHMENT 4

**CHAIN OF CUSTODY AND
REQUEST FOR SAMPLE ANALYSIS FORMS**

Consisting of 4 pages,
Including cover page

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B99-024-36		Page 1 of 1				
Collector J. Dawis		Company Contact Steve Trent		Telephone No. 372-9651		Project Coordinator TRENT, SJ		Price Code 9L		Data Turnaround 60 Days				
Project Designation 233-S Plutonium Concentration Facility Process Areas - Oth		Sampling Location 233-S		SAF No. B99-024		Air Quality <input type="checkbox"/>								
Ice Chest No. Viking - 03-95-010026		Field Logbook No. WA		COA R233SP280C		Method of Shipment HAND CARRY								
Shipped To 222-S Lab Operations		Offsite Property No. RSR 107066				Bill of Lading/Air Bill No. WA								
POSSIBLE SAMPLE HAZARDS/REMARKS CORROSIVE/RADIOACTIVE Sample originally sent to RCF. Sample re-labeled & new COC generated for 222-S Lab. Page 2 of 2 represents special handling and/or storage. Represents custody transfer to 222-S.				Preservation	Cool 4C	None	None	None	None	None	None	None		
				Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
				No. of Container(s)	0	0	0	0	0	0	0	0	0	1
				Volume	60mL	60mL	60mL	60mL	60mL	60mL	60mL	60mL	60mL	60mL
SAMPLE ANALYSIS				See item (1) in Special Instructions.	See item (2) in Special Instructions.	Americium-241/Curium-244	See item (3) in Special Instructions.	Isotopic Plutonium	Mercury - 7471 - (CV)	Metals by ICP (TCLP) - 1311/6010A; Mercury (TCLP) - 1311/7470	Neptunium-237	pH (Soil) - 9045	Gross Alpha, Gross Beta	
				Sample No.	Matrix *	Sample Date	Sample Time							
B0TW31-A	OTHER SOLID	2-22-01	0900	X	X	X	X	X	X	X	X	X		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By R. Thoner		Date/Time 1500 3/14/01		Received By R. Trent		Date/Time 3/14/01 1600		(1) IC Anions - 9056 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); IC Anions - 9056 Add On (Oxalate) (2) Actinides IC PMS (Americium-241, Plutonium-238, Plutonium-239/240, Uranium-234, Uranium-235) (3) Gamma Spectroscopy (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226) Perform all analysis out of 60mL Amber glass bottle. Contact Steve Trent for order of priority.				S=Soil SE=Sediment SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By		Date/Time		Received By		Date/Time								
Relinquished By		Date/Time		Received By		Date/Time								
Relinquished By		Date/Time		Received By		Date/Time								
Relinquished By		Date/Time		Received By		Date/Time								
LABORATORY SECTION		Received By		Title		Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time								

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B99-024-035		Page 1 of 1				
Collector J. DAVIS		Company Contact Steve Trent		Telephone No. 372-9651		Project Coordinator TRENT, SJ		Price Code 9L		Data Turnaround 60 Days			
Project Designation 233-S Plutonium Concentration Facility Process Areas - Oth		Sampling Location 233-S			SAF No. B99-024		Air Quality <input type="checkbox"/>						
Ice Chest No. Uiking 03-09-010026		Field Logbook No. WYA		COA R233SP280C		Method of Shipment Govt. Vehicle							
Shipped To 222-S Lab Operations		Offsite Property No. NA			Bill of Lading/Air Bill No. NA								
POSSIBLE SAMPLE HAZARDS/REMARKS RADIOACTIVE Special Handling and/or Storage				Preservation		None	None	None	None	None	None		
				Type of Container		aG	aG	aG	aG	aG	aG		
				No. of Container(s)		0	0	0	0	0	1		
				Volume		60ml 0	60ml 0	60ml 0	60ml 0	60ml 0	60ml 5ml	R 3-14-01	
SAMPLE ANALYSIS				See item (1) in Special Instructions.		Americium-241/Curium-244	See item (2) in Special Instructions.		Isotopic Plutonium	Neptunium-237	Gross Alpha; Gross Beta		
				Sample No.		Matrix *		Sample Date		Sample Time			
BOTW32		OTHER SOLID		3/14/01		1330		X	X	X	X		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) Actinides ICPMS (Americium-241, Plutonium-238, Plutonium-239/240, Uranium-234, Uranium-235) (2) Gamma Spectroscopy (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226) Perform all analysis out of 1-60ml Amber glass, 5ml volume Contact Steve Trent for order of Priority.				S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other	
J.M. Hamblein S.M. Hamblein		13:30 3/14/01		R. Thorer		1330 3/14/01							
R. Thorer		1600 3/14/01		Romeo's		1500 3/14/01							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By				Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time			

REQUEST FOR SAMPLE ANALYSIS (RSA)

Group ID No. (For lab use only)

Sample Origin 233-S Facility (BHI)	2. Date Sampled	4. Requestor's Name SJ TRENT	6. CACN/COA HS 382/ES40 DB1051	7. Cost Center
Customer/Project Code	3. Submitted By		5. Requestor's Phone/MSIN/FAX 2-9651/49-03/2-9487	

1. Customer ID No.	9. Laboratory Sample No.	10. Volume of Sample	11. Matrix of Sample	12. Requested Analyses	13. Expected Range
30TW31-A		~60ml	resin beads	see chain of custody	< 0.01g Pu
30TW32		~5ml	"	"	~0.03g Pu
					0.81g Pu
					per NDA
					changed per
					telecom with
					R. Weiss 3/14/01
					RT Fish

14. Does sample have a MSDS?

Yes HEHF assigned MSDS No. _____

No Description of process that produced waste/sample:

Resin beads collected from process vessels

Will radiochemistry results be used for unconditional release? Yes No

15. Is this sample RCRA listed? Yes No

Applicable Listed Waste Codes:

Yes No P Codes: (list) _____

Yes No U Codes: (list) _____

Yes No K Codes: (list) _____

Yes No F Codes: (list) _____

Applicable Characteristic Codes:

Yes No D001: (how determined) _____ Ignitable

Yes No D002: (how determined) _____ Corrosive

Yes No D003: (how determined) _____ Reactive

Yes No Toxic: (list codes) _____

PCB: Does this waste/sample contain PCBs?

Yes Over 500 ppm

Yes Over 50 ppm

Yes PCBs are suspected see ①

No PCBs are suspected

If YES, what is the source of the PCBs?

Transformer, capacitor, or ballast

Other, specify _____

Unknown

16. Sample Disposition

Return to Customer

Samples found to contain PCBs will be returned to the customer

Dispose of per facility procedures with applied charges for analyses and disposal

Sample(s) Dose Rate at Contact: **640 mR/hr deep**
1180 mR/hr shallow (8 mR/hr @ 20cm)

HPT Signature: *C. Felder*

17. QC Required Per 222-S Laboratory Quality Assurance Plan (HNF-SD-CP-QAPP-016)

Other (list reference document or attach) **LOI for the 233-S Plutonium Concentration Facility**

18. Special Instructions (Special Storage Requirements, Reporting format, holding times, etc.)

① PCBs suspected for sample 30TW32 only

19. Requested Turnaround Time

2 Weeks 4 Weeks

Other **45 days interim**
60 days

20. Sample Received By: *R. Weiss*

Date: **3/14/01** Time: **15:00**

21. Chain of Custody

No Yes

Number: **699-024-34-35-36**

FH-0103116

ATTACHMENT 5

INTERNAL EMAIL
“CANCELLATION OF Pu-238 ANALYSIS;
ADDITION OF U-238 ANALYSIS”
“ADDITION OF Np-237 ANALYSIS BY ICP-MS”

Consisting of 3 pages
Including cover page

Esch, Ruth A

From: Trent, Stephen J
Sent: Wednesday, June 06, 2001 10:35 AM
To: Esch, Ruth A
Cc: Powell, Katherine L; Ayres, Doris E
Subject: Cancellation of Pu-238 analysis; addition of U-238 analysis

Ruth:

Please cancel the Pu-238 analysis by ICP-MS on SDG9. However, please add U-238 by ICP-MS to the same SDG.

The client indicated that if this change delays the report by 1 or 2 days, then that's ok.

Regards,

Steve Trent
ERC Sample Management
372-9651

Esch, Ruth A

From: Trent, Stephen J
Sent: Thursday, May 24, 2001 11:36 AM
To: Powell, Katherine L
Cc: Esch, Ruth A; McKinney, Steve G; Ayres, Doris
Subject: Addition of Np-237 analysis by ICP-MS

Kathy:

Please have the laboratory analyse the following 233-S project samples for Np-237 using the ICP-MS method -

B0TW31-A (SDG9)
B0TW32 (SDG9)
B118R2-A (SDG8)
B118R3 (SDG8)

If any of these sample require re-extraction for the analysis, please call. Also, it was brought to my attention by the 233-S project that sample B0TW32 was erroneously tagged as "PCB Suspect" by BHI Sample Management (that would be me). Apparently the sample material originated from within a closed system at the facility and was never exposed to any of the PCB-contaminated materials or processes. Please inform the laboratory that any waste generated by this additional analysis can be handled as "no PCBs suspected".

Please have the laboratory report these data in the simple summary format we usually receive for interim data reports.

Finally, for the new samples recently delivered to the lab, B11Y74 and B11Y22 (SDG10 and SDG11??) please add the Np-237 by ICP-MS to the analytical request list.

Regards,

Steve Trent
BHI Sample Management

6/6/01